

## CHAPTER 7

### **Dvaravati Urbanism in Comparative Perspective**

The urban centers and polities that emerged in central and northeastern Thailand during the first millennium CE were part of a broader social and political transformation occurring across Southeast Asia at that time. A comparison of the urban traditions within this region highlights common features resulting from similar ecological settings and historical trajectories; however, there are also interesting differences that set each tradition apart. Some of the unique features of urbanism in Southeast Asia provide valuable, and underutilized, data for broader comparative studies of urbanism and political complexity. The function, population densities and development of Southeast Asian urban communities challenge some of our preconceptions about what it means to be “urban”. Alternatively, the important roles of ideology, monument construction and new social relationships in the creation of urban communities in Southeast Asia reveal that they also shared important social features with urban traditions in other parts of the world.

In this chapter, I consider how the creation and character of Dvaravati urban centers compare to those in neighboring parts of Southeast Asia. I begin by examining the timing and contexts of the creation of urban centers in Southeast Asia. Contact with societies in South and East Asia presented opportunities to enterprising individuals throughout Southeast Asia to expand their economic and political influence. These contacts encouraged the development of centers in coastal locations with residents who focused on economic activities related to trade. Other centers developed further inland, where the control of agriculture in the surrounding hinterland played a more important role. I examine how these different cultural and ecological contexts influenced the features and functions of the urban centers that developed in the region. Next, I

compare the different ways in which the societies within Southeast Asia adapted South Asian ideologies and materialized them through the construction of monuments and sculpture in and around their urban centers. These activities played an important role in the construction of urban communities and the rise of political authority throughout the region. Finally, I identify some directions for future research on Dvaravati centers that will contribute to our understandings of this still enigmatic civilization, and in doing so broaden our perspective on the challenges and opportunities that humans have faced in the urban revolution.

### **Urban centers in Southeast Asia and beyond**

#### *Secondary States and Urban Centers*

Over the course of human history there are only a few examples of primary cities or states that developed without a historical legacy of such formations or contact with other societies that had already developed them. In contrast, secondary cities and states, which develop in contexts where such transformations have already taken place or affected a society through contact, are far more common. Of these two secondary phenomena, however, the majority of research has focused on secondary state formation (Parkinson and Galaty 2007; Price 1978), neglecting to consider how this process was related to or differed from secondary urbanization. The fact that many cities persisted through periods of state collapse and reformation, indicates that there are significant differences between the socio-political foundations of secondary states and urban centers that await greater theoretical explication. In first millennium CE Thailand, and Southeast Asia more broadly, cities and states developed in a region that had not previously seen such formations. These were still secondary developments since they occurred within the context of direct and indirect contact with individuals from the cities and states of South and East Asia. However, I argue that these types of secondary developments are distinctly different from those that occurred within a region that had previously been home to cities or states. In particular, Southeast Asians required new types of ideologies, identities and relationships as they transformed their societies, whereas continuities with preexisting structures and relationship may have

persisted (to a greater or lesser extent these may have continued to exist among the members of a society whose forbearers had previously lived in cities and states.

The development of urban centers and polities with substantial political and economic influence in central Thailand during the first millennium CE highlights how this process was driven by local elites and communities who used access to foreign contacts, goods and ideologies to gain favor and influence over their neighbors. In Chapter 2, I demonstrated how differences in the distribution of resources, such as metal ores, enabled some prehistoric communities to accumulate greater influence and wealth. Access to maritime and terrestrial trade routes presented a similar differentially distributed resource, and as the flow of trade goods and contacts increased, they became increasingly important sources of economic and social opportunities. The two largest Dvaravati centers, Nakhon Pathom and Sri Thep, developed in locations at the interface between the Chao Phraya Basin and outside trade networks. Nakhon Pathom was ideally situated to act as an intermediary between maritime trade networks in the Gulf of Thailand and the communities further up river; Sri Thep, was much further inland, but was also situated along the route between central Thailand and points north and east.

Similarly, Oc Eo, one of the earliest and largest urban centers in first millennium CE Southeast Asia (Table 7.1), developed in a coastal location in the Mekong delta where it was ideally positioned to engage in trade through maritime and upriver trade networks (Mallert 1959-63; Manguin and Vo 2000). Additional centers in insular Southeast Asia, the Malay Peninsula, and the central coast of Vietnam developed in locations that allowed their residents to capitalize on maritime trade (Manguin 2004). Alternatively, other centers developed economies more heavily reliant on the production and control of agricultural surpluses. Differences in the character and origins of these urban centers resulted from a combination of geography, historical events and the goals of local elites and their communities. I now examine these factors and their relationships to the differences in the political economies of the urban communities within Southeast Asia.

**Table 7.1.** Site-sizes and locations of selected first millennium CE centers in mainland Southeast Asia (from Stark 2006:Table 1 with additions and modifications to the Dvaravati data)

Region	Geographic location	Approximate date range	Site name	Site area (ha)	Source
Myanmar/Burma	Dry zone	1-500 CE?	Maingmaw	222	Moore 2003:table 2; 2004b
Myanmar/Burma	Dry zone	1-500 (Pyu)	Beikthano	291.7	Moore 2003:table 2; 2004b
Myanmar/Burma	Dry zone	1000-780 (Pyu)	Halin <sup>1</sup>	208	Aung Thaw 1972; Moore 2003:table 2
Myanmar/Burma	Dry zone	400-800 CE (Pyu)	Sriksetra <sup>2</sup>	1477	Moore 2003:table 2
Myanmar/Burma	West coast	450-800 CE (Pyu)	Dhanyawadi <sup>2</sup>	572	Calculated from Gutman and Hudson 2004: fig. 7.9
Vietnam	Central Coast	400-700 CE (Linyi/Cham)	Thanh Ho	490	Parmentier 1909:137–138, pl. XXVII; Southworth (personal communication with Stark 2006)
Vietnam	Central Coast	600-800 CE? (Linyi/Cham)	Chau Sa	160	Parmentier 1909:235-236, pl. LV; Southworth (personal communication with Stark 2006)
Vietnam	Central Coast	500-600 CE? (Linyi/Cham)	Thanh Loi	250	Parmentier 1909:512–14, pl. CVI
Vietnam	Central Coast	100-800 CE (Linyi/Cham)	Tra Kieu <sup>2</sup>	850	Claeys 1928, pp. 469–70, pl XXXVIII)
Vietnam	Mekong delta	1-1000 CE (Funan)	Oc Eo <sup>2,3</sup>	450	Malleret 1959; Manguin & Vo 2000:113
Cambodia	Mekong delta	1-1000 CE (Funan)	Angkor Borei <sup>1,3</sup>	300	Stark et al. 1999
Cambodia	Central Mekong	500-800 CE (Chenla)	Sambor Prei Kuk (Isanapura) <sup>1</sup>	400	I. Shimoda (personal communication with Stark 2005)
Thailand	Chao Phraya basin	early Dvaravati	Nakhon Pathom <sup>4</sup>	659	
Thailand	Chao Phraya basin	early Dvaravati	Sri Thep <sup>4</sup>	469	
Thailand	Chao Phraya basin	early Dvaravati	U-Thong <sup>4</sup>	96.3	

<sup>1</sup>Size only includes walled area; substantial settlement also found beyond the walls.

<sup>2</sup>Site occupation span extends beyond a.d. 700, which in some cases may explain the large area reported.

<sup>3</sup>Site occupation extends beyond a.d. 700; area listed refers specifically to a.d. 1–600 occupational span.

<sup>4</sup>Site sizes and chronology updated based on measurements in Appendix B of this thesis.



### *Variability among Southeast Asian urban centers*

Miksic (2000:107) argued that “Southeast Asian sites which have been conventionally grouped together in one catch-all category of ‘cities’. . . display such disparate features that they cannot be accounted for on the basis of a single model.” He felt these differences could be usefully described with models of heterogenetic and orthogenetic cities that formed two ends of a spectrum. I briefly described these models in Chapter 1, but they warrant further attention here. Miksic (2000:107) characterized orthogenetic centers as those with low population densities largely composed of nobles, religious and administrative specialists and their staff. The population of an orthogenetic center occupied themselves with the construction and maintenance of monuments and their use in rituals. Additionally, orthogenetic centers were located in areas with substantial surplus agricultural production, and their residents focused on the collection and redistribution of these surpluses. Limited craft production also took place in these centers, but tended to be centered around one product (Miksic 2000:107). The examples Miksic gave of orthogenetic centers, included Angkor Borei and the massive, but low density centers of Angkor and Pagan.

At the other end of the spectrum, heterogenetic centers contained a much higher population size and density, with greater socio-economic diversity and a wide range of economic activities with a particular focus on trade. Due to their residents’ focus on trade, these centers tended to be located at the boundaries between different ecological zones. Interestingly, Miksic characterized these centers as containing few monuments. He identified several heterogenetic centers in twelfth to sixteenth centuries CE insular Southeast Asia, as well as the earlier center of Oc Eo in mainland Southeast Asia. Interestingly, while the early first millennium CE occupation at Oc Eo (Phase I) lacks any brick structures or religious sculpture, after the sixth century CE there evidence of both (Manguin 2004:292; Manguin and Vo 2000:118). Additionally, as I noted in Chapter 4, the center is enclosed by several walls and moats which represent substantial, and even monumental, public works requiring significant coordination (Fig. 4.24). The presence

of these structures at what Miksic saw as a typical heterogenetic center indicates these centers were not entirely without monumental architecture.

Similarly, Stark (2006:419) has noted that the large population of over 20,000 people at the 300 ha center of Angkor Borei<sup>1</sup>, nominally an orthogenetic center, highlights the need for caution in applying Miksic's categories to real-world examples. Miksic (2000:118-119) himself acknowledged that Southeast Asian cities fell along a spectrum between his two models, and also suggested that there were likely other axes of variability awaiting identification. Nonetheless, his model highlights some important characteristics of urban centers and takes an important first step towards breaking down the variability within the category of urban centers in Southeast Asia. In particular, his emphasis on the economic and political implications of a center's eco-geographical setting and its relationships to its hinterland identified important factors in the variability seen among Southeast Asian urban centers. The heuristic categories of orthogenetic and heterogenetic centers highlight two possible sets of strategies for developing and sustaining urban communities in a tropical environment. As examples like Angkor Borei and Oc Eo show, actual urban communities drew on elements of both strategies.

In both central Thailand and the Mekong Delta, urban centers developed in fertile riverine areas with potential for the production of substantial agricultural surpluses (Stark 2006:414). The cultivation of rice in these areas using pre-industrial methods could produce up to 75% percent more calories per ha than wheat (Crosby 1972:175 in Junker 2006:206-207). However, Kealhofer and Grave's (2008) research in north-central Thailand has shown that the creation of a landscape that could produce such surpluses came after millennia of modifications and adaptations, including land clearance and the expansion of canals. As Scarborough (2003a; b:4366-4367) has observed in the creation and maintenance of an "engineered" landscape of paddy and canal systems in Bali, such agricultural systems were capable of supporting a dense population, but accretionally developed over time and in tandem with social practices and political and religious institutions. Many of the first millennium CE centers across mainland Southeast Asia were at the center of a network of smaller sites, monuments

---

<sup>1</sup> Stark's population estimate, however, is based on early urban centers outside Southeast Asia whose social and ecological contexts may have differed from those of Southeast Asian centers.

and agricultural lands within a 3 km radius of the center (Stark 2006:419; Chapter 4). If these centers formed rapidly, as I suggest Kamphaeng Saen did, they ran the risk of outpacing the development of their surrounding agricultural landscape and the social institutions necessary for its maintenance, leaving it susceptible to decline or collapse. Other centers such as U-Thong that developed more slowly may have had more secure agricultural foundations, and the social and religious systems to support them. The presence of Hindu temples associated with the reservoirs at Kok Chang Din outside U-Thong indicates the presence of a significant hydraulic-ritual landscape surrounding the city. Additional research on the level of development of the agricultural landscape around these Dvaravati centers is needed to see if it may have factored into their different settlement histories.

Despite the high potential agricultural productivity of the deltas and river valleys of mainland and insular Southeast Asia, pre-colonial population levels in these regions were far lower than the carrying capacity of the environment (Junker 2006; Reid 1993). Based on historical estimates for population densities collated by Reid (1993), Junker (2006:206, table 11-1) estimated the average pre-colonial population density for the region as 5.5 people per km<sup>2</sup>, a figure that she noted was substantially lower than estimates for similar urbanized societies in the Andes, Valley of Mexico, West Africa, South Asia and East Asia. The reasons for Southeast Asia's low pre-colonial population densities are unclear, and continue to be debated by anthropologist and historians. Possible factors include disease, the high demands placed on female agricultural labor and attitudes toward abortion and breast-feeding (Junker 2006:206; Miksic 1999; Reid 1993). Junker (2006:208-209) emphasized that warfare was probably encouraged by the low population densities rather than caused them. As a result of the relative scarcity of labor relative to arable land, Southeast Asian political elites focused on controlling people over territories. They did so through elite completion and display as well as warfare and raiding (Junker 2006; Tambiah 1976; Wolters 1982). Both of these processes characterized the polycentric interaction among the emerging centers in central Thailand. As I suggested in Chapter 6, in the early first millennium CE in central

Thailand the residents of villages and hamlets that were formerly dispersed across the landscape congregated in and around the more defensible enclosed centers; this shift may be related to an increase in warfare fueled by slave-raiding and competition between local leaders. The construction of earthworks would have provided physical defense and by extension a means of attracting new residents, and their labor, to the elites at a given center.

Even though Southeast Asian population densities were relatively low compared to other regions of the world, the Southeast Asian populations nucleated in and around urban centers leaving a relatively sparsely populated rural landscape. For sixteenth and early seventeenth century CE, Reid (1993:75) estimated that roughly five percent of the people in Southeast Asia lived in urban centers (cited in Junker 2006:212). Junker (2006:212) believed the percentage was even higher for coastal trade centers, which supports Miksic's (2000) characterization of these centers as fitting the heterogenetic model. As I noted above, the heterogenetic centers were located at the boundary between ecological zones. Coastal trade centers developed networks of trade relationships with smaller settlements further inland, but were otherwise economically and politically detached from their hinterland (Junker 2006:213-214). Large amounts of agricultural products to sustain the population of these centers could be transported through maritime shipping networks more easily than over land or along river routes. On the Malay Peninsula, the residents of the coastal center of Melaka relied almost entirely on food products imported from Burma, Thailand, Java and eastern India; considering that the center contained an estimated 20 percent of the region's population, importing sufficient comestibles was a major undertaking (Reid 1993:77 cited and discussed in Junker 2006:214). The independence of these centers from their hinterlands for subsistence meant that they were vulnerable to political and environmental disruptions in other parts of Southeast Asia and beyond. However, these centers were also comparatively insulated from the collapse of local political or agricultural systems, as illustrated by the lack of significant interruption to the economy

or population of the massive center of Trowulan in East Java after the sixteenth century CE decline of the Majapahit kingdom for which it served as the capital (Miksic 2000:115).

While coastal trade centers tended to have fewer monuments than their inland agricultural neighbors, they are far from completely devoid of such structures (Junker 2006; Manguin 2004). Additionally, Junker (2006:218) emphasized that many of the public, as well as residential, structures in insular Southeast Asia may have been built of wood and raised on poles. This lack of stone and brick architecture, combined with the dynamic geology of the coastal locations in which these centers were often located, has made it difficult for archaeologists to locate many historically documented centers, most famously Srivijaya (Bronson 1979; Junker 2006; Miksic 2000). This comparative de-emphasis on monument construction suggests that political authority and influence in these centers relied more heavily on the redistribution and conspicuous consumption of trade goods and portable wealth rather than the control of labor. Coastal trade centers' lack of reliance on their surrounding hinterland for agricultural subsistence made elite control of labor, and the ideological systems that justified it, a less important source of influence and wealth in comparison to the inland centers.

The differences between the trade-focused coastal centers and the more agriculturally-oriented centers highlight the variability in the character and origins of urban centers in Southeast Asia. This variability is influenced by the ecological and geographical differences within the region, and the ways in which urban communities responded to them. Fourteenth century CE agriculturally-based centers with a focus on monumentality that were located in coastal regions where heterogeneous centers would be expected to develop (Miksic 2000:109; Wheatley 1983:426), highlight how geography alone did not determine these differences. Changes in intra and inter-regional trade networks, and the development of social, political and ideological institutions that did or did not encourage the intensification of agricultural production also played an important role in the differences in the character of these centers. Furthermore, the relatively high population densities of the more heterogeneous centers suggests that tropical diseases were not a significant limitation on the ability of other centers in the region to develop high population densities; instead, the social practices and political strategies

related to agricultural production appear to have been a more critical factor in urban population density in Southeast Asia.

Additionally, it is important to reemphasize that the urban centers in Southeast Asia do not neatly fall into these two heuristic types of cities. As noted, Miksic (2000) saw his models of heterogenetic and orthogenetic centers as two ends of a spectrum. The majority of Dvaravati centers fall toward the orthogenetic end of this spectrum. In the cases where survey data are available about the areas surrounding Dvaravati centers (Mudar 1993; Onsuwan Eyre 2006), there is evidence that they were integrated with a hinterland of smaller hamlets and villages within a 3 km radius (Fig. 4.14). Mudar's (1999; see Chapter 4) calculations of site size, catchment and agricultural production indicated that the residents of Dvaravati centers in central Thailand would have relied on products from their hinterland and in some cases subsidiary centers for their subsistence. Additionally, the surveys of the interior of the enclosure at Kamphaeng Saen identified open spaces and a low population density of approximately 68 people per ha, a figure far lower than Miksic's (2000:table 1) estimate of 200 people per ha in the insular heterogenetic centers. All of these characteristics resemble those of orthogenetic centers; however, Nakhon Pathom, and to a lesser degree Sri Thep, appear to fall closer to the middle of the spectrum between orthogenetic and heterogenetic centers. As I noted above, both centers are located at the boundaries between different ecological zones and along trade routes. Both centers also appear to be far larger than other centers in the region. While these traits are common for heterogenetic centers, both Nakhon Pathom and Sri Thep also contain substantial religious monuments. Unfortunately we do not have adequate data about the population density of either center. The limited evidence we have, however, suggests that the elites at these centers pursued a mixture of economic strategies focused on the control of agriculture and trade.

#### *The size of urban centers*

The physical size of the heterogenetic and orthogenetic urban centers of first millennium CE Southeast Asia (Table 7.1.; Stark 2006:Table 1) are within the range for early urban centers from throughout the rest of the world (see Yoffee 2005:43, table 3.1). However, as I noted above, many of the Southeast Asian centers had population densities that are much lower

than some of their counterparts in other regions, and their physical sizes may not be directly comparable. The interior survey at Kamphaeng Saen indicated that only 68% of the 52.5 ha enclosed area was actually used for habitation. The inclusion of large open spaces within the enclosure resembles those documented for centers in Lower Burma, where they were used to cultivate foods in case of a siege (Aung 1967:11; Moore 2007:134). The open spaces at Dvaravati sites, and perhaps other orthogenetic centers in Southeast Asia, probably served a similar function. Central Thailand in the first millennium CE likely experienced frequent warfare and raiding related to both peer-polity interaction (Renfrew 1986), and the need to control labor when it is in short supply relative to fertile agricultural land (Junker 2006). The nucleation of the population at enclosed centers and within their 3 km radius hinterland at the beginning of the Dvaravati period (Onsuwan Eyre 2006:fig 9.6) suggests the formation of buffer zones between competing centers. It also suggests that labor was concentrated in a smaller area to more intensively cultivate the agricultural landscape around these centers. So while the population density and proportion of occupied space at Dvaravati centers was low, it is possible that during periods of conflict farmers in this surrounding hinterland relocated to the center for its defenses and food reserves. These population dynamics are not accounted for in the static orthogenetic model or absolute measures of the physical size of these centers. Since labor was both limited in proportion to land and the primary source of political power, the protection of commoners in the hinterland would have been in the interest of the elite rulers located in the center. These interdependencies between urban and rural communities would have been strengthened through ties based on kinship as well as political and religious ideologies with which both groups identified. The presence of a group of Buddhist and Hindu monuments at a distance of 1.5 to 3.5 km from Dvaravati centers (see Chapter 4) suggests that religious ideologies and specialists likely played a key role in facilitating these socio-political connections, as well as the agricultural intensification and water management in this broader physical and social landscape that surrounded the urban center.

The ultimate expression of the orthogenetic center can be seen in the development of the expansive center of Angkor. At its height between the twelfth and fourteenth centuries CE, it covered more than 1000 km<sup>2</sup> (Evans, et al. 2007:14277; Fletcher, et al. 2004:133). While this absolute size makes it the largest urban center of the pre-industrial world, like the first century CE centers I discussed above, its character differs from early cities in other regions. Fletcher et al. (2004:135) describe it as a “low density dispersed urban complex” that comprised an agrarian population connected through a network of embankments and canals radiating out from a 200 km<sup>2</sup> monumental core. A combination of remote sensing, survey and excavation in the area surrounding the core has identified a system of residential mounds, water tanks and local temples (Evans, et al. 2007; Fletcher, et al. 2004; Fletcher, et al. 2008; Pottier 1999, 2000). The residents in these areas relied on a carefully managed water network for transportation and irrigation. The close correlation between reservoirs and temples in the area around the core, as well as the larger temples and *baray* at the city’s core, indicates that religious ideologies and institutions played an important part in water management. The rapid expansion, over-exploitation and ultimate failure of the irrigation network is one of the factors that may have contributed to the decline and collapse of the city and the Khmer empire (Evans, et al. 2007; Fletcher, et al. 2008).

The massive size, but low population density of Angkor, highlights the global variability among settlements described as “urban”. More importantly it illustrates how difficult, and perhaps ill-advised, the task of identifying an urban center’s boundary can be in some cases. To define Angkor simply as its 200 km<sup>2</sup> core (still impressive in its own right), ignores the community and highly developed infrastructure that surrounded and supported it. By defining this entire system as an “urban complex” Fletcher et al. (2004) recognized the integrated character of this political, religious and social landscape that defied traditional conceptions of rural and urban. While on a far smaller scale and with much less infrastructure, the first millennium CE centers of mainland Southeast Asia pose a similar problem of defining urban boundaries. The walls and moats that enclose most of these centers present tempting boundaries, but as the evidence from centers in



each of these areas has shown (e.g., Halin, Burma; Sri Mahosot, Thailand; Angkor Borei, Cambodia; see also Stark 2006:table1) the residential, monumental and agricultural landscape extended beyond the walls of many of these centers. The dispersed nature of the occupation at these centers exhibited a gradation of density rather than a sharp break between urban and rural areas. The extension of the monumental and ritual landscape into the areas beyond a center's walls provided a physical reminder of the integration of the core and the surrounding agricultural areas. These ideological interconnections, and the political influence that likely accompanied them, were essential for residents in the core to ensure adequate access to agricultural products and for commoners in the surrounding landscape to have access to military defense. While still comparatively low in population density, the extended urban systems of central Thailand formed through the nucleation of smaller villages into a more circumscribed area, as the survey data from central Thailand show (Onsuwan Eyre 2006:fig 9.6). The formation of new relationships based on class and emerging religious ideologies and practices would have still been important among this dispersed population, even if the residents were not living at population densities seen in early cities in other parts of the world.

### *Monumentality and Ideology*

I have already touched on the importance of monuments and ideology in the dispersed urban landscapes of the agriculturally-oriented centers of first and second millennium CE mainland Southeast Asia, but the critical role the construction and use of monuments played in the life of urban communities deserves additional attention. In Chapter 4, I examined how the indigenous tradition of enclosing settlements with moat and walls continued into the first millennium CE with some modifications. These changes included increased formalization and standardization of the enclosure plans around Dvaravati settlements in comparison to those of the Late Iron Age. Additionally, communities also began building brick and laterite monuments and using them to define religious spaces in and around the enclosures. These developments are part of trans-regional development of what Stark (2006:418) described as a "remarkably redundant"

settlement morphology that included a landscape defined by moats, ramparts and brick monuments. As in northeast Thailand, settlement enclosures in Cambodia developed in the Late Prehistoric Period (Moore 1992:43; Stark 2006:420), and recent research in the Red River Delta of Vietnam has revealed that the construction of walls and moats around the settlement of Co Loa began as early as the fourth century BCE (Kim, et al. 2010:1023). These early enclosures provided their communities with defense and better water management and flood control. They also likely had socio-political significance, providing an opportunity for emerging elites to materialize their authority, and for fostering or reinforcing community membership.

The late prehistoric enclosures followed the local topography and hydrology, and had a variable number of concentric walls and moats (Moore 1988, 1989). During the first millennium CE, enclosure construction became more standardized with a single moat with an earthen wall along its interior edge, and in some cases outer edge as well. Interestingly, communities in Burma followed this pattern, but built walls of brick, indicating a much more substantial investment of labor and resources in these structures. Like their prehistoric predecessors, many of the protohistoric enclosures throughout mainland Southeast Asia continued to follow the contours of the local landscape, although their plans exhibited a higher degree of standardization and coordination. In addition to the common formula of a single moat and wall, the protohistoric enclosures were built with straighter walls, moving away from the irregular ovals of the late prehistoric enclosures to polygons, rectangles, and ultimately the highly formalized square enclosures of the Khmer period. Such coordination is seen early at the rectilinear enclosure around Oc Eo, a site of early South Asian influence and long distant commerce. The move toward greater formalization of the enclosure plan indicates an increase in coordination and planning by the elites who organized their construction. The increased standardization among centers also suggests that elites used such planning in competitive emulation with their neighbors; however this standardization was far from perfect, indicative of the lack of a single template imposed by a centralized authority. Since enclosure form was not readily detectable by a viewer

on the round, the formalization of these structures would have primarily conveyed messages about the political or cosmological order of the community to those involved in their construction.

The shift toward building more formalized earthworks roughly corresponded with the spread of Hindu and Buddhist brick and laterite monuments throughout mainland Southeast Asia in the mid-first millennium CE. Like the indigenous tradition of earthwork construction, local leaders and communities adapted these foreign ideologies to fit their changing political and social needs. Such ideologies would have been particularly well-suited to competition and emulation between the leaders of neighboring centers in their attempts to extend hegemony over one another, as well as attract or capture commoner agricultural laborers. Both Buddhist and Hindu ideological systems, as they were manifest in first and second millennium CE South Asia and Southeast Asia, provided means for justifying and normalizing social difference and stratification. Both religious traditions also provided pathways for a ruler to possess semi-divine or divine status and be considered essential for sustaining the world (see Chapter 3; Tambiah 1976; Wolters 1982). Buddhist belief systems provided the means by which a leader could be considered as a *dhammaraja* (King of Righteousness) or *chakravartin* (wheel-turning monarch). There is no shortage of examples from throughout the ancient world of rulers who had special access to the divine or even assumed supernatural status. These Buddhist monarchs spread the Buddhist *dharma* (doctrine or beliefs) through enlightened rule, and war on those who hindered it. In Hindu belief systems, rulers were frequently identified as of the Kshatriya caste, which was associated with military authority. By the fourth century CE, Hindu and Buddhist ideological systems had spread throughout Southeast Asia, as local elites and their communities selectively adopted elements from them and combined them with indigenous beliefs. There were some regional differences within mainland and peninsular Southeast Asia, since Buddhism was more prominent in the west and Hinduism in the east; however, both traditions were present throughout in these regions (Manguin 2004; Ray 1994:154-161; Stark 2006:420). The presence of both traditions even within single communities is illustrated by the

inventory of religious monuments and sculpture at Dvaravati centers such as U-Thong and Sri Thep.

The adaptation of these new political and religious ideologies alone, however, was not enough for legitimizing and effecting changes in social and political relationships. As Baines and Yoffee (2000:14) observed, ideologies need to be manifest in physical terms:

These ideologies must be communicated through tangible vehicles that accompanied and constitute them. The artifactual embodiments of order, therefore, from small objects to cities and landscapes, materialize it (in the sense of De Marrais, Castillo and Earle 1996) in a form that may be given from on high from the deities who participate in it and inform it, but is made present by human labor.

By sponsoring the creation of religious sculpture and stone and brick monuments, emerging rulers and elites throughout Southeast Asia materialized elements of the new Hindu and Buddhist ideologies they had adapted. The construction of these monuments, through commoner labor and elite planning and sponsorship, put in practice the social order these ideologies legitimized. The placement and configuration of monuments in and around settlements enabled the ideological and socio-political concepts they embodied to be mapped on to the physical landscape (A. Smith 2003). In the case of the Hindu and Buddhist monuments of first millennium CE Southeast Asia, they appear to have been used to reinforce pre-existing cosmological concepts that had been materialized in the form of settlement enclosures, but also allowed an extension of these claims into the surrounding landscape through the placement of more far-flung monuments. They also allowed for the transmission of more refined political messages within the urban centers. The more reserved monumental tradition of some heterogenetic centers may be the result of these communities' detachment from their hinterland for subsistence and the related de-emphasis on controlling labor. Alternatively, the greater number and size of monuments at many orthogenetic centers (in excess of 2,200 monuments at the second millennium CE center of Pagan, according to Gutman and Hudson 2004:165) required significant

investments of labor and wealth. The elites in these communities had access to such resources through their control of the products and individuals tied to agricultural production. At the same time, the monuments elites sponsored with these resources materialized the Buddhist and Hindu ideologies that helped legitimize their privileged status and authority. Intra-elite competition and tensions over claims to legitimacy and control of agricultural production could have, in part, been expressed through competing monument construction projects.

Within the earlier polycentric political landscape, as seen in first millennium CE central Thailand, the construction of monuments would have been important in the interactions between competing centers. In particular, a local leader could broadcast his greater political authority and divine sanction through the scale, number and location of the religious monuments he sponsored. In the competition for commoner laborers, monument construction would send a message to neighboring competitors, as well as bind the local labor force to the particular location and leader associated with the monuments they built or helped sponsor. Alternatively, an over-ambitious program of monument construction placed leaders at risk of alienating their intermediate elites and commoner labor base, potentially making them more susceptible to defection and even military defeat.

Regardless of the elites' incentives for sponsoring monument construction, the act of building and venerating these structures provided a common experience and fostered a shared identity among the community members. Building such relationships was critical for maintaining social cohesion and settling disputes among the migrants from a diverse group of villages that formed the new larger communities within the enclosed centers and their system of outlying settlements within 3 km. Shared religious practices and identities allowed groups to form that transcended differences in kinship and former village residence; however, these new ideologies also simultaneously legitimized the growing class stratification within this enlarged group, and in some cases may have transposed existing kinship, occupational or ethnic differences into new religiously sanctioned categories of difference. In all of these cases, the existence of

religious ideologies that were shared to varying degrees within the community provided common frameworks through which formerly unrelated individuals could establish and negotiate their relationships with one another. The materialization of these ideologies through monuments and personal objects, such as the Dvaravati amulets (Fig. 3.12) or medallions (Fig. 3.15), represent tangible expressions and reminders of these ideologies at both the public and personal levels. As these ideologies spread throughout a region they encouraged or prescribed a standardization of religious material culture, such as sculptural and architectural styles, as well as the placement of monuments.

Within a political landscape of elites based in culturally similar centers who competed over a finite pool of commoner laborers, the spread of standardized urban and monumental plans has important implications. While such similarities may have emerged through competitive emulation and concepts inherent to the ideologies themselves, the shared religious material culture and practices would have enabled messages about elite legitimacy and authority to be encoded and interpreted through a common medium. Depending on the particular medium, such messages would have been directed at a leader's own community, neighboring elites, or potential commoners not yet under their control. Commoners and intermediate elites from one center who relocated, after capture in raiding or under their own volition, to a second center with a similar plan would not only find the religious landscape and social order of their new home comprehensible, but could negotiate their place within both. Such standardization therefore facilitated the movement and control of laborers and intermediate elites within a regional landscape of competing centers.

Religious ideology, and its materialization through monument construction, however, could also challenge a leader's authority. Members of the community such as merchants, artisans, elite women, intermediate elites, and religious specialist could derive their own influence through the construction and use of monuments. Religious authorities could legitimize or challenge the authenticity or power of sacred monuments. Through such activities they could provide an ideological endorsement for rulers, legitimize usurpers or support intermediate elites. For example, during the

initial spread and adoption of Buddhism in central Thailand and other parts of Southeast Asia, the monastic order would have inevitably been quite small, but over time its membership grew considerably, resulting in its greater politico-religious influence. The legitimacy and authority that elites materialized through their construction of Buddhist monuments, would have at least partially extended to the monastic organizations affiliated with the consecration and veneration of these monuments. Thus, the process of building monuments provided a pathway for rulers to establish their authority, but simultaneously increased that of their potential challengers within the monastic order. The existence of one or more large and powerful monastic organizations presents an additional variable in the political calculus, since they could form alliances with intermediate elites and guilds. The co-option of ideological authority and monumentality by these groups could present restrictions on the emergence or expansion of regional political authority.

The emphasis I place on ideology in forging community bonds and political authority makes it tempting to attribute the differences between the urban and political trajectories of central Thailand and the Mekong Delta to the prevalence of Buddhist versus Hindu ideological systems in each of these respective regions; however such monocausal explanations inevitably fail to account for the complexities of social change, and the collapse of the Dvaravati civilization and the rise of the Khmer empire are no exceptions. Additionally, our data are as of yet too limited to identify the factors that led to the decline of the Dvaravati civilization, or limited its expansion of political authority and control. I thus conclude this dissertation by examining a few of the many needed areas of future research that will help clarify our understanding of the Dvaravati civilization and the broader socio-political changes in first millennium CE Southeast Asia.

### **Directions for Future Research**

I have repeatedly noted in the preceding chapters that many aspects of life in first millennium central Thailand remain poorly understood and will benefit from future research. Even though my field investigations at Kamphaeng Saen were limited in scale, they demonstrated the ability of survey and excavation to identify significant

spatial patterning in the use of space at Dvaravati enclosed centers. In the future, the excavation of larger horizontal units will allow us to better understand the organization of space and the activities within the residential areas we identified. Such exposures will increase the probability of identifying alignments of postholes or stone or brick foundations from domestic or administrative structures. Locating such structures would enable us to evaluate differences between the economic activities of individual households, as well as the degree of coordination between public and private spaces across the settlement. Such patterns are important for looking at the socio-economic composition of neighborhoods and their relationships to community-level political authority.

Additionally, more extensive investigation of the area outside the enclosure at Kamphaeng Saen is needed to understand the broader agricultural, sacred and socio-political landscapes of the center. Test excavations around the brick monuments outside the enclosure would be useful for evaluating the presence of additional structures, potentially identifiable as part of a monastic compound, in these areas. Comparing differences in the consumption patterns in these areas with those found inside the site would be useful for understanding the activities that took place around these monuments, and the socio-economic relationship between the monastic community and the community at-large. Surveys of the wider hinterland of Kamphaeng Saen, combined with studies of local environmental change like those conducted by Kealhofer and Grave (2008), are also a priority. The distribution of hamlets and villages before, during and after the occupation at Kamphaeng Saen would provide valuable data for understanding the origins of the community at Kamphaeng Saen, and if its abandonment was caused by a migration to Nakhon Pathom or back to the countryside. Ecological changes in the broader hinterland associated with agricultural intensification and irrigation works, or the lack thereof, would also be valuable for understanding the economic foundations of the community and its articulation with its hinterland. Over-exploitation or under-development of the agricultural landscape surrounding Kamphaeng Saen could reveal an



inadequately developed or compromised subsistence base that may have contributed to its decline.

The Kamphaeng Saen Archaeology Project contributed to a growing body of studies on the organization of monumental *and* domestic spaces and the communities who created them in protohistoric central and northeastern Thailand (Indrawooth 1983, 2001; Khunsong 2009; Lertcharnrit 2006; Lertrit 2004; Murphy and Pongkasetkan 2010; Pisnupong 1992, 1993). However, to adequately address many of the questions I have raised, additional research at these and additional Dvaravati centers is needed to facilitate comparative analyses. In particular, to what degree did the standardization of enclosure plans and monument locations extend to the layout of open and residential space within these centers? Also, additional investigation of the timing of the construction of different types of enclosure plans will enable us to evaluate when enclosures became more formally planned, and how this move may have been related to emulation or competition between the elites at these centers. The timing of the construction of earthworks and other monuments will also enable us to evaluate differences between those communities that developed over time (e.g., Chansen), versus those that formed much more rapidly (e.g., Kamphaeng Saen).

One site in particular where additional research could greatly increase our understanding of regional political and urban dynamics is Nakhon Pathom. While there has been substantial research on the monuments and sculpture from Nakhon Pathom (see Chapter 4), the research by Indrawooth (1983) and Khunsong (2009) on non-monumental spaces at the site illustrated the significant impact such studies can have to our understanding of the history of this center and its relationship to its neighbors. Additional field studies sampling spaces throughout the enclosure interior and its surrounding area would make significant contribution to our understanding of the chronology of the settlements growth and decline, its population density, and spatial differences in consumption and production activities at the site. Due to the development of the modern city of Nakhon Pathom over the remains of the ancient city, these investigations face the same challenges posed by the archaeology of other

ancient cities that continue to exist today (e.g., Rome, London, Mexico City); however, as Indrawoath (1983) and Khunsong's (2009) projects demonstrated, such research at Nakhon Pathom is possible.

Finally, research on the Dvaravati civilization has generally focused on its origins and character, with far less attention paid to its transformation and decline. The expansion of the Khmer empire into central and northeastern Thailand are generally thought to have contributed to this process, but there is some evidence that many Dvaravati centers and the networks between them may have already begun to decline prior to his expansion. Some centers (e.g., Lopburi, Sri Thep, Dong Sri Mahosot) clearly continued to exist into the Khmer period, with evidence of Khmer material culture and religious monuments; however, it is unclear if the Dvaravati residents in these centers culturally assimilated with the Khmer, continued to exist as their own distinct group within these urban communities, or left the center and returned to the countryside. Differences in religious, class or linguistic identities among the Dvaravati population may have determined which of these strategies individual groups pursued. Archaeological investigations of these relationships at Dvaravati centers during the tenth and eleventh century CE would make significant contributions to our understanding of the factors that led to the decline of the Dvaravati culture.

## **Conclusion**

The development of urban communities in central Thailand in the first millennium CE was part of a broader socio-political transformation occurring throughout Southeast Asia at that time. Indigenous elites and their constituent communities took advantage of access to exotic trade goods and ideologies from South Asia, and adapted them to meet their own socio-political needs. The prehistoric archaeology of the region shows that Southeast Asian urbanism and complex polities were created after millennia of indigenous socio-political developments and increasingly extensive networks of interactions both within and beyond the region. For much of this time, however, Southeast Asians lived in small communities, where social and political relationships were governed by kinship. A few precocious developments of large communities in

Late Iron Age northeastern Thailand, and even earlier in northern Vietnam (e.g., Co Loa) anticipated the social changes of the early first millennium CE. However, the development of a more widespread urban tradition with substantially larger centers accompanied the adaptation of South Asian ideologies. Urbanization and South Asian ideologies appear to have recursively encouraged one another. The new ideologies provided elites with a powerful means of proclaiming a divine sanction and materializing their authority through the construction of monuments. Within the urban environment, the construction of religious monuments and the ritual practices associated with them enabled diverse communities to form shared identities with one another in the absence of kinship connections; however, these same ideologies and practices also justified growing social and political stratification within the community. While the organization and history of Kamphaeng Saen displayed some characteristics that were unique even among Dvaravati centers, the study of this particular community highlighted some of the challenges faced by urban communities everywhere, and the solutions their members developed to overcome them.

## APPENDIX A

### **Absolute Dates from Dvaravati Settlements**

This appendix presents absolute dates obtained from radiocarbon (Table A.1) and thermoluminescence (Table A.2) dating of samples collected from settlements with Dvaravati period occupation. For the sake of comparison and analysis of settlement histories, I have included all dates (i.e. not just those assigned to the Dvaravati period) from these sites. In several cases the culture or period assigned to a given date range varied between excavators. I have listed the cultural affiliation given by the excavators, even though in some cases I do not agree with their assessments. The recent debate (Barram 2004; Barram and Glover 2008; Khunsong et al. 2011) surrounding the starting date of the Dvaravati period focuses on the interpretation of material from the 1<sup>st</sup> to 5<sup>th</sup> centuries CE from U-Thong, and to a lesser degree Chansen, Nakhon Pathom and Kamphaeng Saen. As a result the cultural affiliations assigned to dates within this range tend to be the most variable between excavators.

I have listed the un-calibrated radiocarbon dates in chronological order by site. For each of the radiocarbon dates I used the OxCal (v. 4.1) software to calculate the calibrated date ranges based on the IntCal09 calibration curve. I have also listed the thermoluminescence dates in chronological order by site, and then calculated their BCE/CE range using the margin of error in order to facilitate comparison and ease of reference.

For more detailed information about the context of the samples from Kamphaeng Saen see Table 6.5.

**Table A.1.** Radiocarbon dates from Dvaravati settlements

Site	Sample ID	Type	Un-calibrated Date BP	+/-	2 $\sigma$ (95.4%) Calibration BCE/CE	Cultural Affiliation designated by Excavator	Source
Chansen	P-1543	conventional	2145	36	357 - 54 BCE	Early Funan (Phase III)*	Bronson 1976
Chansen	P-1512	conventional	1890	41	27 - 231 CE	Late Metal Age (Phase II)	Bronson 1976
Chansen	P-1508	conventional	1830	47	73 - 325 CE	Late Metal Age (Phase II)	Bronson 1976
Chansen	I-4370	conventional	1644	85	215 - 603 CE	Late Metal Age (Phase II)	Bronson 1976
Chansen	P-1541	conventional	1595	52	343 - 580 CE	Early Funan (Phase III)	Bronson 1976
Chansen	P-1507	conventional	1580	50	385 - 597 CE	Early Funan (Phase III?)	Bronson 1976
Chansen	P-1540	conventional	1573	35	414 - 562 CE	Early Funan (Phase III)	Bronson 1976
Chansen	P-1538	conventional	1540	47	417 - 611 CE	Early Funan (Phase III)	Bronson 1976
Chansen	P-1509	conventional	1503	43	433 - 643 CE	Early Funan (Phase III)	Bronson 1976
Chansen	P-1539	conventional	1491	47	433 - 650 CE	Early Funan (Phase III)	Bronson 1976
Chansen	I-4368	conventional	1416	84	432 - 773 CE	Late Funan (Phase IV)	Bronson 1976
Chansen	I-4369	conventional	948	78	903 - 1255 CE	Dvaravati to Lopburi (Phase V-VI)	Bronson 1976
Dong Sri Mahasot	OAEP-827	conventional	2210	80	402 BCE - 54 BCE	Prehistoric/Late Prehistoric	Pisnupong 1992
Dong Sri Mahasot	OAEP-826	conventional	1960	200	405 BCE - 535 CE	Prehistoric/Dvaravati	Pisnupong 1992
Dong Sri Mahasot	OAEP-825	conventional	1840	180	351 BCE - 575 CE	Late Prehistoric/Dvaravati	Pisnupong 1992
Dong Sri Mahasot	OAEP-824	conventional	1780	150	101 BCE - 585 CE	Late Prehistoric/Dvaravati	Pisnupong 1992
Dong Sri Mahasot	OAEP-823	conventional	1280	190	386 - 1159 CE	Late Prehistoric/Dvaravati/Khmer	Pisnupong 1992
Kamphaeng Saen	Beta-293467	AMS	8680	50	7939 - 7587 BCE	Natural	Gallon 2013
Kamphaeng Saen	Beta-293473	AMS	1590	30	411 - 543 CE	Early Dvaravati	Gallon 2013
Kamphaeng Saen	Beta-293469	AMS	1570	30	420 - 557 CE	Early Dvaravati	Gallon 2013
Kamphaeng Saen	Beta-293471	AMS	1550	30	426 - 578 CE	Early Dvaravati	Gallon 2013
Kamphaeng Saen	Beta-293474	AMS	1490	30	467 - 645 CE	Early Dvaravati	Gallon 2013
Kamphaeng Saen	Beta-293468	AMS	1460	30	553 - 648 CE	Early Dvaravati	Gallon 2013

(continued)

**Table A.1.** continued

Site	Sample ID	Type	Un-calibrated Date BP	+/-	2 $\sigma$ (95.4%) Calibration BCE/CE	Cultural Affiliation designated by Excavator	Source
Kamphaeng Saen	Beta-293472	AMS	1400	30	597 -670 CE	Dvaravati	Gallon 2013
Kamphaeng Saen	Beta-293470	AMS	1210	30	694 - 892 CE	Dvaravati	Gallon 2013
Muang Fa Daed	OAEP-1382	conventional	3530	70	2113 - 1687 BCE	Prehistoric/natural?	Indrawooth 2001
Muang Fa Daed	OAEP-1383	conventional	2240	60	404 - 166 BCE	Late Prehistoric	Indrawooth 2001
Muang Fa Daed	OAEP-1384	conventional	2210	60	396 - 112 BCE	Late Prehistoric	Indrawooth 2001
Muang Fa Daed	OAEP-1379	conventional	2160	60	375-53 BCE	Late Prehistoric	Indrawooth 2001
Muang Fa Daed	OAEP-1378	conventional	2070	60	350 BCE - 64 CE	Late Prehistoric	Indrawooth 2001
Muang Fa Daed	OAEP-1381	conventional	2050	60	342 BCE - 74 CE	Late Prehistoric	Indrawooth 2001
Muang Fa Daed	OAEP-1377	conventional	2010	60	174 BCE - 124 CE	Late Prehistoric	Indrawooth 2001
Muang Fa Daed	OAEP-1380	conventional	1770	60	93 - 407 CE	Late Prehistoric/Protohistoric	Indrawooth 2001
Nakhon Pathom		conventional	822*	28	1165 - 1265 CE	Dvaravati	Indrawooth 1983
Promptin Tai	OAEP-2166	conventional	3110	230	1912 - 819 BCE	Iron Age	Lertcharnrit 2006
Promptin Tai	OAEP-2163	conventional	2860	228	1614 - 418 BCE	Iron Age	Lertcharnrit 2006
Promptin Tai	OAEP-2169	conventional	2430	260	1211 BCE - 73 CE	Late Bronze Age	Lertcharnrit 2006
Promptin Tai	OAEP-2165	conventional	2220	260	903 BCE - 335 CE	Iron Age	Lertcharnrit 2006
Promptin Tai	OAEP-2167	conventional	2170	260	828 BCE - 388 CE	Iron Age	Lertcharnrit 2006
Promptin Tai	OAEP-2168	conventional	1810	220	357 BCE - 645 CE	Iron Age	Lertcharnrit 2006
Promptin Tai		conventional	1540	170	86 - 860 CE		Srisuchart 1998 in Lertrit 2001
Sab Champa	OAEP	conventional	1750	240	363 BCE - 688 CE	Bronze Age***	Lertrit 2004
Sab Champa	SNU02-695	AMS	1510	40	433 - 637 CE	Late Iron Age	Lertrit 2004
Sab Champa	OAEP-1965	conventional	1100	190	601 - 1272 CE	Dvaravati	Lertrit 2004
Sab Champa	OAEP	conventional	1070	230	535 - 1390 CE	Bronze Age***	Lertrit 2004

(continued)

**Table A.1.** continued

Site	Sample ID	Type	Un-calibrated Date BP	+/-	2 $\sigma$ (95.4%) Calibration BCE/CE	Cultural Affiliation designated by Excavator	Source
U-Thong	ANU-11601	conventional	2570	70	842 - 416 BCE	Pre-Dvaravati	Barram 2003
U-Thong		conventional	2300	310	1191 BCE - 347 CE		Natapintu 1999 in Lertrit 2001
U-Thong	ANU-1185	conventional	2160	110	411 BCE - 76 CE	Pre-Dvaravati	Loofs 1979
U-Thong	ANU-11361	conventional	1900	80	91 BCE - 331 CE	Proto-Dvaravati	Barram 2003
U-Thong	ANU-1184	conventional	1880	80	46 BCE - 337 CE	Pre-Dvaravati	Loofs 1979
U-Thong	ANU-11602	conventional	1800	60	81 - 382 CE	Proto-Dvaravati	Barram 2003
U-Thong		conventional	1790	220	356 BCE - 654 CE		Natapintu 1999 in Lertrit 2001
U-Thong	ANU-1186	conventional	1790	70	78 - 397 CE	Pre-Dvaravati	Loofs 1979
U-Thong	ANU-11363	conventional	1630	60	257 - 560 CE	Proto-Dvaravati/Dvaravati	Barram 2003
U-Thong	ANU-1187	conventional	1600	100	239 - 645 CE	Pre-Dvaravati/Dvaravati	Loofs 1979
U-Thong	ANU-1188	conventional	1590	100	246 - 645 CE	Pre-Dvaravati/Dvaravati	Loofs 1979
U-Thong		conventional	1550	220	20 BCE - 964 CE		Natapintu 1999 in Lertrit 2001
U-Thong	ANU-11362	conventional	1480	60	433 - 656 CE	Dvaravati	Barram 2003

\*Bronson recognized that the date from this sample was inconsistent with the other dates from the Phase III contexts, and believed it may have been contaminated.

\*\*Based on Indrawoath's published date of 1100 - 1156 CE (unclear if calibrated)

\*\*\*Lertrit recognized that these dates are late for the Bronze Age and suggested possible sample contamination.

**Table A.2.** Thermoluminescence dates from Dvaravati settlements

Site	Sample ID	Material	TL Date BP	+/-	Date BCE/CE	Cultural Affiliation Identified by Excavator	Source
Chansen	P-280	pot sherd	3290	200	1540-1140 BCE	Late Metal Age (Phase I)	Bronson 1976
Chansen	P-281	pot sherd	2600	200	850 - 45 BCE	Late Metal Age (Phase I)	Bronson 1976
Chansen	P-283	pot sherd	1650	120	180 - 420 CE	Dvaravati to Lopburi (Phase V-VI)	Bronson 1976
Chansen	P-284	pot sherd	740	100	1110 - 1310 CE	Lopburi (Phase VI)	Bronson 1976
Chansen	P-285	pot sherd	610	100	1240 - 1440 CE	Lopburi (Phase VI)	Bronson 1976
Nakhon Pathom	A_0004	shell	2772	222	1044 - 600 BCE	natural?	Khunsong et al. 2011
Nakhon Pathom	A_0243	pot sherd	1842	120	12 BCE - 228 CE	Pre- or Proto-Dvaravati	Khunsong et al. 2011
Nakhon Pathom	A_0241	fired clay	1552	93	305 - 491 CE	Pre- or Proto-Dvaravati	Khunsong et al. 2011
Nakhon Pathom	A_0240	carinated pot	1543	77	330 - 484 CE	Pre- or Proto-Dvaravati	Khunsong et al. 2011
Nakhon Pathom	A_0242	brick	1477	305	168 - 778 CE	Pre- or Proto-Dvaravati	Khunsong et al. 2011
Nakhon Pathom	A_0002	brick	1410	112	428 - 652 CE	Early Dvaravati	Khunsong et al. 2011
Nakhon Pathom	A_0003	brick	1220	97	633 - 827 CE	Early Dvaravati	Khunsong et al. 2011
U-Thong		pot sherd	1550		400 CE	Pre-Dvaravati	Loofs 1979
U-Thong		pot sherd	1360		590 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	1290		660 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	1240		710 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	1240		710 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	1150		800 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	1090		860 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	990		960 CE	Dvaravati	Loofs 1979
U-Thong		pot sherd	970		980 CE	Dvaravati	Loofs 1979



## APPENDIX B

### **A Gazetteer and Atlas of Enclosed Dvaravati Settlements**

In this appendix I have collated images, maps and other relevant information documenting the enclosed settlements of central Thailand with known Dvaravati period occupation. I have also included some of the prominent Dvaravati period enclosed settlements from northeastern Thailand for comparative purposes, but the sheer number of moated sites in this region and the lack of detail on Dvaravati period occupation at many of them, has left a full consideration of these sites beyond the scope of this study (see Murphy 2010:fig. 4.5 for a regional map of the locations of these sites in northeastern Thailand). This appendix provides a series of tables presenting data on site location, size, earthwork enclosures and religious monuments, followed by satellite images and maps of selected sites. In both sections the sites are organized by river drainage.

The data about moat plan and size collated in the tables comes from the analysis of SPOT (2.5 m resolution) and, more rarely, Landsat (15 m resolution) satellite images provided by the software Google Earth. The moated area measurements were collected by using the polygon measurement tool to measure along the interior edge of the moat in these images. Continued occupation of these sites and occasional dredging of the moat features has altered the course and banks of some moats. I have noted the cases where these modifications have affected measurements to a high degree. I collected information about ramparts and monuments through a review of English and Thai literature. I also made informal visits to twenty-three of the sites in order to gather more details (e.g., exact locations) on some of the features listed in these publications, as well as to document the presence of ramparts and surface monuments at sites not described in the literature. Table B.1 includes a column indicating which sites I visited.

The maps are also based on a combination of information from published maps, satellite images and site visits. The ramparts at many sites have suffered extensive destruction from recent modern agriculture practices, and in several cases ramparts that are reported from the early to mid-20<sup>th</sup> century are no longer visible today. Also, ramparts are often difficult to consistently document on satellite images. For these reasons, I have not included the ramparts on the maps.

**Table B.1.1.** Moated Dvaravati settlements

River Drainage	Figure	Name	Name (Thai)	Amphoe (District)	Changwat (Province)	Coordinates (UTM 47N)	Visted in 2008
MaeKlong	B.2	Ku Bua	คูบัว	Muang	Ratchaburi	E 99.834847° N 13.483222°	Yes
	B.4	Kamphaeng Saen	กำแพงแสน	Kampaeng Saen	Nakhon Pathom	E 99.962358° N 13.990328°	Yes
Tha Chin	B.5	Nakhon Pathom	นครปฐม	Muang	Nakhon Pathom	E 100.096802° N 13.812974°	Yes
	B.6	U-Thong	อุทัยทอง	U Thong	Suphanburi	E 99.888239° N 14.370910°	Yes
	B.7	Dong Khon	ดงคอน	Sankhaburi	Chainat	E 100.152781° N 15.017578°	Yes
Chao Phraya	B.8	Ku Muang (Ang Thong)	คูเมือง	Sawaengha	Ang Thong	E 100.311039° N 14.786138°	Yes
	B.9	Ku Muang (Duembang Nangbuat)	คูเมือง	Duembang Nangbuat	Suphanburi	E 100.213368° N 14.852079°	Yes
	B.10	Ku Muang (Inburi)	คูเมือง	Inburi	Singburi	E 100.278693° N 14.994451°	Yes
	B.11	Muang Huai Duk	เมืองห้วยดุก	Takhli	Nakhon Sawan	E 100.264159° N 15.439096°	Yes
	B.12	Bung Khok Chang	บึงคอกช้าง	Sawang Arom	Uthai Thani	E 99.710916° N 15.633040°	No
Upper Chao Phraya	B.13	Don Kha	ดอนคา	Tha Tako	Nakhon Sawan	E 100.500473° N 15.639689°	No
	B.14	Muang Bon (Kok Mai Den)	เมืองบน	Phayuha Khiri	Nakhon Sawan	E 100.143442° N 15.419060°	Yes
	B.15	Muang Karung	เมืองกาจุง	Ban Rai	Uthai Thani	E 99.699643° N 15.178711°	Yes

(continued)

**Table B.1.** continued

River Drainage	Figure	Name	Name (Thai)	Amphoe (District)	Changwat (Province)	Coordinates (UTM 47N)	Visted in 2008
Upper Chao Phraya	B.16	Thap Chumphon	ทัพชุมพล	Muang Nakhon Sawan	Nakhon Sawan	E 100.023714° N 15.704654°	No
	B.17	U-Thapao	อุตะเถา	Manorom	Chainat	E 100.172637° N 15.275873°	Yes
Ping	B.18	Dong Mae Nang Muang	ดงแม่นางเมือง	Banphot Phisai	Nakhon Sawan	E 100.007943° N 16.015523°	Yes
Lopburi	B.19	Chansen	จันเสน	Takhli	Nakhon Sawan	E 100.452249° N 15.116353°	Yes
	B.20	Dong Marum	ดงมะรุม	Dong Marum	Lopburi	E 100.855048° N 15.131362°	Yes
	B.21	Khiitkhin	คีตชิน	Ban Mo	Saraburi	E 100.735496° N 14.620666°	Yes
	B.22	Lopburi	ลพบุรี	Muang	Lopburi	E 100.615379° N 14.800660°	Yes
	B.23	Promtin Tai	พระทิมหินใต้	Nong Sai Kao	Lopburi	E 100.617736° N 15.001029°	Yes
	B.24	Dong Lakhon	ดงละคร	Ongkharak	Nakhon Nayok	E 101.166690° N 14.153458°	No
	B.25	Dong Sri Mahosot	ศรีมหาเสถ	Si Mahosot	Prachinburi	E 101.414033° N 13.894580°	Yes
	B.26	Muang Phra Rot	เมืองพระรถ	Panat Nikhom	Chonburi	E 101.167295° N 13.465382°	No
Pasak	B.27	Sab Champa	ชัยจำปาศ	Sab Champa	Lopburi	E 101.240005° N 15.052407°	No
	B.28	Sri Thep	ศรีเทพ	Si Thep	Phetchabun	E 101.144000° N 15.467000°	Yes

**Table B.1.1.** continued

River Drainage	Figure	Name	Name (Thai)	Amphoe (District)	Changwat (Province)	Coordinates (UTM 47N)	Visted in 2008
Mun	B.29	Muang Sema	เมืองเสมา	Sung Noen	Sung Noen	E 101.798266° N 14.921792°	Yes
	B.30	Na Dune	นาดูน	Na Dune	Maha Sarakham	E 103.274059° N 15.720454°	No
	B.31	Putthai Song	พุทไธสง	Putthai Song	Buriram	E 103.002208° N 15.540843°	No
Chi	B.32	Chaiyaphum <sup>1</sup>	ชัยภูมิ	Muang	Chaiyaphum	E 102.031539° N 15.806359°	No
	B.33	Kantarawichai	กันทรวิชัย	Kantarawichai	Maha Sarakham	E 103.301480° N 16.310934°	No
	B.34	Muang Fa Daed Song Yang	เมืองฟ้าแดดสงยาง	Kamalasai	Kalasin	E 103.518882° N 16.314994°	No

<sup>1</sup> Unable to identify moated settlement on satellite imagery. Coordinates are for modern settlement of the same name.

**Table B.2.** Enclosure size and plan of moated Dvaravati settlements

Figure	Name	Total Enclosed Area (ha)	Extension or Outer Enclosure			Inner Enclosure		
			Area (ha)	Plan	Rampart	Area (ha)	Plan	Rampart
B.12	Bung Khok Chang	122.6	122.6	oval	Yes	17.6	circular	Yes
B.32	Chaiyaphum						destroyed?	
B.19	Chansen	43.8				43.8	polygonal	None
B.13	Don Kha	70.1				70.1	irregular	
B.7	Dong Khon <sup>1</sup>	27.5				27.5	polygonal	
B.24	Dong Lakhon	26.5				26.5	irregular	Yes
B.18	Dong Mae Nang Muang	53.6	20	semi-rectangular		31.1	polygonal	Yes
B.20	Dong Marum	39.0				39.0	rectangular	Yes
B.25	Dong Sri Mahosot	98.0				98.0	semi-rectangular	Yes
B.4	Kamphaeng Saen	52.5				52.5	polygonal	Yes
B.33	Kantarawichai	195.2	195.2	semi-rectangular		70.9	irregular	
B.21	Khiitkhin	25.1	25	square	Yes	18.6	square	None
B.2	Ku Bua <sup>2</sup>	171.0				171.0	rectangular	Yes
B.8	Ku Muang (Ang Thong)	11.9				11.9	square	None
B.9	Ku Muang (Duembang Nangbuat)	17.2				17.2	square	None
B.10	Ku Muang (Inburi)	46.5				46.5	polygonal	Yes
B.22	Lopburi <sup>3</sup>	129.2				~129.15	irregular?	
B.14	Muang Bon (Kok Mai Den)	60.5	~60.5	irregular	Yes	7.4	circular	Yes
B.34	Muang Fa Daed Song Yang	154.6	154.62	semi-rectangular		21.07 + ~19.67	irregular	Yes
B.11	Muang Huai Duk	18.9				18.9	rectangular	Yes
B.15	Muang Karung	13.4				13.4	square	Yes

(continued)

**Table B.2.** continued

Figure	Name	Total Enclosed Area (ha)	Extension or Outer Enclosure			Inner Enclosure		
			Area (ha)	Plan	Rampart	Area (ha)	Plan	Rampart
B.26	Muang Phra Rot	93.4				93.4	semi-rectangular	Yes
B.29	Muang Sema <sup>4</sup>	395.3	~152.03 + 187.68	irregular	Yes	38.5	irregular	Yes
B.30	Na Dune <sup>5</sup>	311.0	311	irregular		172.6	irregular	
B.5	Nakhon Pathom	659.4				659.4	semi-rectangular	Yes
B.23	Promptin Tai <sup>6</sup>	78.5				78.5*	oval*	
B.31	Putthai Song	162.3	162	irregular		38.0	irregular	
B.27	Sab Champa	61.3				61.3	irregular	Yes
B.28	Sri Thep	469.2	271.6	semi-rectangular	Yes	159.2	irregular	Yes
B.16	Thap Chumphon	4.3		unclear		4.3	circular	Yes
B.17	U-Thapao	54.7				54.7	irregular	Yes
B.6	U-Thong	96.3				96.3	Irregular	Yes

<sup>1</sup>Moat at Dong Khon has been destroyed and is not visible on satellite imagery. The area is a rough estimate based on the reconstructed moat form seen in Fig. B.7.

<sup>2</sup>Extensive modern modification of moat at Ku Bua makes measurement of its area approx.

<sup>3</sup>Only a few sections of the moat at Lopburi are visible making measurement of its area highly approx.

<sup>4</sup>Total area includes the outer most enclosure even though the age of this earthwork is unclear. There is also a possible Khmer period enclosure (13.87 ha) inside first moat extension

<sup>5</sup>Moat perimeter is unclear

<sup>6</sup>The enclosure plan and size for Promptin Tai are based on Vanasin and Supajanya (1981). The moat and rampart have since been destroyed and could not be assessed in satellite images.

**Table B.3.** Number and location of monuments at moated Dvaravati settlements

Name	Brick and Laterite Monuments			Dharma chakra
	Buddhist	Hindu	Unclear Affiliation	
Bung Khok Chang			Interior (1)	
Chaiyaphum				
Chansen			Interior (1) & Exterior (1)	
Don Kha				
Dong Khon	Exterior (1)		Interior & Exterior	
Dong Lakhon	Interior & Exterior			
Dong Mae Nang Muang	Interior (1) & Exterior (2)			
Dong Marum			Interior (1)	
Dong Sri Mahosot	Exterior	Interior		Yes (1)
Kamphaeng Saen	Exterior (3)			Exterior (1)
Kantarawichai	Yes			
Khiitkhin	Interior*			
Ku Bua	Int (11) & Exterior(33)			Yes (1)
Ku Muang (Ang Thong)				
Ku Muang (Duembang Nangbuat)				
Ku Muang (Inburi)			Exterior ('many')**	Yes (1)
Lopburi	Interior (1)			Yes (1)
Muang Bon (Kok Mai Den)	Exterior (17)			
Muang Fa Daed Song Yang	Interior (7) & Exterior (7)			
Muang Huai Duk				
Muang Karung	Exterior(1)			
Muang Phra Rot			Exterior (1)	
Muang Sema	Interior (7) & Exterior (3)			Exterior (1)
Na Dune				
Nakhon Pathom	Interior (3) & Exterior (5)			Yes (>18)
Promptin Tai				
Putthai Song				
Sab Champa			Interior (3)	
Sri Thep	Interior & Exterior	Yes		Yes (~5)
Thap Chumphon	Yes (1)			
U-Thapao	Exterior (1)			Exterior (1)
U-Thong	Interior (4) & Exterior (13)	Exterior		Exterior (2)

(n) = number of monuments or structures (i.e., stupas, *viharas*, *ubosots* and temples)

\*stone Buddha recovered inside enclosure

\*\*Higham and Thorasat (1998:183) stated that the Silpakorn University research team documented "many brick temple foundations cluster(ed) round the moated area, but I have not obtained the original field report (Silpakorn 1980) to determine the exact number or location.



**Table B.4.** Unmoated Dvaravati settlements discussed in the text

River System	Figure	Name	Name (Thai)	Amphoe (District)	Changwat (Province)
Phetchaburi	B.1	Thung Setthi	ทุ่งเศรษฐี	Cha Am	Phetchaburi
Maeklong	B.3	Pong Tuk	พงตึก	Tha Maka	Kanchanaburi

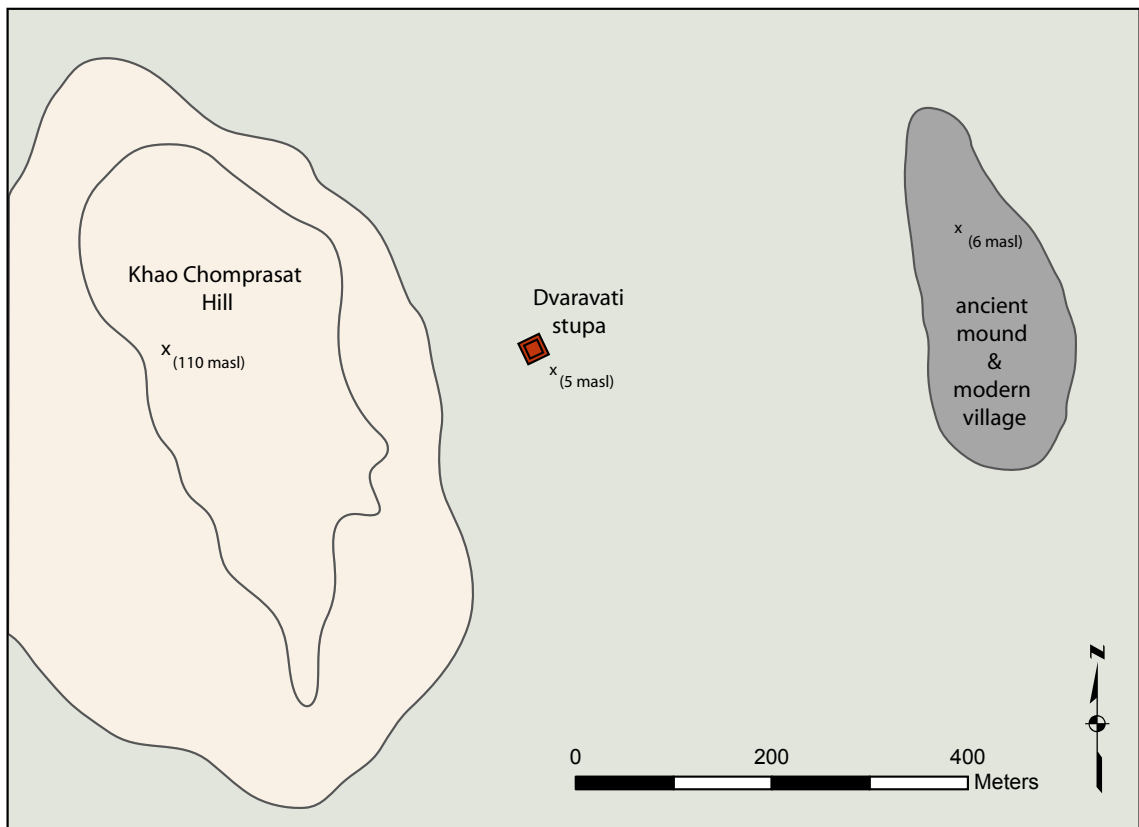
**Table B.5.** Significant Dvaravati settlements included in Indrawooth's (1999: Map 7) inventory that could not be located or assessed in satellite imagery

River System	Name	Name (Thai)	Amphoe (District)	Changwat (Province)
Tha Chin	Nong Sam Rong	หนองสำโรง	Don Chedi	Suphanburi
Chao Phraya	Sankhaburi	สรรคบุรี	Sankhaburi	Chainat
	Aphaisali	อไพศาลี	Phaisali	Nakhon Sawan
Upper Chao Phraya	Ban Dai	บ้านด้าย	Muang	Uthai Thani
	Ban Mai Phaisali	บ้านใหม่ไพศาลี	Khok Samrong	Lopburi
	Phra Kam	พระคํา	Phaisali	Nakhon Sawan
Lopburi	Dong Muang	ดงเมือง	Nong Saeng	Saraburi
	Wang Phai	วังไผ่	Ban Mi	Lopburi
Pasak	Chaibadal	ชัยบาดาล	Chai Badan	Lopburi

## Petchaburi Drainage Sites



**Figure B.1a.** Thung Setthi (image source: © 2013 Google Earth & © 2013 Digital Globe)

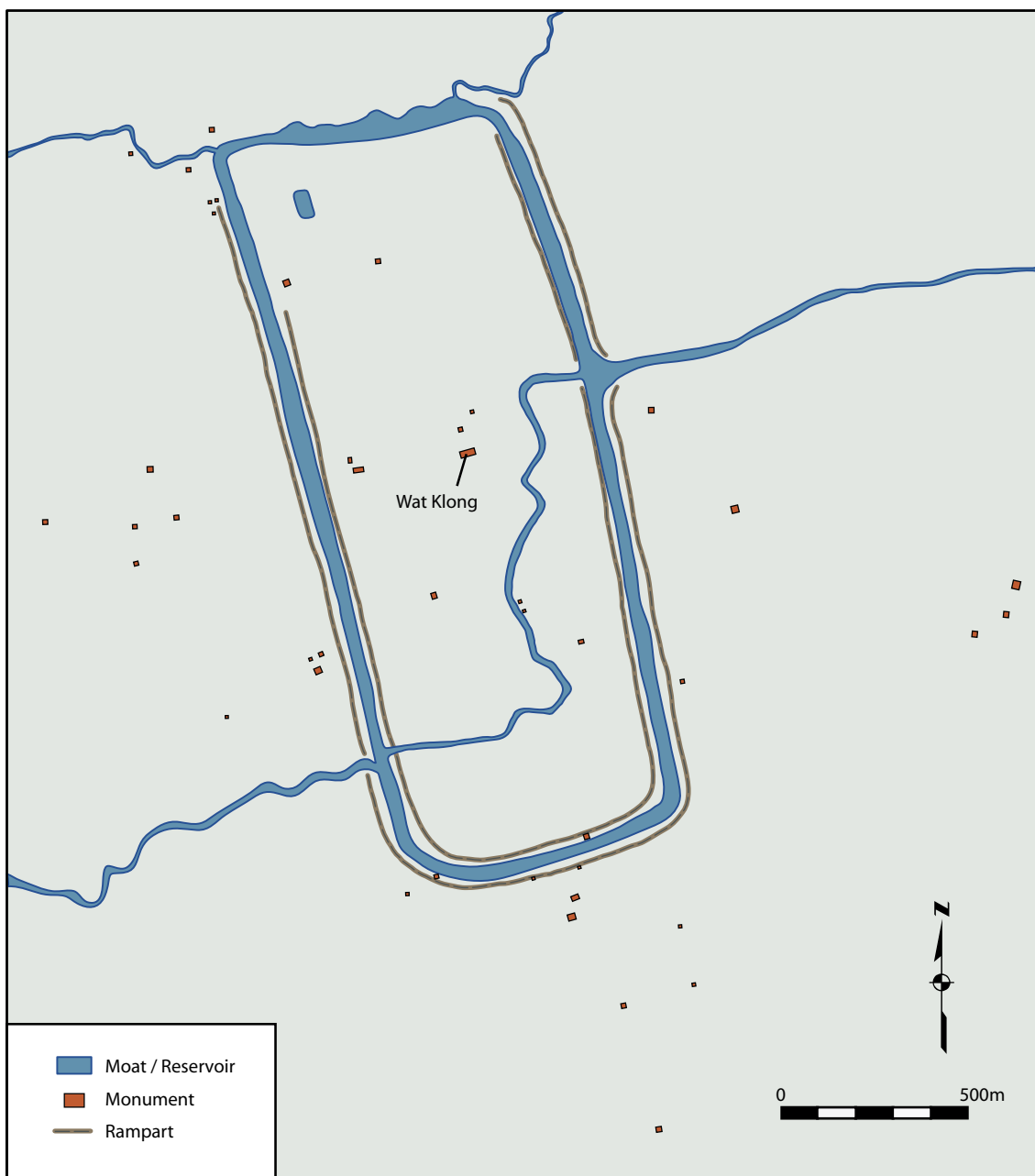


**Figure B.1b.** Thung Setthi

## Meklong Drainage Sites



**Figure B.2a.** Ku Bua (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.2b.** Ku Bua (adapted from Wales 1969: Fig. 5; Rattanakun 1992:76)



## Tha Chin Drainage Sites

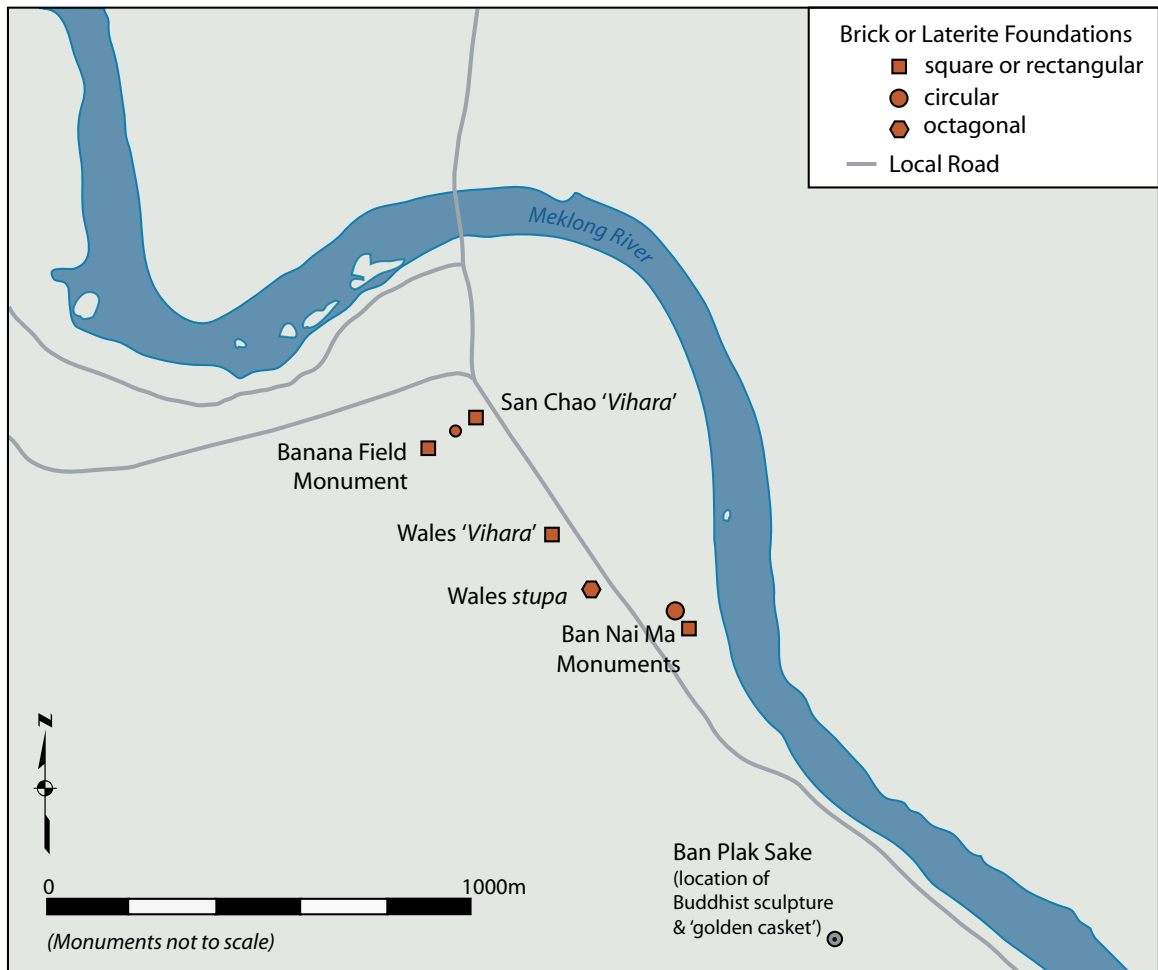


Figure B.3. Pong Tuk (adapted from Coedès 1928)

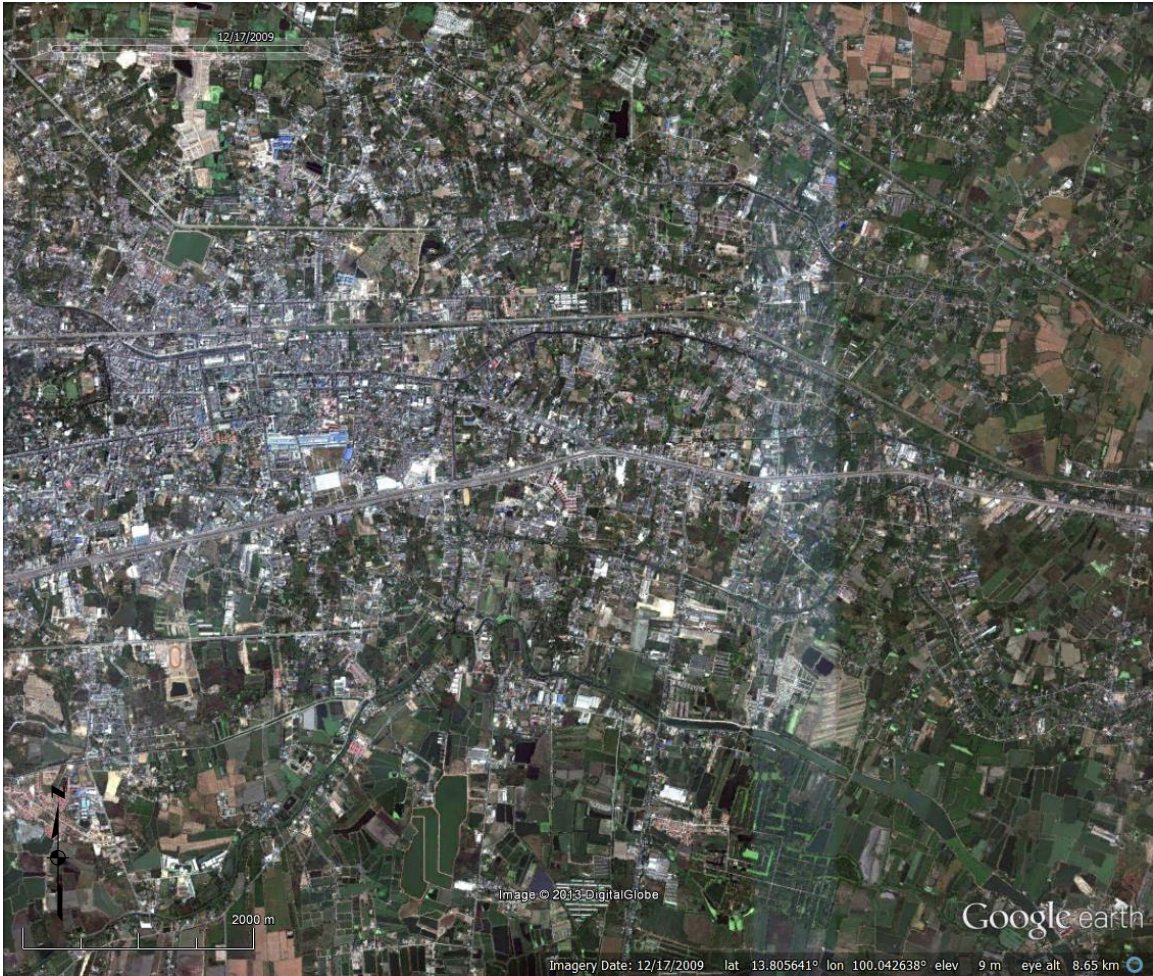


**Figure B.4a.** Kamphaeng Saen (image source: © 2013 Google Earth and © 2013 Digital Globe)

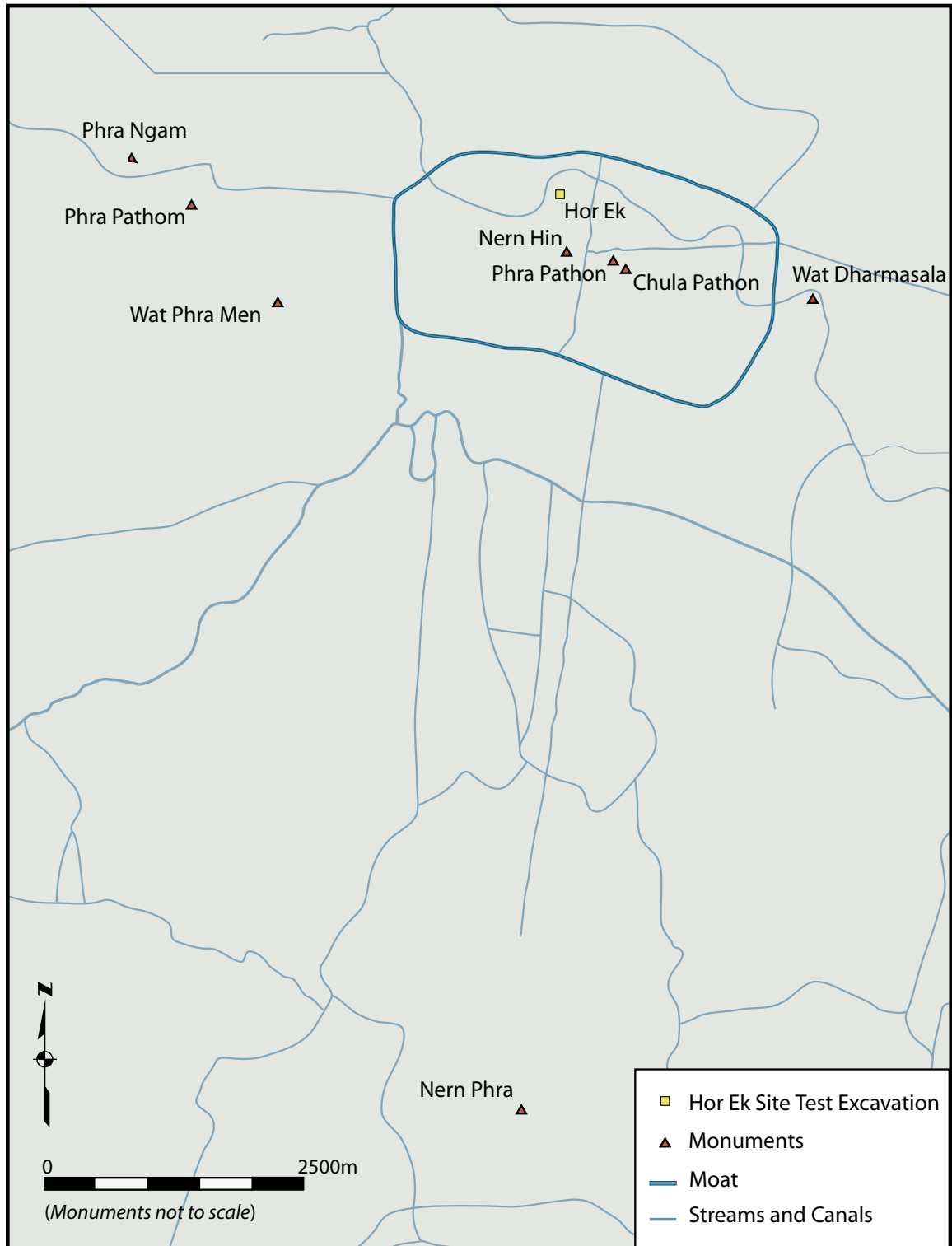


**Figure B.4b.** Kamphaeng Saen



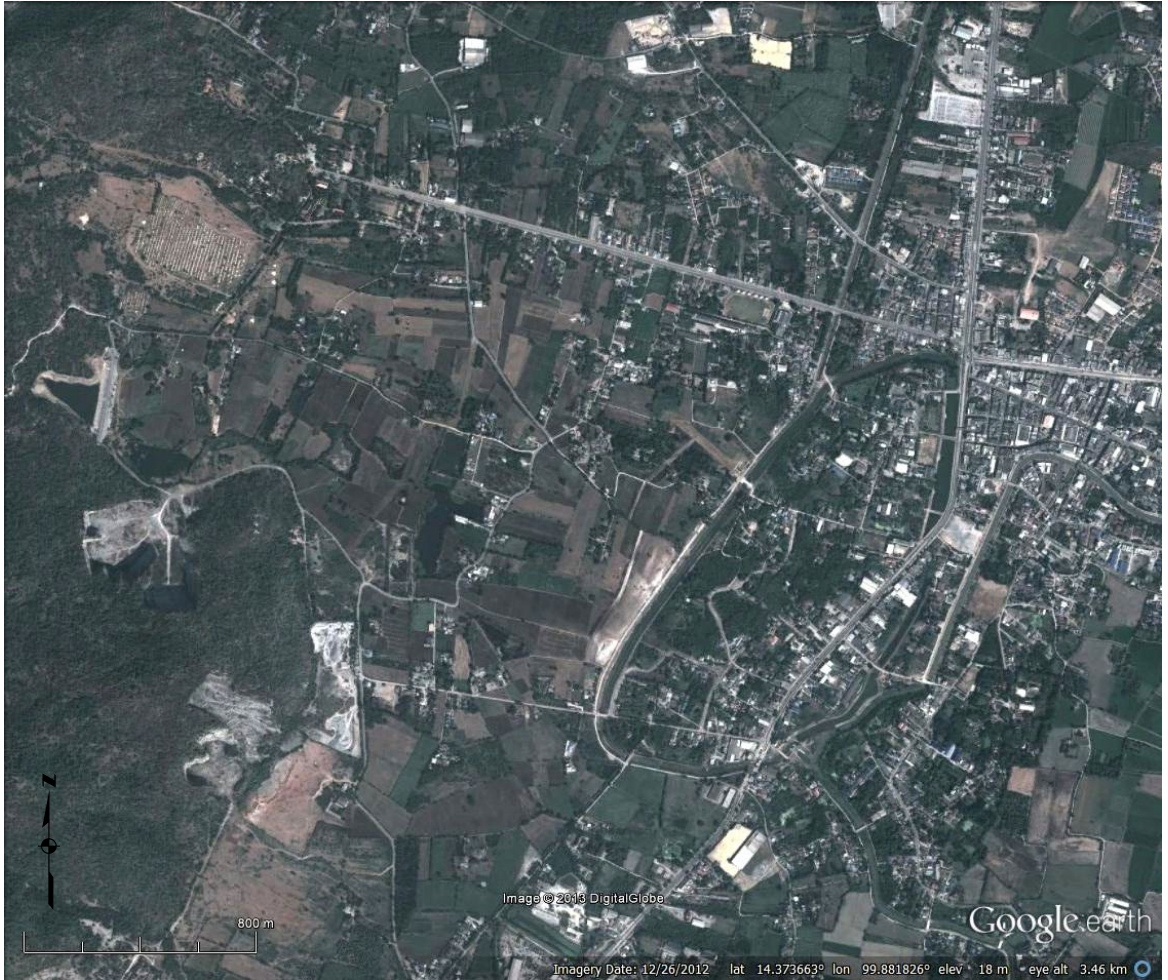


**Figure B.5a.** Nakhon Pathom (image source: © 2013 Google Earth and © 2013 Digital Globe)

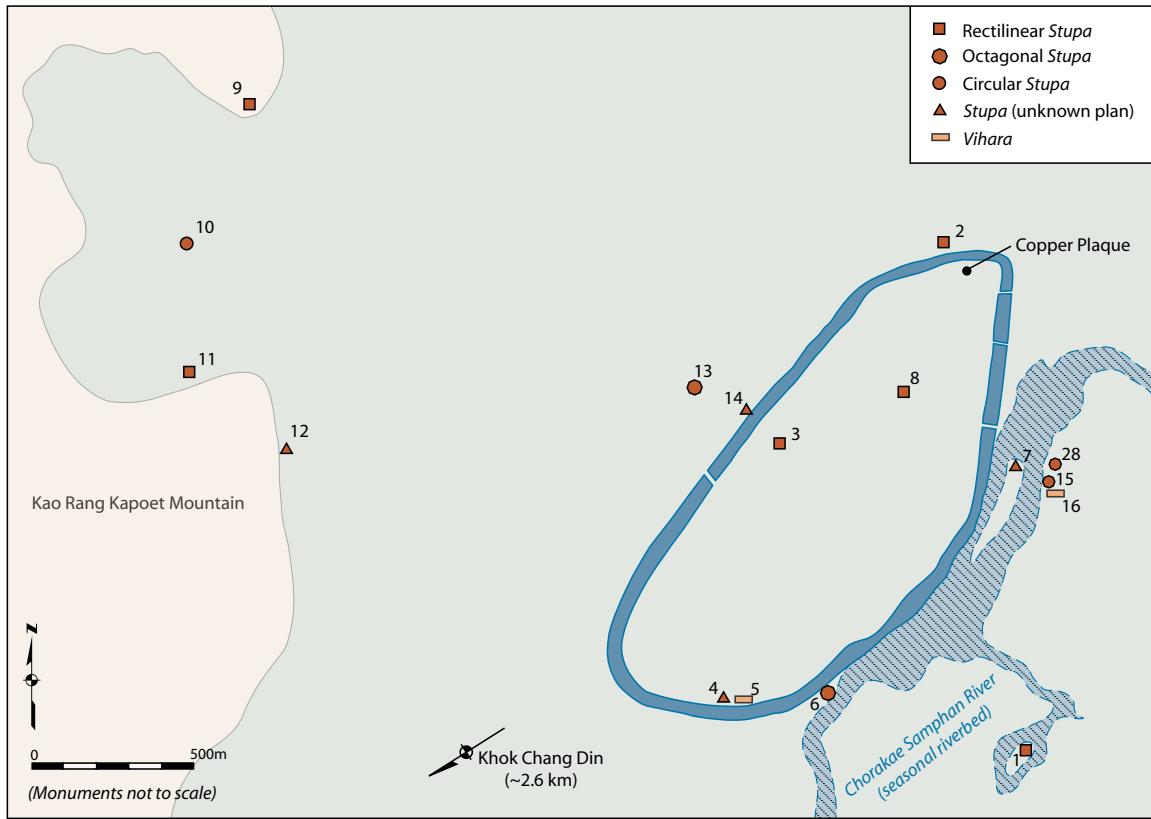


**Figure B.5b.** Nakhon Pathom (adapted from Indrawooth 1999: Map 8; Khunsong 2009: Map 7)





**Figure B.6a.** U-Thong (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.6b.** U-Thong (adapted from Wales 1969: Fig. 3; Kingmani 2002:31).

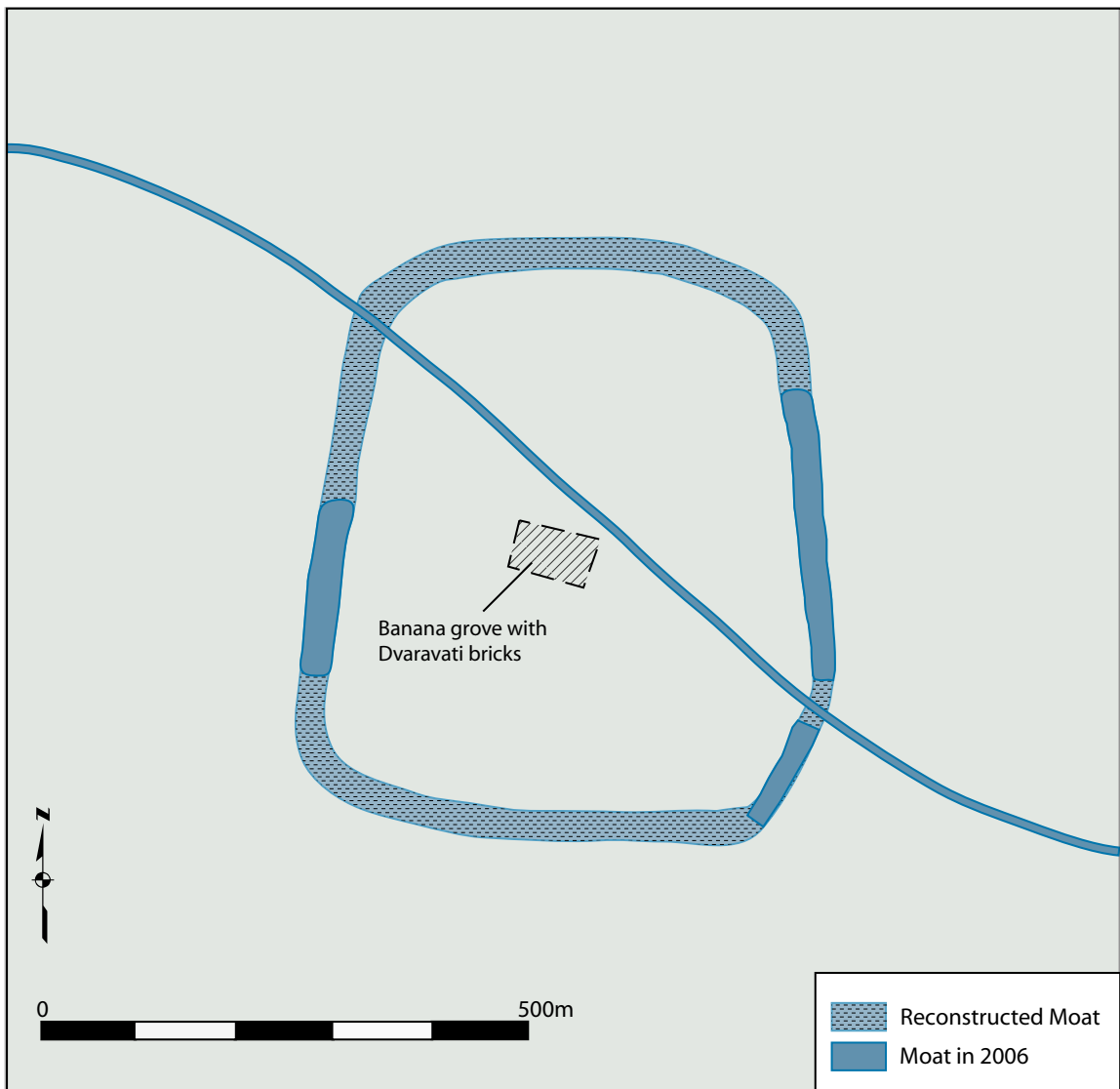
Note: Boisselier (1968) excavated monuments 6, 15 and 28. He also excavated monument 21, which he described as a *mandapa* (a pillared temple that is usually Hindu) but I have been unable to determine the location of this monument and Wales (1969) reported that the excavation removed the structure.

## Chao Phraya River Sites



**Figure B.7a.** Dong Khon (image source: © 2013 Google Earth and © 2013 Digital Globe)



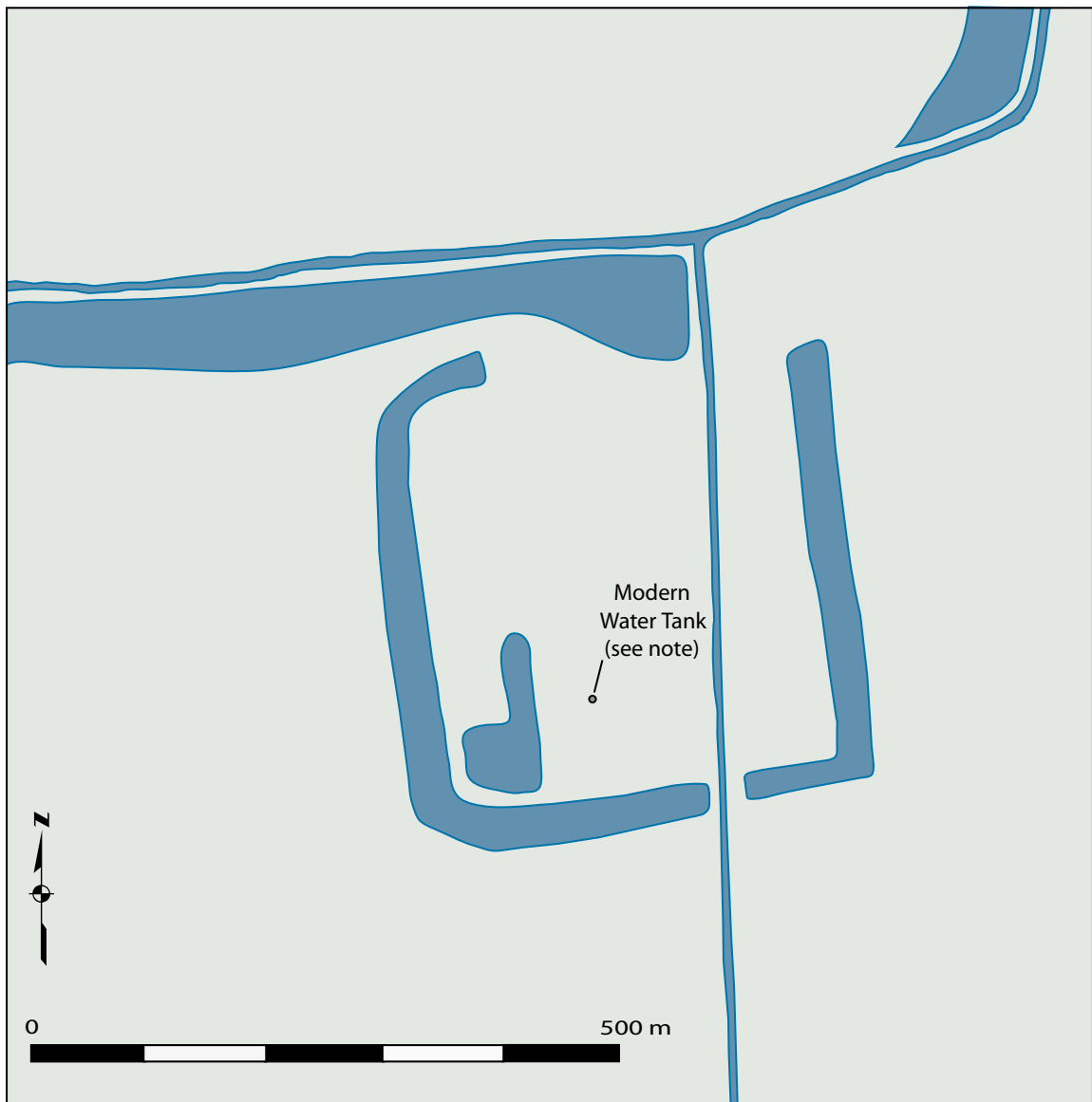


**Figure B.7b.** Dong Khon

Note: The reconstructed moat form is based on a combination of: 1) an aerial photograph in Wilaieko (1991a:42) that clearly showed the intact moat, although the scale appears to be a typographic error; 2) a 2006 satellite SPOT satellite image where intact sections and traces of the moat are visible; 3) the approximate site dimensions of 755 x 555 m given by Higham and Thosarat (1998: 184); 4) my brief field observations in 2008. During my visit to the site, local residents showed me an extensive collection of Dvaravati style objects they had collected in the fields inside the moat including: earthenware ceramics, lion figurines, bricks and fragments of grinding stones and grinders. These objects had been collected in the Banana grove shown on the map and its neighboring fields. Inspection of the Banana grove revealed several clusters of Dvaravati style bricks, which may have been removed from the field to the south. I did not observe any intact brick foundations.



**Figure B.8a.** Ku Muang (Ang Thong), (image source: © 2013 Google Earth and © 2013 Digital Globe)



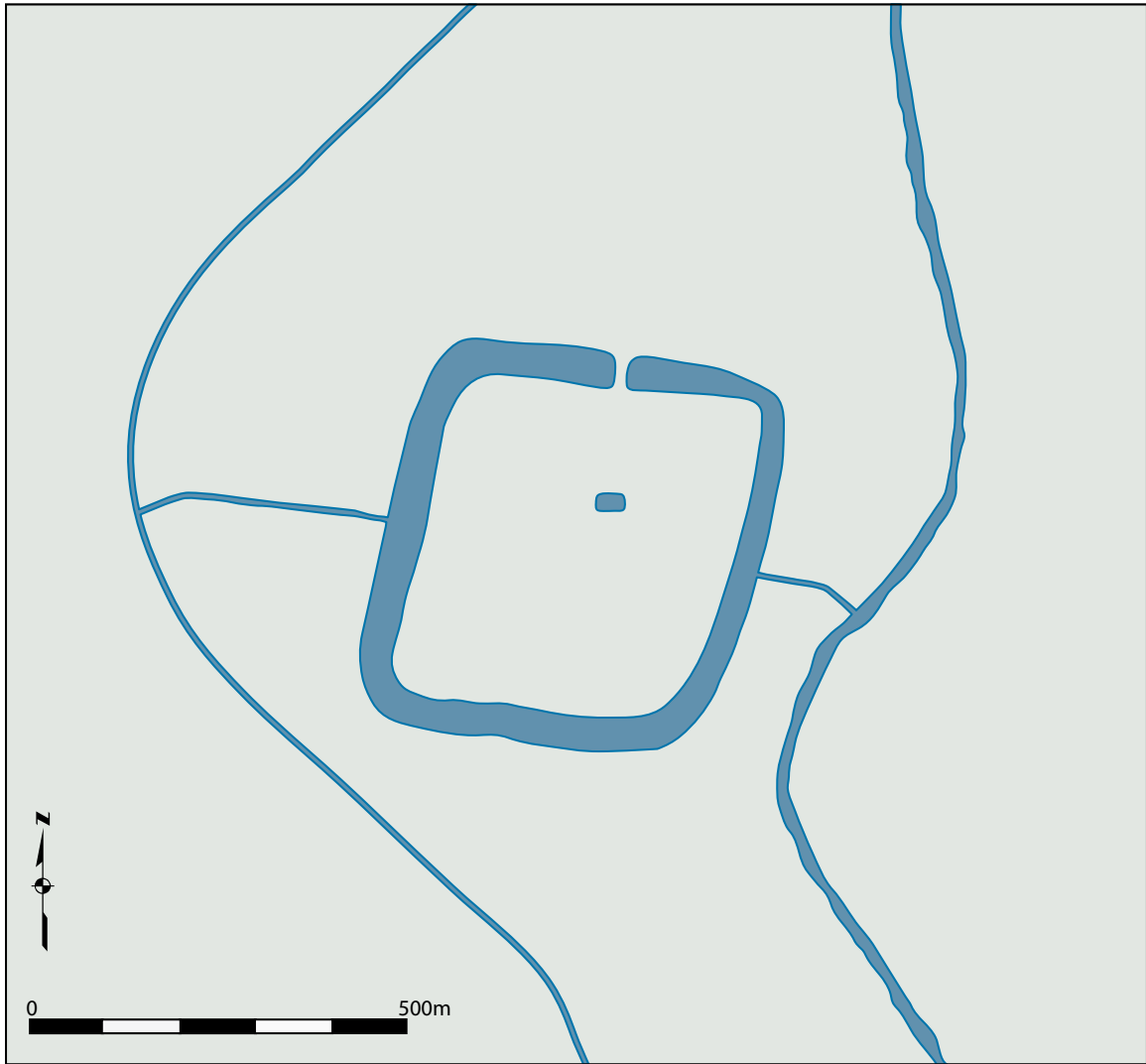
**Figure B.8b.** Ku Muang (Ang Thong)

Note: During a 2008 reconnaissance to the site, the village head, Mr. Mong Khon Chudi, showed me the location of a recently dug water tank (see map) and a collection of archaeological material recovered during its construction. These objects included a Dvaravati-style saddle quern and grinding stone, a terracotta pottery anvil with concentric circles, numerous cord-impressed earthenware sherds and the head and torso of what appeared to be an Ayutthaya period terracotta Buddha.





**Figure B.9a.** Ku Muang (Duembang Nangbuat), (image source: © 2013 Google Earth and © 2013 Digital Globe)

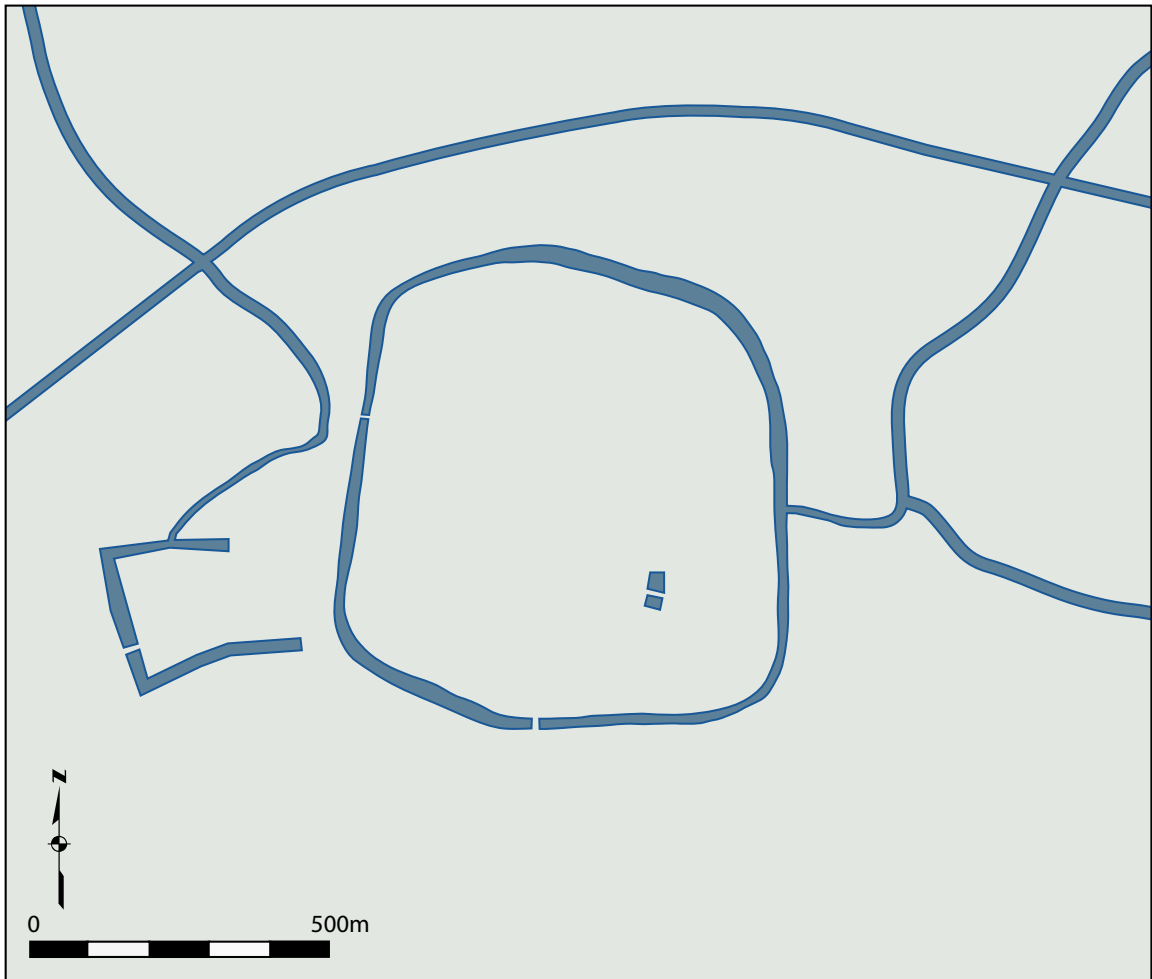


**Figure B.9b.** Ku Muang (Duembang Nangbuat)

Note: During my visit to the site in 2008, I examined a small collection of artifacts left at the village spirit shrine to the northeast of the baray in the site interior. These included: 1) several cord-impressed earthenware sherds of indeterminate period, but possibly Dvaravati; 2) an earthenware finial; 3) two halves of a grinding stone (possibly from the same object) that may also be Dvaravati period. There were no detectable ramparts, but they may have been destroyed by the modern agricultural activities and development inside and outside the moat.



**Figure B.10a.** Ku Muang (Inburi), (image source: © 2013 Google Earth, © 2013 Digital Globe and © 2013 Digital Globe)



**Figure B.10b.** Ku Muang (Inburi)

Note: When I visited the site in 2008, the northern part of the moat was being actively dredged and modified with heavy machinery. Cord-impressed earthenware sherds were visible in areas disturbed by this work on the interior of the enclosure. Also, Higham and Thorasat (1998:183) stated that the Silpakorn University research team documented “many brick temple foundations cluster(ed) round the moated area. I have not obtained the original field report (Silpakorn 1980) to determine the exact number or location, and did not have sufficient time to systematically identify these monuments during my visit.





**Figure B.11a.** Muang Huai Duk (image source: © 2013 Google Earth, © 2013 Digital Globe and © 2013 Tele Atlas)



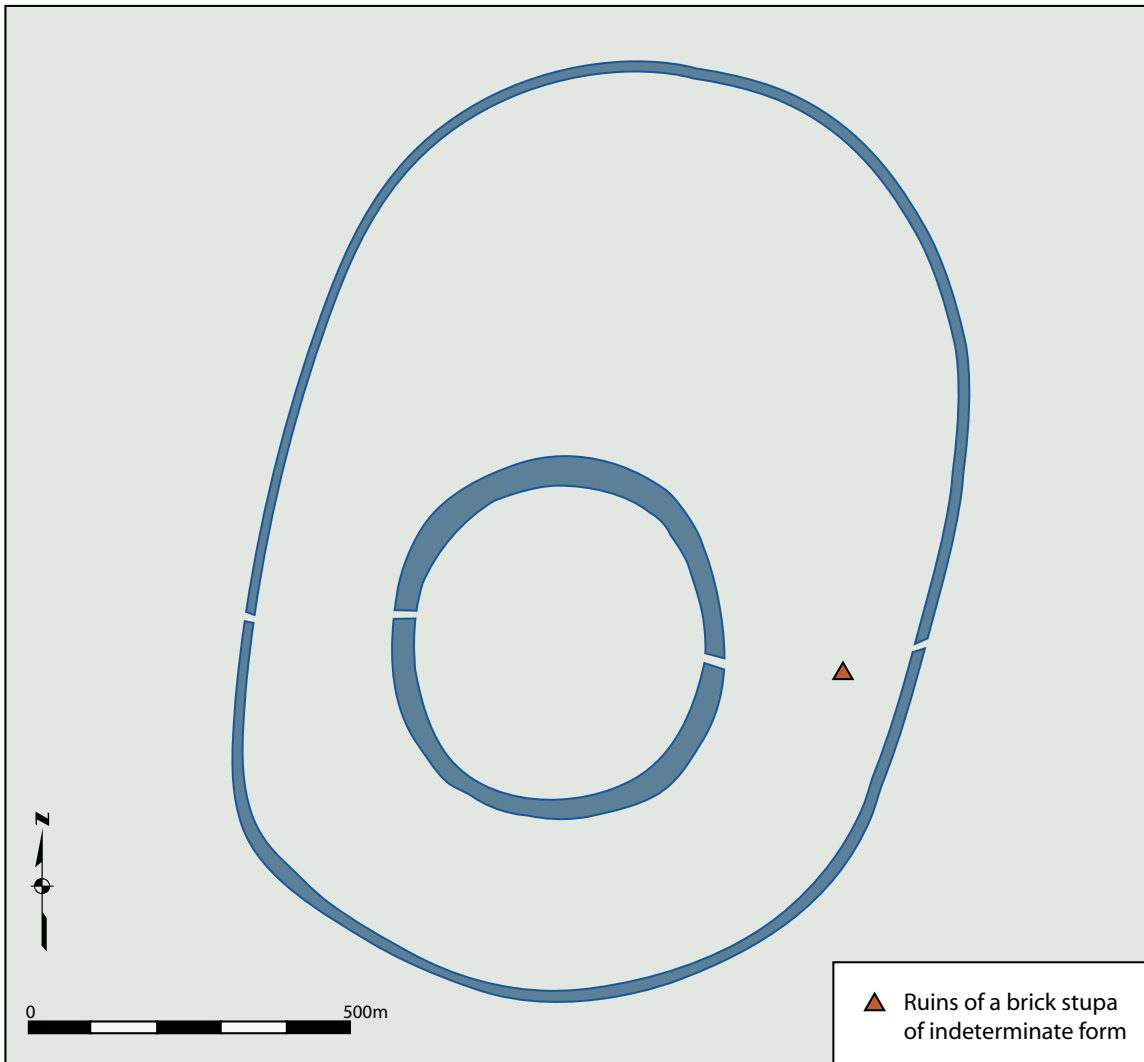
**Figure B.11b.** Muang Huai Duk

Note: Iron tap slag and earthenware sherds with cord marking, cross-hatched incising and triangular impressions seen on surface of interior during 2008 visit to the site.

## Upper Chao Phraya River Sites



**Figure B.12a.** Bung Khok Chang (image source: © 2013 Google Earth and © 2013 Digital Globe)



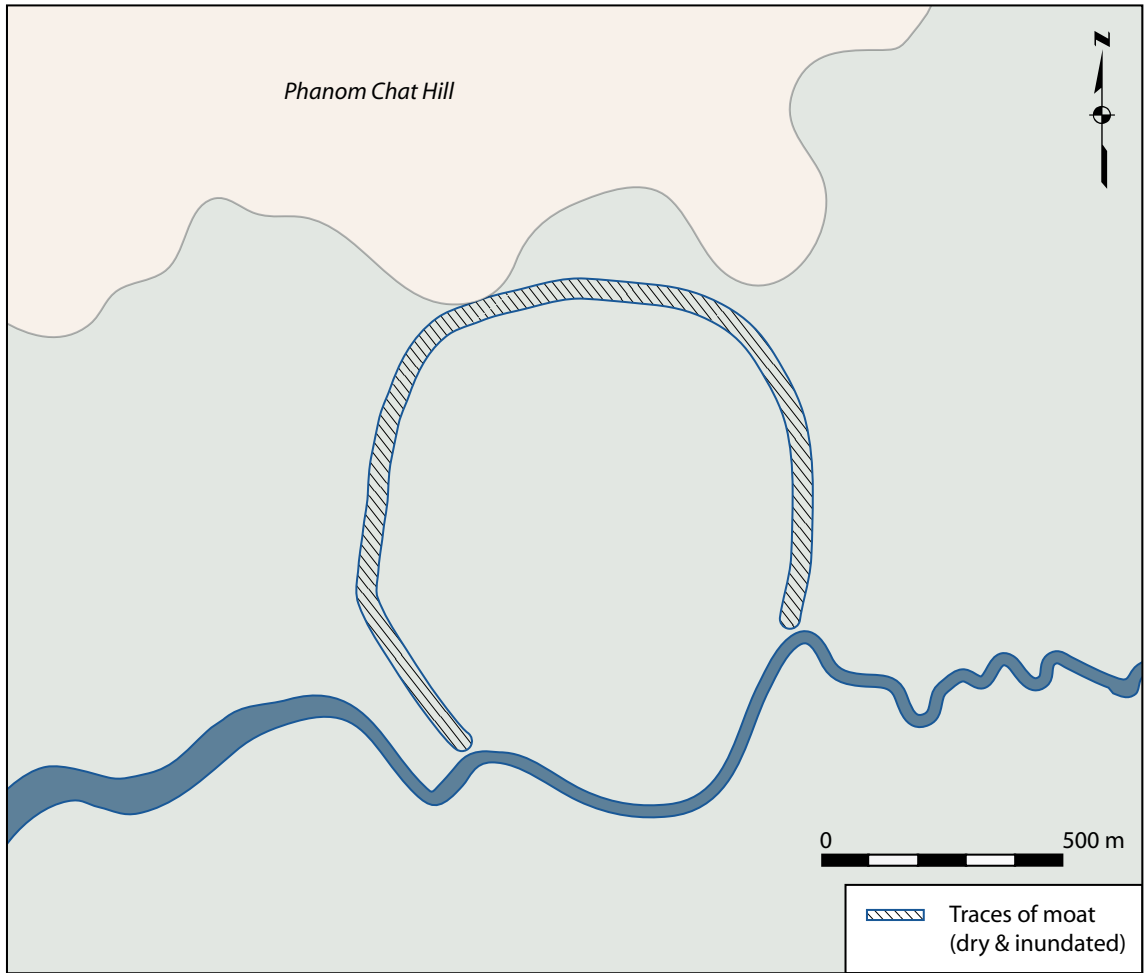
**Figure B.12b.** Bung Khok Chang

Note: There may be additional monuments to the one documented above. My 2008 visit to the site was extremely cursory.





**Figure B.13a.** Don Kha (image source: © 2013 Google Earth and © 2013 Digital Globe)

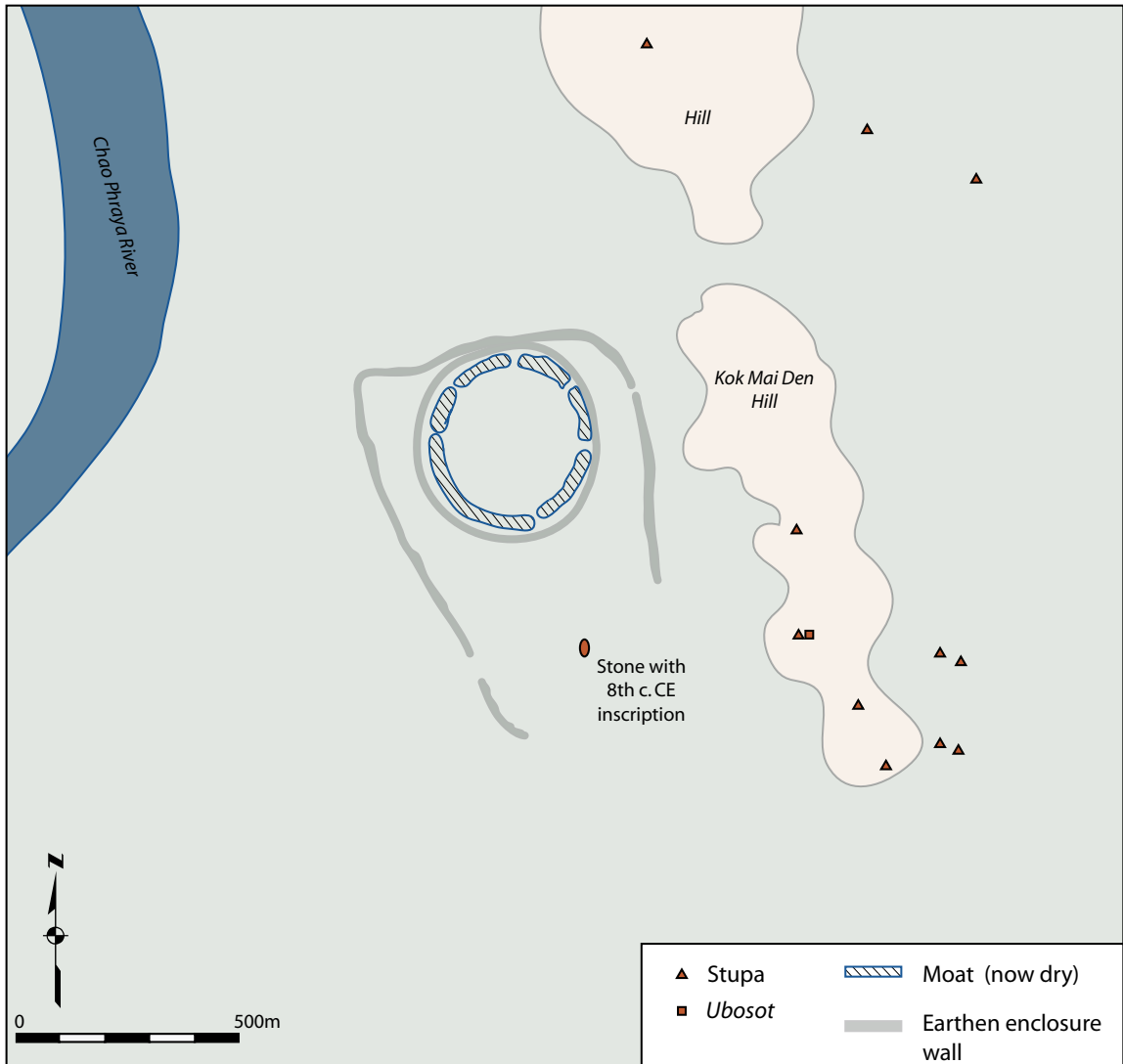


**Figure B.13b.** Don Kha





**Figure B.14a.** Muang Bon (Kok Mai Den), (image source: © 2013 Google Earth, © 2013 Digital Globe and © 2013 NASA)



**Figure B.14a.** Muang Bon (Kok Mai Den) (after Wales 1965:fig. 2, 1969:fig.6, with modifications from Google Earth)

Note: Wales (1969:72) noted that there were traces of a then dry moat on the exterior edge of the outer rampart still visible at the time of his fieldwork at the site in 1964, but rapidly being destroyed through agriculture. No traces of this moat are visible in satellite imagery or during my reconnaissance to the site in 2008, and the outer moat is not shown on this map.

Wales (1969:75-80) reported that the Fine Arts Department located a total of 16 brick stupa foundations outside the enclosure to the east of the site. His map included locations for only those monuments shown above. Additionally, he interpreted a group of eight crude sema stones as evidence of a boundary around a perishable monastic structure which he identified as a vihara; however, sema stones are usually associated with ubosot structures rather than viharas, and for this reason I have indicated their location as an ubosot on the map above.





**Figure B.15.** Muang Karung (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.16.** Thap Chumphon (image source: © 2013 Google Earth, © 2013 Digital Globe and © 2013 Tele Atlas)





**Figure B.17.** U-Thapao (image source: © 2013 Google Earth and © 2013 Digital Globe)

## Ping Drainage Sites



**Figure B.18.** Dong Mae Nang Muang (image source: © 2013 Google Earth and © 2013 Digital Globe)



## Lopburi Drainage Sites



**Figure B.19.** Chansen (image source: © 2013 Google Earth and © 2013 Digital Globe)

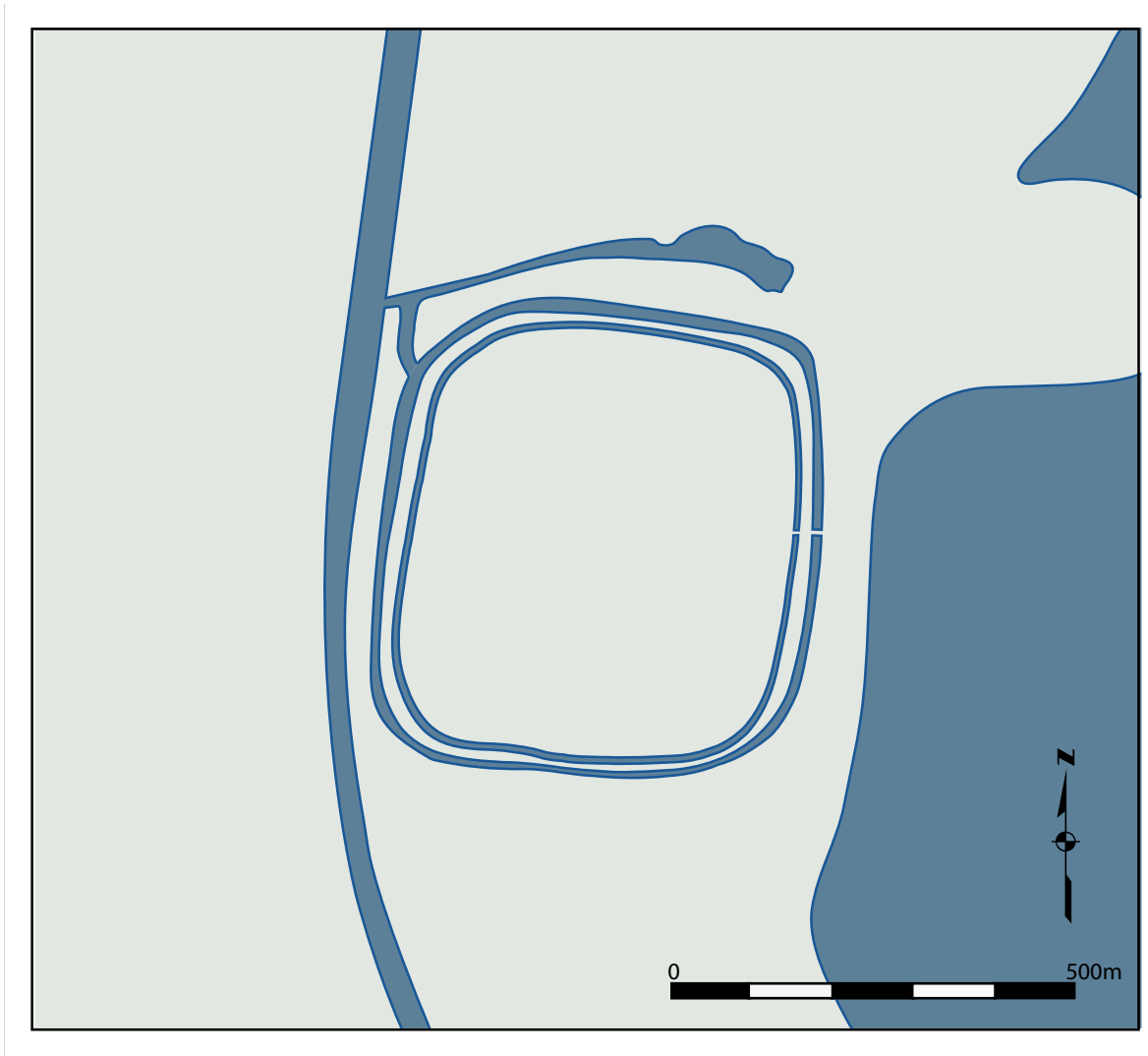


**Figure B.20.** Dong Marum (image source: © 2013 Google Earth and © Cnes/Spot Image)





**Figure B.21a.** Khiitkhin (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.21b.** Khiitkhin

Note: There is an earthen enclosure wall between the two concentric moats.





**Figure B.22.** Lopburi (image source: © 2013 Google Earth and © 2013 Digital Globe)

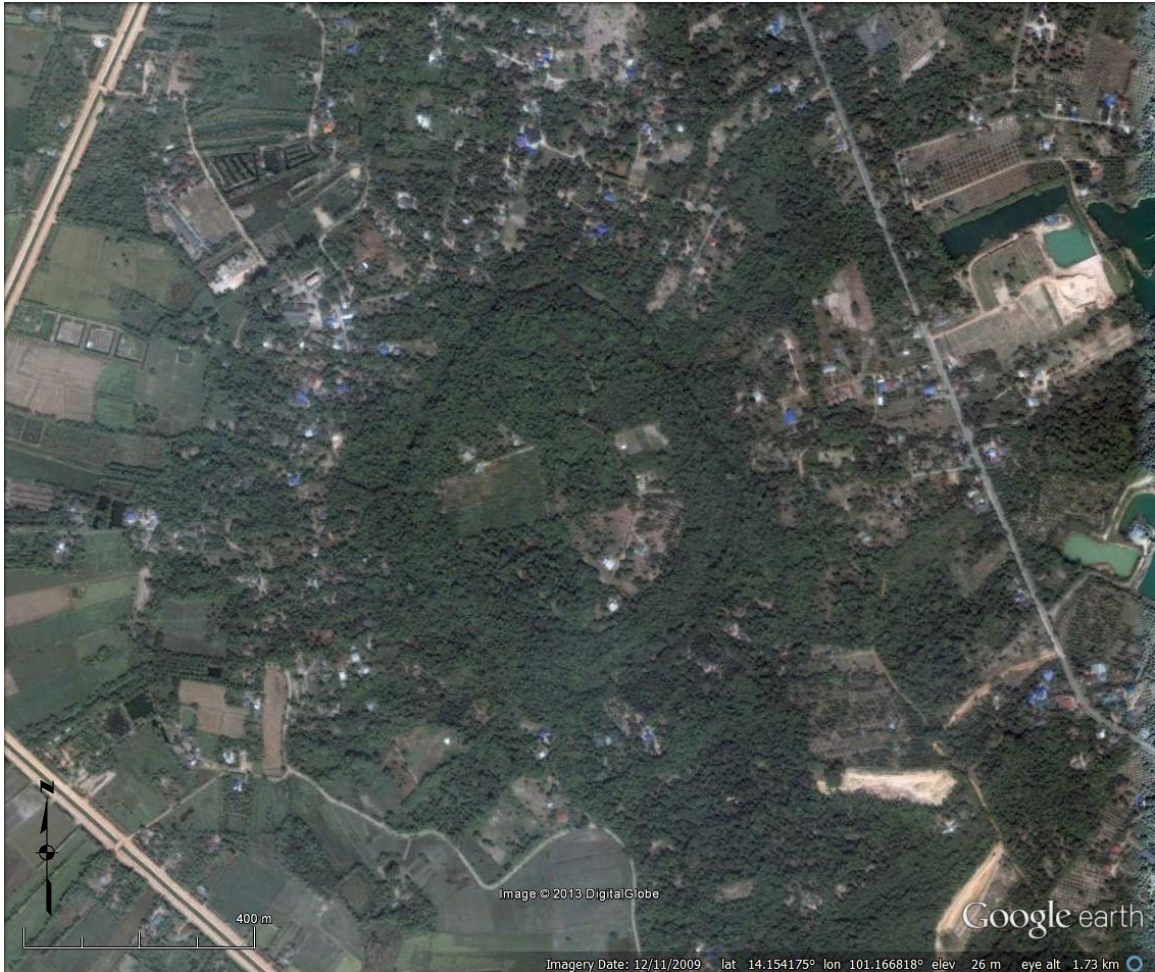


**Figure B.23.** Promtin Tai (image source: © 2013 Google Earth and © 2013 Digital Globe)

Note: Vanasin and Supajanya (1981) reported that the enclosure at Promtin Tai was semi-circular in shape and roughly 1 km in diameter. Lertcharnrit (2006) reported that since Vanasin and Supajanya's (1981) assessment, the moat has been destroyed by rice agriculture and is no longer visible. There is a curious right angled bend in the stream that flows through the site (visible in the satellite image above) but this may also be the result of modern landscape modification.



## Bang Pakhong Drainage Sites

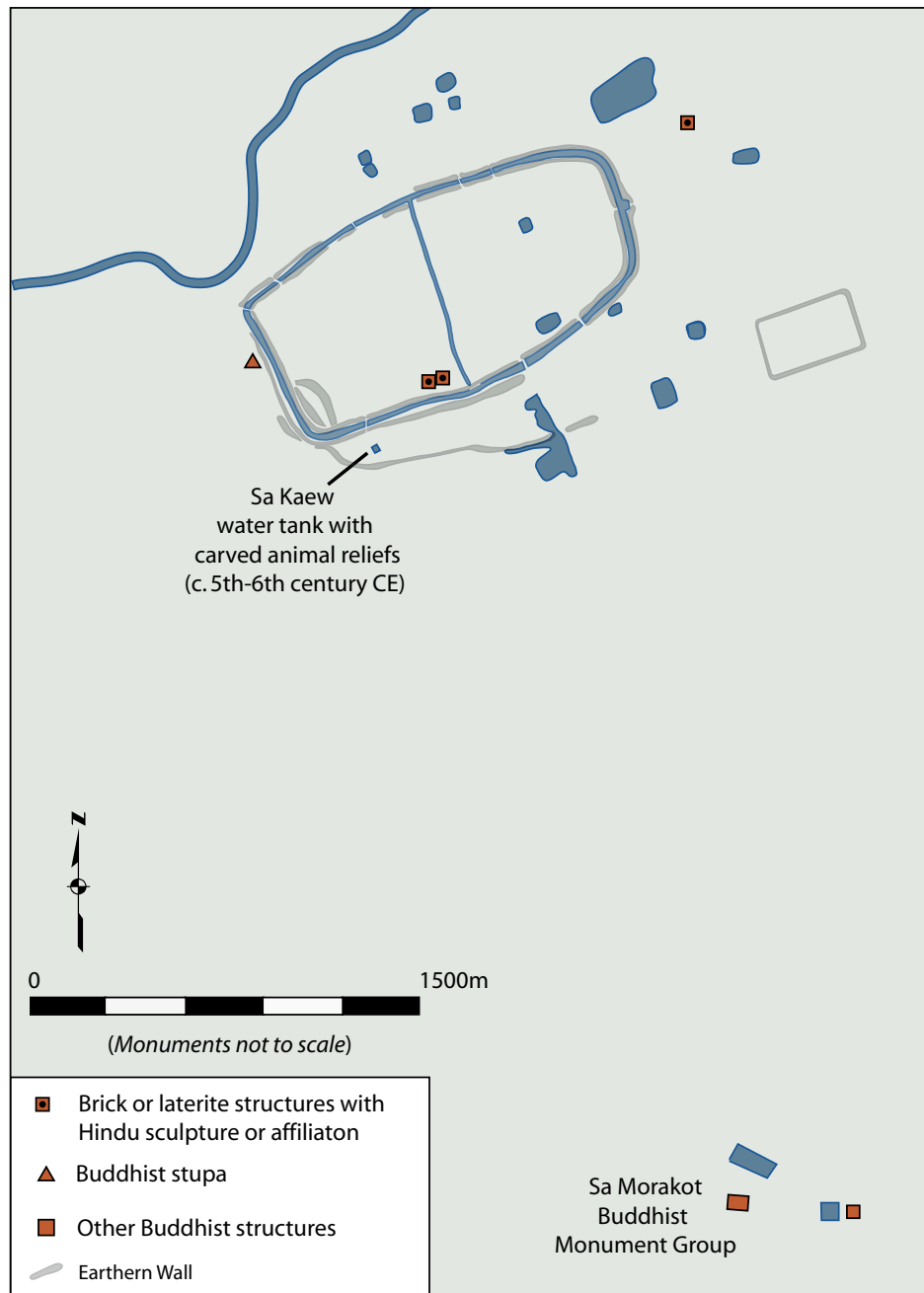


**Figure B.24.** Dong Lakhon (image source: © 2013 Google Earth and © 2013 Digital Globe)





**Figure B.25a.** Dong Sri Mahosot (image source: © 2013 Google Earth and © 2013 Digital Globe)



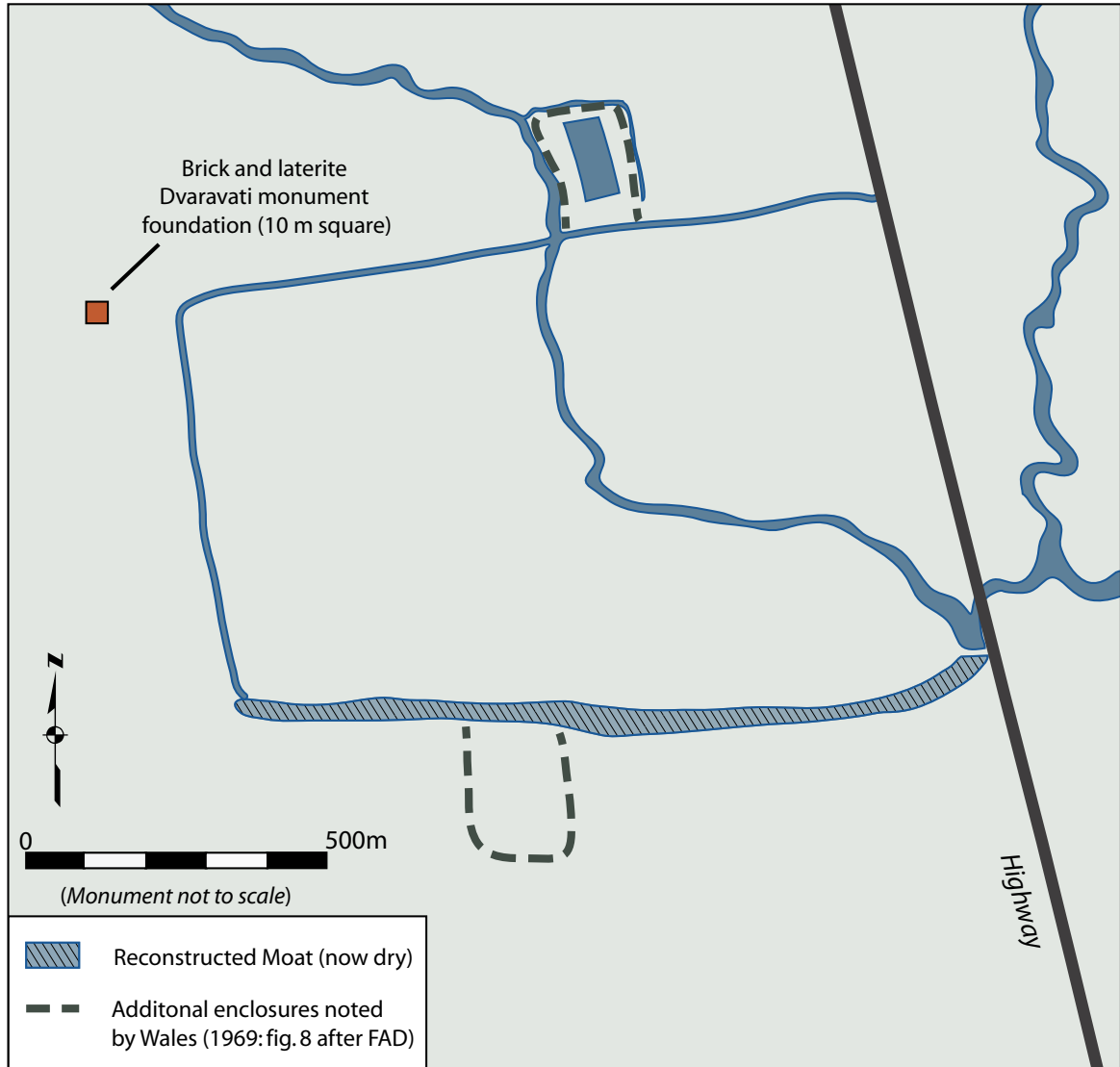
**Figure B.25a.** Dong Sri Mahosot (after Wales 1969: fig. 7; Pisnupong 1993: fig. 1)

Note: There are numerous brick and laterite monuments, dating to the Dvaravati and Khmer periods, located both inside and outside the enclosure. Pisnupong (1993:fig. 1) provided a much more detailed map of the site with the locations of these additional monuments, although their age and religious affiliation was not indicated on the map. The above map shows those monuments that I believe date to the Dvaravati period and have a clear religious affiliation (see Wales 1969:91-93). A more thorough review of the reports on the extensive research conducted at this site would no doubt provide details on these additional monuments. I have also shown the Sa Morakot group which contains Dvaravati period Buddhist structures, underlying later Khmer period structures.





**Figure B.26a.** Muang Phra Rot (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.26b.** Muang Phra Rot (after Wales 1969:93-95; with modifications based on satellite images)

Note: Wales's (1969:fig8) map was based on a map by the FAD and his own reconnaissance. He slightly overemphasized the regularity of the plan, depicting it as near perfect rectangle. He noted enclosure walls on both the inner and outer edges of the moat. He also showed an eastern wall of the enclosure just east of the highway, although even at that time the moat appears to have been destroyed in that section. No significant traces of either a moat or enclosure wall along the eastern side are visible on modern satellite images, and I have not shown them here. They have probably been destroyed through highway construction and modern development.

According to Wales (1969:93) the monument northeast of the enclosure was excavated by the FAD, revealing a 10 m square brick and laterite monument foundation, with Dvaravati style bricks.

## Pasak Drainage Sites



**Figure B.27.** Sab Champa (image source: © 2013 Google Earth, © 2013 Digital Globe and © 2013 Cnes/Spot Image)



## Pasak Drainage Sites



**Figure B.28a.** Sri Thep (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.28b.** Sri Thep

Note: There are numerous monuments (>50) and water features inside the enclosure at Sri Thep, many of which date to the Khmer period occupation of the center. Since the age of these monuments is not always clear on the published maps, I have only shown the locations of the two large monuments known to date to the Dvaravati period. There are other Dvaravati period monuments at the site that are much smaller in size.



## Selected Mun Drainage Sites

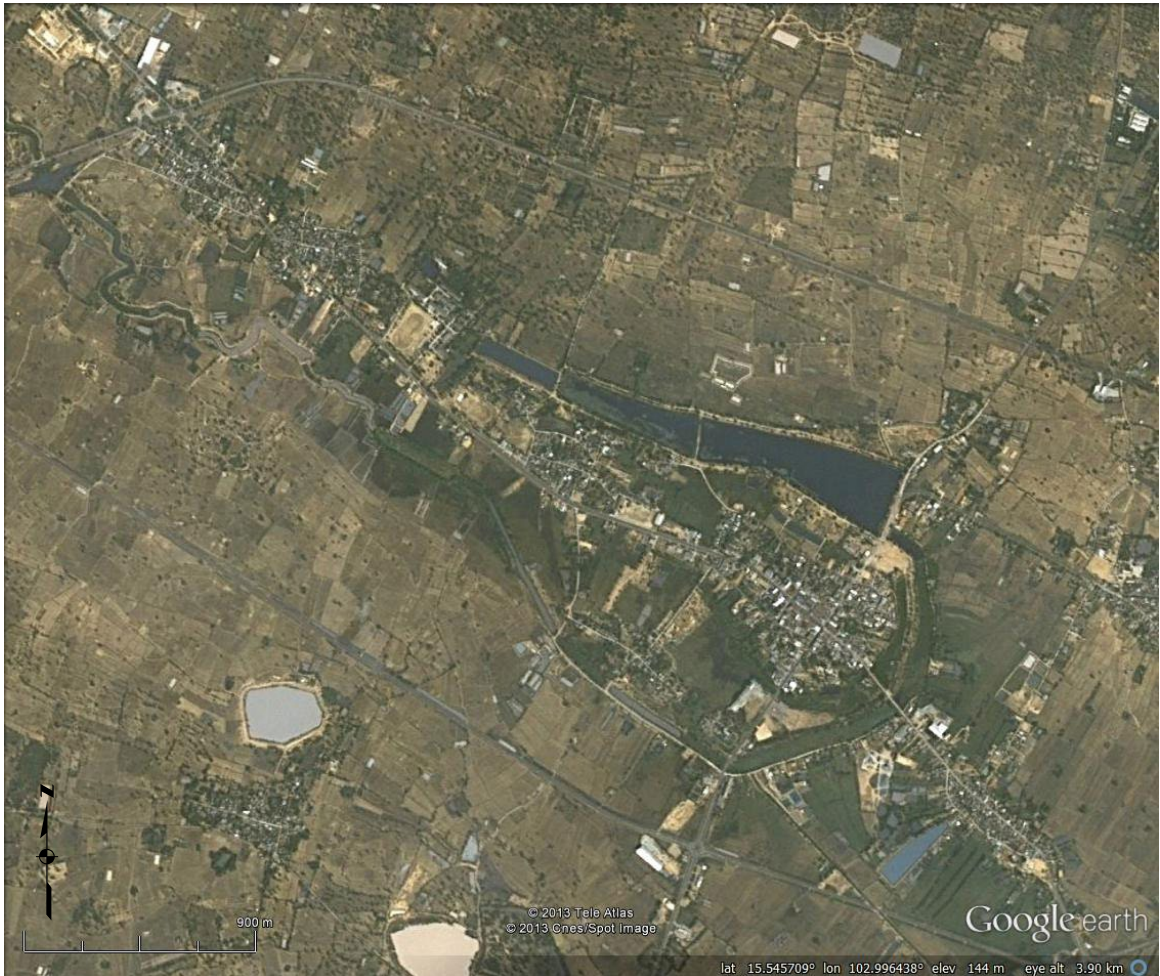


**Figure B.29.** Muang Sema (image source: © 2013 Google Earth and © 2013 Digital Globe)



**Figure B.30.** Na Dune (image source: © 2013 Google Earth, © 2013 Digital Globe and © 2013 Cnes/Spot Image)



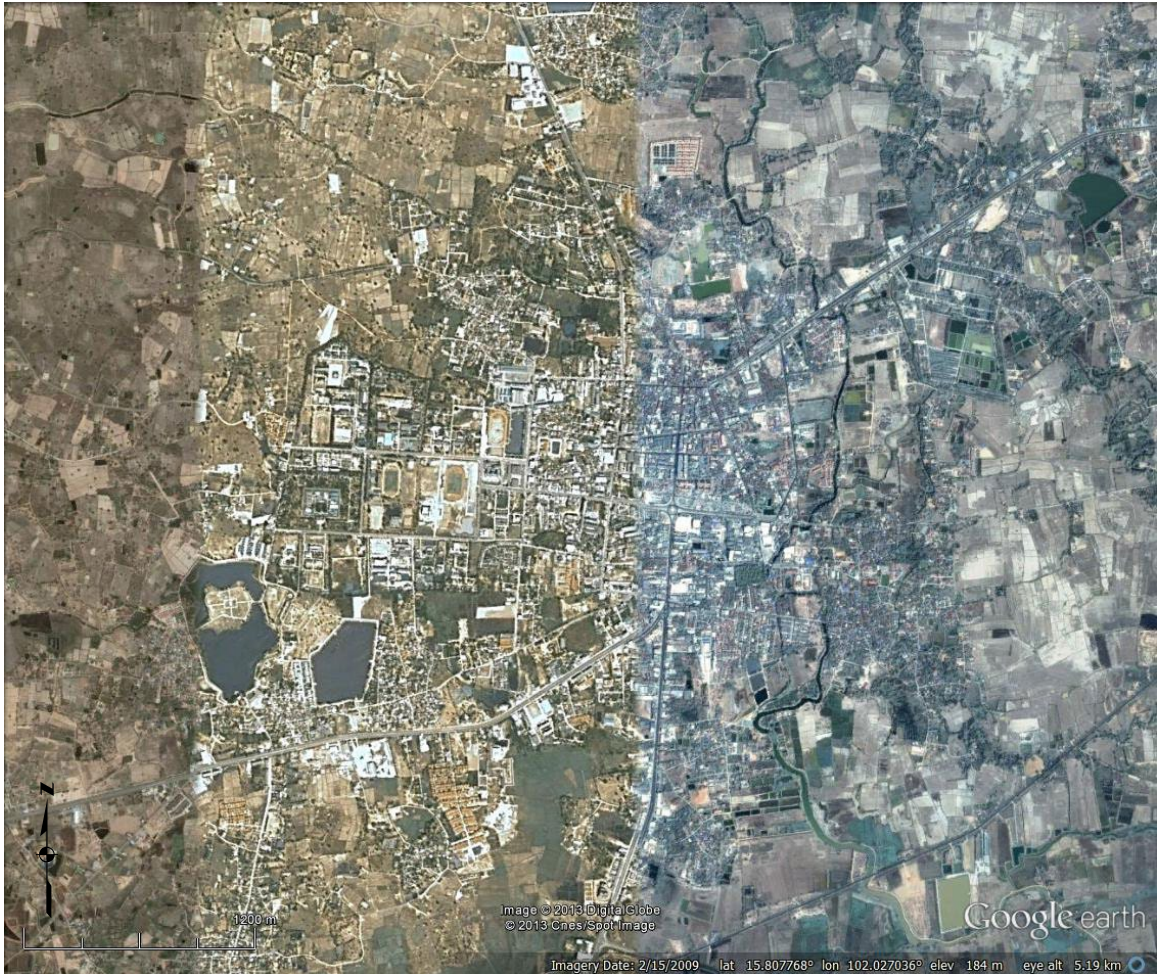


**Figure B.31.** Putthai Song (image source: © 2013 Google Earth, © 2013 Tele Atlas and © Cnes/Spot Image)

Note: This is the modern settlement of Putthai Song, which appears to have remnants of two concentric irregular moats; however, I have not visited the site and am uncertain if this is the Dvaravati center of the same name that Indrawooth (1999: map 7) listed as a prominent Dvaravati site in this district (i.e. Amphoe Putthaisong, Buriram Province).



## Selected Chi Drainage Sites



**Figure B.32.** Chaiyaphum (image source: © 2013 Google Earth, © 2013 Digital Globe and © Cnes/Spot Image)

Note: The above image shows the modern settlement of Chaiyaphum. I have been unable to conclusively identify a moat or enclosure in the image, and have not visited the site. It is possible that the Dvaravati period site listed by Indrawooth (1999: map 7) has been obscured by the modern settlement or is located elsewhere in the district.



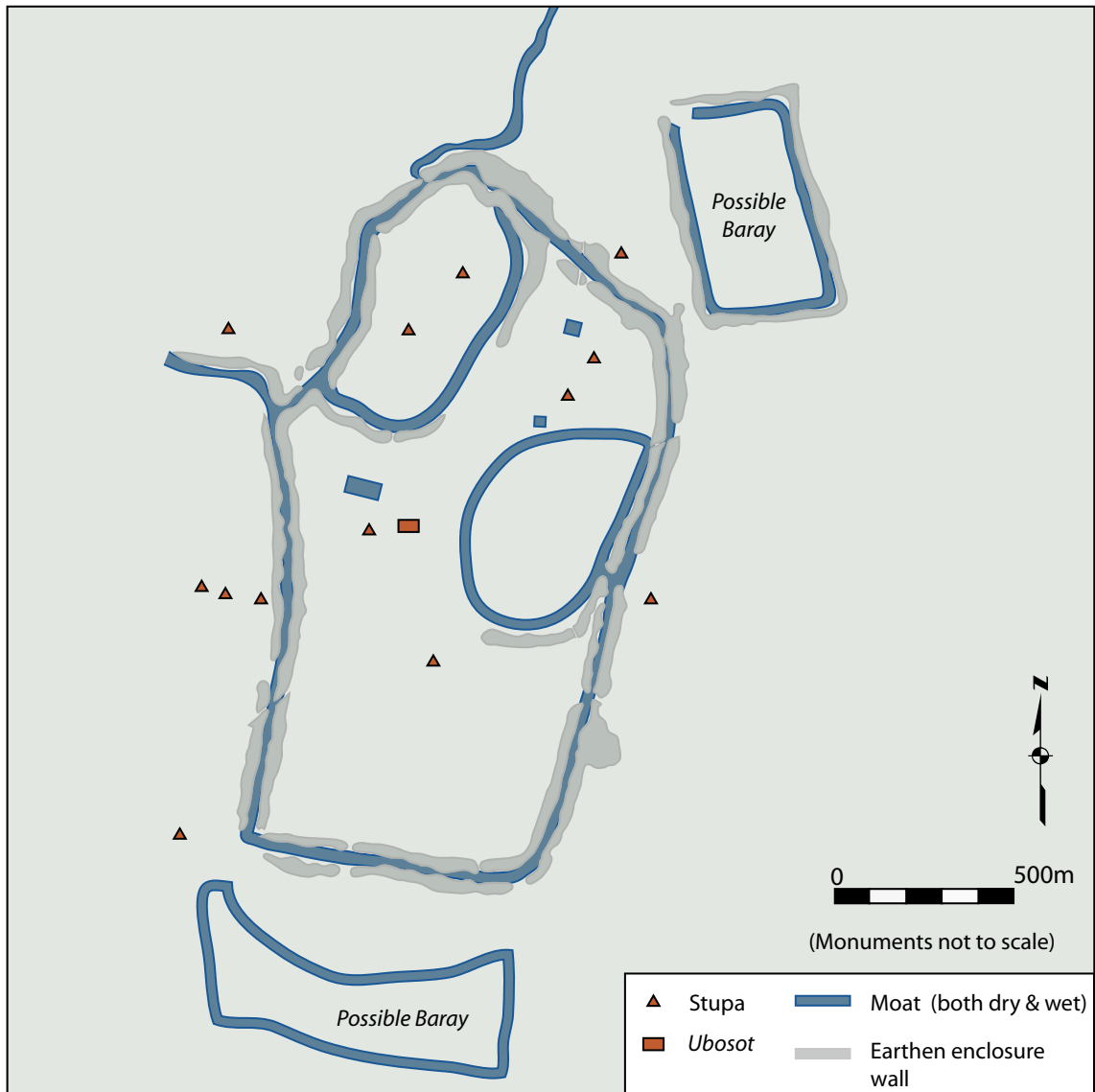


**Figure B.33.** Kantarawichai (image source: © 2013 Google Earth, © 2013 Digital Globe)



**Figure B.34a.** Muang Fa Daed Song Yang (image source: © 2013 Google Earth, © 2013 Digital Globe and © Cnes/Spot Image)





**Figure B.34b.** Muang Fa Daed Song Yang (adapted from Indrawooth 2001:104-105, with modifications based on satellite images)

Note: In order to highlight the enclosure form and monument locations, this map has omitted many of the details provided by Indrawooth's (2001:105) detailed map. The ramparts are adapted from Indrawooth's map, but the wet and dry moat traces are based on a combination of that map and satellite imagery.

## APPENDIX C

### **Dvaravati *Dharmachakras***

Dharmachakras are one of the most iconic forms of Dvaravati sculpture. As I discuss in Chapters 4 and 5, the symbolic significance of the *dharmachakras* to the Dvaravati remains unclear. It may have served as a symbol of Buddhist kingship, the monastic organization, or both. The location of dharmachakras, both on the regional and intra-site scales, has the potential to reveal the types of activities these objects were affiliated with and who their intended audience may have been. Unfortunately, most of the known dharmachakras were not discovered in systematic excavations, and therefore have only limited information about their original provenance.

This appendix collates data on the original and current locations of Dvaravati *dharmachakras*. Brown's (1996) thorough analysis of the stylistic development and indigenous and foreign influences on the *dharmachakras'* form and decorative motifs is an invaluable resource for the study of these objects. I direct the reader to the photographs at the end of Brown's book for images of most of the *dharmachakras* listed here. In table C.1. I have retained the numbering system employed by Brown for the sake of reference. For those dharmachakras with a number, the provenance information and diameter measurements also come from Brown's image captions. Brown's information on the *dharmachakras* represents the most complete compilation of these data; however in his book he does not include a map showing the regional distribution of the *dharmachakras*, or a table systematically compiling the provenance information included in his image captions. This appendix is an effort to provide a systematic inventory of the known *dharmachakras*. I have augmented Brown's data with information on intra-site provenance in the few cases where it is available, as well as a few *dharmachakras* not included by Brown. The presence of several *dharmachakras* in

private collections with unknown or limited provenance suggests there are likely other undocumented examples not included in this list.

**Table C.1. Provenances and sizes of Dvaravati Dharmachakras**

Chakra No	Site	Province	Intra-site Location	Current Location	Dia. (cm)	Notes
1	U-Thong	Suphanburi	Stupa 2	National Museum, U-Thong	105	
2	Lopburi	Lopburi		National Museum, Lopburi	39	
3	U-Thong	Suphanburi	Stupa 11	National Museum, U-Thong	94	found with pillar and base
4	unknown	Nakhon Sawan		Wat Thai Mai, Koei Chai District		
5	Nakhon Pathom	Nakhon Pathom		National Museum, Bangkok	94	
6	Si Thep	Petchabun		Newark Museum	114.8	
7	Si Thep	Petchabun		Si Thep District Offices	178	
8	Si Thep	Petchabun		Private collection, Bangkok		
9	Si Thep	Petchabun		Private collection, Bangkok		
10	unknown	unknown		Musee Guimet, paris	160	
11	unknown	Nakhon Ratchasima		Wat Khlon Khwang, Sung Noen District	150	
12	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	104	
13	Nakhon Pathom	Nakhon Pathom		National Museum, Bangkok	195	
14	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	103	
15	Kok Phra	Nakhon Pathom		Kok Phra, Tambon Don Yai Hom, Muang District		
16	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	65	
17	unknown	unknown		National Museum, U-Thong	77	
18	unknown	Prachinburi		Kok Pip District Office		
19	unknown	Surat Thani		Wat Barommathat, Tambon Tung, Chaiya District	28	

(continued)

**Table C.1. Continued**

Chakra No	Site	Province	Intra-site Location	Current Location	Dia. (cm)	Notes
20	unknown	unknown		unknown	99	
21	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	67	
22	Nakhon Pathom	Nakhon Pathom		National Museum, Bangkok	72	
23	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	88	
24	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	68	
25	unknown	unknown		Suan Pakkad Palace, Bangkok	65	
26	Dong Si Mahasot	Prachinburi		National Museum, Prachinburi	78	original location uncertain, may be from Aranyaprathet
27	Nakhon Pathom	Nakhon Pathom	Phra Pathom Chedi	National Museum, Songkhla	65	
28	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom		Brown noted it may be a modern replica
29	Ku Bua	Ratchaburi		Wat Thong Chedi		current location uncertain
30	Nakhon Pathom	Nakhon Pathom	Phra Pathom Chedi	National Museum, Bangkok	104	
31	Nakhon Pathom	Nakhon Pathom		National Museum, Bangkok	90	
32	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom		
33	unknown	unknown		Somdet Phra Narai National Museum, Lopburi	32	current location uncertain, listed in Boisselier 961
34	Nakhon Pathom	Nakhon Pathom	Phra Pathom Chedi	National Museum, Phra Pathom Chedi, Nakhon Pathom	96	

(continued)



**Table C.1.** Continued

Chakra No	Site	Province	Intra-site Location	Current Location	Dia. (cm)	Notes
35	Kamphaeng Saen	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	67	
36	Nakhon Pathom	Nakhon Pathom	Phra Pathom Chedi	National Museum, Phra Pathom Chedi, Nakhon Pathom	77	
37	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom		
38	Yarang	Pattani				unusual form
39	Ku Muang Inburi	Singburi		Wat Bot, Inburi Kao		unusual form
40	Nakhon Pathom	Nakhon Pathom		National Museum, Phra Pathom Chedi, Nakhon Pathom	42	unusual form
41	Si Thep	Petchabun		Ramkhamhaeng National Museum, Sukhothai	26	
42	Nakhon Si Thammarat	Nakhon Si Thammarat		Nakhon Si Thammarat National Museum	19	terracotta
NA	Ban Nong Prong	Petchaburi				in Vallibhotama 1991
NA	Muang Sema	Sung Noen	~500 m outside site enclosure	Wat at reclining buddha		
NA	U-Thapao	Chainat	1.8 km outside site enclosure with a circular brick monument	unknown		in Wilaikeao (1991)

## APPENDIX D

### **KSAP Site Datum, Coordinate System and Designations**

#### **Coordinate System**

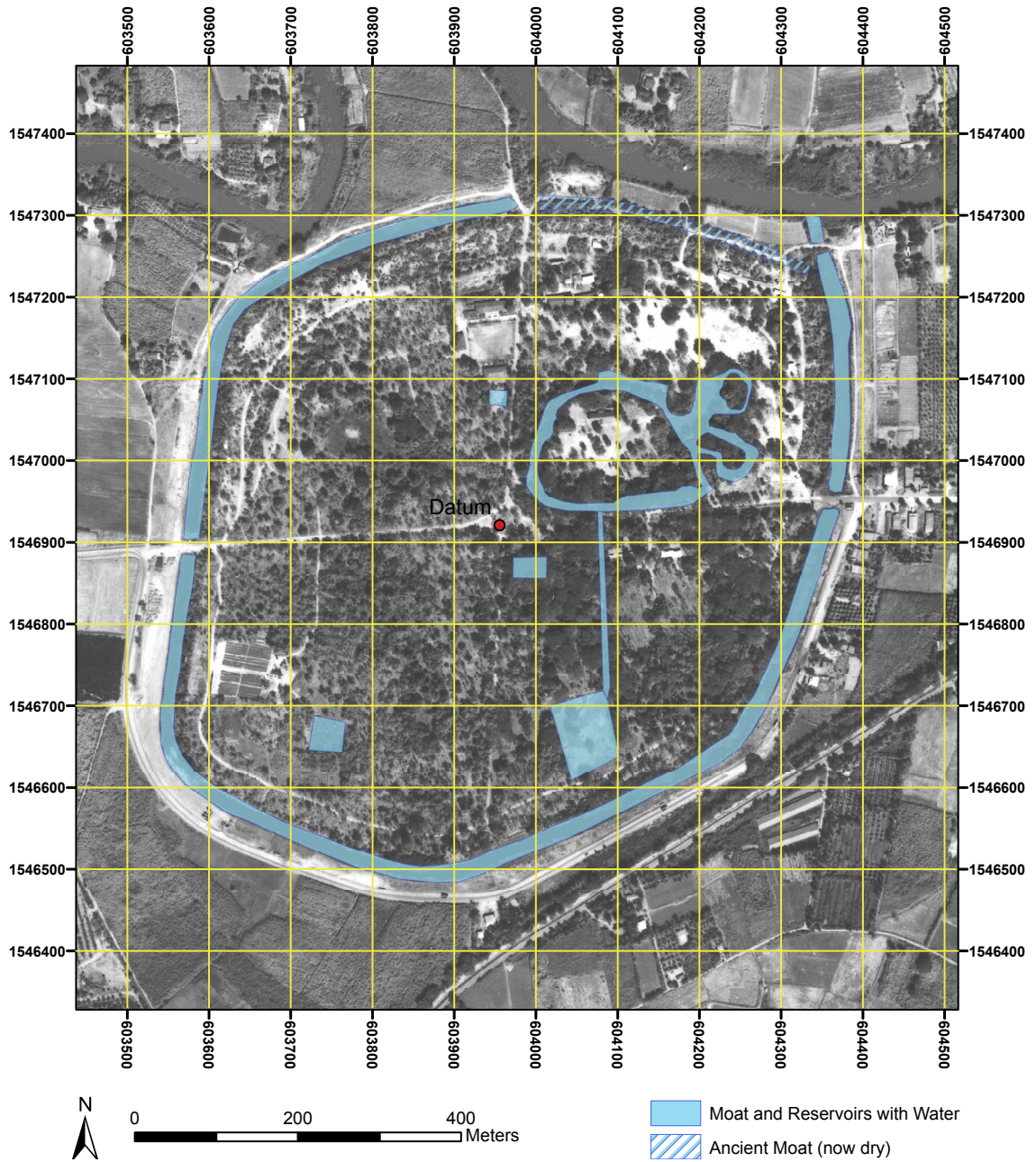
The KSAP site grid uses the Universal Transverse Mercator Zone 47N (UTM47N) coordinate system (Fig. D.1). The use of this system allowed locations for survey and auger coring to be quickly located in the field using a handheld GPS. Since this coordinate system is based on meters the grid locations could also be mapped on the ground with the total station and measuring tape.

Excavation units were also located on this grid, but to expedite record keeping on artifact bags and field forms the first three UTM values were omitted since they were the same across the site (i.e., E 0603971.50 was recorded as E 3971.50, and N 1546923.5 was recorded as N 6923.5). These abbreviated coordinates are the ones used in Appendix H.

#### **Datum**

Due to the need for more stable and accurate readings than could be provided by the handheld GPS, a site datum was established near the site center for use with the total station. The datum is located on the corner of the rectangular planter built in to the southwest corner of the flagpole monument (Figs. D.1 and D.2). The datum point is located 5 cm in from the western edge and 5 cm in from southern edge of the southwest corner of the top of the planter (Fig. D.3). The datum point is 25 cm above ground surface. Handheld GPS readings were taken for this point over the course of three days and then averaged to set its location within the UTM47N coordinate system.

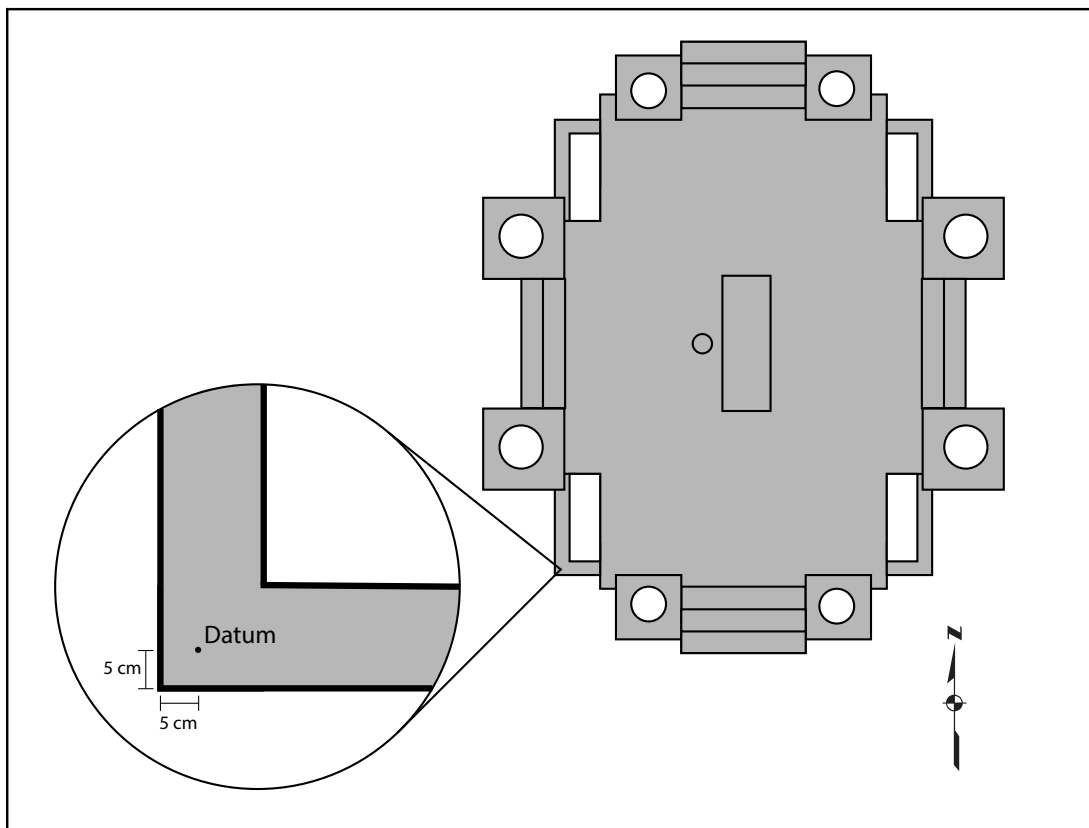
The elevation of the datum was arbitrarily set at 100 m. The actual elevation of this location is approximately around 12 meters above sea level. The largest scale



**Figure D.1.** Map of Kamphaeng Saen showing the UTM47N coordinate system grid and the location of the datum at the flagpole monument.



**Figure D.2.** Location of the datum point on the southwest corner of the flagpole monument at the center of Kamphaeng Saen (view northeast). In the inset photo the tip of the pencil is at the datum point.



**Figure D.3.** Schematic plan view of the flagpole monument with enlargement showing datum location. Not to exact scale.

topographic maps produced by the Royal Thai Survey Department that were available to me for this area were at a scale of 1:50,000 and did not provide fine enough resolution elevations for the area of the site. A 300 m horizontal resolution digital elevation model (DEM) of Thailand developed by Dr. Marc Souris (Institut de recherche pour le développement), indicates that the elevation of the interior of the site is between 8 and 12 meters above sea level. Google Earth software gives elevations between 11 and 17 meters above sea level for the same area.

The datum's coordinates are:

UTM47N  
E 0603961.00 m  
N 1546923.00 m  
Elev. 100.00 m

This datum was used to set the grid for the total station, which was then used for the topographic survey and to locate the excavation units and all point provenance artifacts during excavation. Several subdata were also established using metal stakes, but within several months of the project's completion had moved after heavy rains or were removed by curious visitors.

### **Field Designations**

The following terms and abbreviations were used during the field work and appear throughout these appendices, as well as on the field forms and artifact bags.

### **Excavation Levels, Strata and Features**

The test units were excavated in levels that followed the natural stratigraphy and stopped at natural breaks or 10 cm, whichever came first. These levels were numbered sequentially as they were excavated. Adjoining levels that formed the same context were designated as a stratum. Special contexts (e.g., pits) that were not fill or surfaces were designated as features.



**PD: Provenance Designation**

During the excavations all unique excavated contexts (Levels and features) were given a unique provenance designation (PD) number that was used on all documentation and collections associated with the context (see Appendix H). This system is adapted from the Arizona State Museum's research program at Homol'ovi State Park, AZ.

**FC: Field Collection Code**

All artifacts from a given PD were given FC designations for field recording and laboratory inventory. These codes were as follows:

- 1 bulk ceramics
- 2 animal bones
- 3 shell
- 4 iron slag
- 5 metal objects
- 6 ground stone
- 7 fired clay
- 8 brick
- 9 charcoal
- 10 flotation sample
- 11 pollen sample
- ≥12 other or point provenanced objects

**AC: Auger Core**

Each location selected for auger coring and a 2 m dog chain surface collection was given a unique AC number (see Appendix F).

**LF: Landscape Feature**

All mounds, reservoirs, canals and surface artifact scatters identified during the pedestrian survey of the site interior were given unique LF numbers (see Appendix E).

**SC: Surface Collection**

For landscape features (LF) with surface artifact scatters that were too large to be completely collected one or more 2 m radius dog chain surface collection units

were used to sample the scatter. These individual surface collections (SC) would then be ascribed to a single landscape feature (LF).

## APPENDIX E

### Interior Survey Landscape Features

During the survey of the area enclosed by the moat and earthen wall at Kamphaeng Saen, landscape features (e.g., mounds, reservoirs, canals) and surface artifacts were systematically mapped, described, and, in cases where artifacts were present, collected. Each of these features was given a unique landscape feature (LF) identification number. This appendix presents a table summarizing these features.

The most common type of feature we identified were mounds, which in most cases were made of earth. A few mounds were clearly the product of modern activities such as recent canal excavation, or had modern materials embedded in them; I designated these mounds as “modern mounds”. Many of the other mounds may have also been recent constructions, but there was no clear evidence to conclusively date them. It was unclear if any of the mounds dated to the protohistoric occupation of the site. In Table E.1, I provide estimates of the height and circumference of each mound; since some of the mounds had irregular ground plans, circumference provided a better measure of their size than diameter. The mounds had a range of different forms, which I list in the “Mound Type” column. “Conical” mounds generally had a circular base that rose to a relatively small and pointed top, giving their cross-section a conical shape; “round” mounds also usually had circular bases but had larger rounded tops. “Row” mounds had bases that were much longer than they were wide, and generally had a rounded top. I list the row mounds by their lengthwise cardinal orientation. Some of the row mounds were likely the result of field and paddy construction pre-dating the mid-twentieth century.

Another common group of features we documented were recently dug pits. The backdirt of these features occasionally contained protohistoric artifacts, and provided

one indicator of the distribution of sub-surface materials across the site. I provide the depth of the pits as a negative height in Table E.1.

For all of the documented features I also note the presence or absence of surface artifacts and architectural debris. Surface artifacts were exclusively earthenware ceramics with the exception of a stone grinder found in LF 484. In most cases all of the surface materials were collected, but in a few cases the ceramic scatter was too large to reasonably collect all materials. In these cases, two meter radius surface collection units were used to sample the scatter. These collection units have been listed after the landscape feature and designated as "SC" (surface collections). I list the contents and areas of the surface collections in Table E.2.

The architectural debris identified in the survey included modern bricks and concrete or plaster, as well as eroded bricks, which may date to the protohistoric, but the fragments were too small or eroded to be conclusively dated. Other materials we documented that may have been used for construction included laterite chunks and cut stone. Like the eroded brick, these materials cannot be conclusively dated to the protohistoric occupation of the site.

**Table E.1.** Landscape features identified in the survey inside the settlement enclosure

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF001	603942	1546945	mound	1.3	19.0		row (E-W)	No	None	
LF002	603878	1546931	mound	1.9	49.0		conical	No	None	
LF003	603848	1546934	mound	1.6	39.0		conical	No	None	
LF004	603842	1546948	modern mound	0.7	23.0		row (N-S)	No	modern brick or concrete	
LF005	603830	1546925	modern mound	1.0	14.0		conical	No	modern brick or concrete	
LF006	603826	1546946	modern mound	1.5	59.0		irregular	No	modern brick or concrete	
LF007	603809	1546940	modern mound	0.5	53.0		irregular	No	None	
LF008	603772	1546947	mound	1.7	56.0		round	No	None	
LF009	603747	1546931	mound	2.2	50.0		conical	No	None	
LF010	603667	1546926	mound	2.5	48.0		conical	No	modern brick or concrete	
LF011	603642	1546932	mound	0.7	10.0		conical	No	None	
LF012	603623	1546943	mound	0.6	14.0		round	No	None	
LF013	603618	1546963	mound	1.2	31.0		conical	No	None	
LF014	603662	1546953	mound	1.6	44.0		conical	No	None	
LF015	603670	1546965	mound	0.6	65.0		irregular	No	None	
LF016	603711	1546951	mound	2.0	43.0		conical	No	None	
LF017	603832	1546960	mound	2.8	39.0		conical	No	modern brick or concrete	
LF018	603846	1546956	mound	1.2	33.0		row (NE-SW)	No	modern brick or concrete	

(continued)



Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF019	603855	1546951	mound	1.5	28.0		conical	No	modern brick or concrete	
LF020	603875	1546949	mound	0.6	8.0		conical	No	None	
LF021	603877	1546958	mound	0.5	15.0		row	No	None	
LF022	603883	1546964	mound	1.6	26.0		conical	No	None	
LF023	603895	1546963	mound	0.5	29.0		irregular	No	None	
LF024	603913	1546953	mound	0.8	19.0		conical	No	None	
LF025	603923	1546964	mound	1.5	24.0		conical	No	None	
LF026	603921	1546971	mound	0.4	26.0		conical	No	None	
LF027	603931	1546955	mound	1.4	28.0		conical	No	None	
LF028	603947	1546957	mound	1.2	24.0		conical	No	None	
LF029	603897	1546978	mound	3.2	48.0		conical	No	None	
LF030	603846	1546971	mound	2.1	45.0		conical	No	modern brick or concrete	
LF031	603841	1546972	modern mound	0.3	25.0		row (NE-SW)	No	modern brick or concrete	mound made of modern brick rubble
LF032	603833	1546975	mound	0.4	19.0		row (NE-SW)	No	modern brick or concrete	modern bricks around base of earthen mound
LF033	603827	1546977	mound	0.4	20.0		row (N-S)	No	modern brick or concrete	
LF034	603816	1546980	mound	0.7	24.0		round	No	modern brick or concrete	
LF035	603789	1546974	mound	3.2	51.0		conical	No	None	
LF036	603763	1546964	mound	0.5	11.0		round	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF037	603754	1546977	mound	3.2	46.0		conical	No	None	
LF038	603742	1546959	mound	0.4	10.0		row	No	None	
LF039	603691	1546974	mound	0.5	25.0		irregular	No	None	
LF040	603651	1546984	mound	1.2	16.0		conical	No	None	connects to LF 041
LF041	603650	1546981	modern mound	0.4	14.0		row	No	None	runs parallel to road, probably result of road construction
LF042	603650	1546972	mound	0.4	15.0		round	No	None	
LF043	603653	1546988	mound	1.2	8.0		conical	No	None	
LF044	603691	1546989	mound	1.8	84.0		conical	No	None	
LF045	603787	1547001	mound	0.5	22.0		irregular	No	None	probably result of paddy clearance to the N
LF046	603831	1546987	mound	0.2	25.0		irregular	No	modern brick or concrete	
LF047	603857	1546995	mound	3.2	38.0		conical	No	None	
LF048	603826	1547014	canal				NA	No	None	
LF049	603863	1546999	check dam				round	No	None	
LF050	603874	1546993	mound	0.4	20.0		conical	No	None	
LF051	603954	1547008	mound	3.0	51.0		conical	No	None	
LF052	603933	1547015	mound	2.0	44.0		conical	No	None	concrete scout camp sculpture on NE side
LF053	603901	1547011	mound	1.8	39.0		conical	No	None	
LF054	603890	1547022	mound	1.7	26.0		conical	No	None	
LF055	603863	1547030	mound	1.6	36.0		conical	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF056	603852	1547019	mound	1.2	18.0		conical	No	None	
LF057	603825	1547003	field				NA	Yes	None	Approximately 50 x 85 m
LF058	603740	1547022	baray				NA	No	None	
LF059	603745	1547027	mound	1.0	42.0		row (N-S)	No	None	baray backdirt mound; beer bottle embedded in north end
LF060	603738	1547036	mound	0.8	32.0		row (E-W)	No	None	baray backdirt mound
LF061	603733	1547028	mound	0.8	43.0		row (N-S)	No	None	
LF062	603740	1547017	mound	0.5	26.3		row (E-W)	No	None	
LF063	603727	1547011	mound	4.0	50.0		conical	No	None	
LF064	603706	1547014	mound	1.1	34.0		row (E-W)	No	None	
LF065	603688	1547029	sherd scatter	0	20		NA	Yes	None	
LF066	603663	1547035	mound	0.6	15.0		row (N-S)	No	None	
LF067	603663	1547022	mound	0.4	12.0		irregular	No	None	
LF068	603662	1547012	mound	0.4	8.0		round	No	None	
LF069	603648	1547029	mound	0.7	17.0		irregular	No	None	
LF070	603666	1547046	mound	0.6	17.0		row (N-S)	No	None	
LF071	603668	1547049	mound	0.4	12.0		irregular	No	None	
LF072	603694	1547037	mound	2.4	29.0		conical	No	None	
LF073	603861	1547033	mound	1.8	26.0		conical	No	None	
LF074	603887	1547029	ditch				NA	No	None	
LF075	603962	1546989	canal				NA	No	None	
LF076	603959	1547011	check dam				NA	No	None	
LF077	603967	1547066	baray				NA	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF078	603941	1547049	mound	1.9	34.0		conical	No	None	
LF079	603888	1547059	mound	0.6	15.0		row (N-S)	No	None	
LF080	603872	1547055	mound	1.7	30.0		row (E-W)	No	None	
LF081	603866	1547066	mound	1.8	20.0		conical	No	None	
LF082	603852	1547064	mound	1.6	13.0		conical	No	None	
LF083	603835	1547056	mound	3.5	32.0		conical	No	None	
LF084	603718	1547059	mound	2.5	33.0		conical	No	None	
LF085	603667	1547049	mound	0.5	4.0		conical	No	None	
LF086	603929	1547069	mound	1.2	18.0		conical	No	None	
LF087	603940	1547089	mound	1.7	28.0		conical	No	None	
LF088	603887	1547122	pit	-2.0		4.0	NA	Yes	None	Dump west of school; earthenware sherds in backdirt (LF156, and LF157)
LF089	603683	1547085	mound	1.6	8.3		conical	No	None	
LF090	603681	1547068	mound	0.4	38.0		row (N-S)	No	None	
LF091	603705	1547081	mound	0.5	7.0		conical	No	None	
LF092	603722	1547080	mound	0.6	8.0		conical	No	None	
LF093	603740	1547077	mound	2.0	32.0		round	No	None	
LF094	603756	1547085	mound	0.6	38.0		irregular	No	eroded brick	
LF095	603785	1547081	mound	3.2	29.0		conical	No	None	
LF096	603808	1547086	mound	1.7	18.0		conical	No	None	
LF097	603845	1547078	mound	0.5	11.0		conical	No	None	
LF098	603903	1547082	mound	1.6	23.0		conical	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF099	603970	1547098	garden				NA	Yes	None	Garden south of school
LF100	603899	1547091	mound	0.5	8.0		round	No	None	
LF101	603877	1547091	mound	1.7	32.0		round	No	None	
LF102	603841	1547089	mound	0.7	15.0		conical	No	None	
LF103	603836	1547092	mound	2.1	36.0		round	No	None	
LF104	603789	1547104	mound	1.6	46.0		round	No	None	
LF105	603784	1547104	mound	0.4	13.0		round	No	None	
LF106	603781	1547105	mound	0.6	10.0		conical	No	None	
LF107	603761	1547100	mound	0.6	12.0		conical	No	None	
LF108	603744	1547099	pit	-0.2		1.5	NA	Yes	None	
LF109	603773	1547084	pit	-0.2		1.3	NA	No		
LF110	603768	1547085	pit	-0.2		1.3	NA	Yes	None	a few small earthenware sherds (<2 cm); not collected
LF111	603761	1547089	pit	-0.2		1.2	NA	No	None	
LF112	603760	1547090	pit	-0.2		1.0	NA	No		
LF113	603760	1547100	pit	-0.3		1.8	NA	No		
LF114	603743	1547106	pit	-0.3		1.3	NA	Yes	None	
LF115	603743	1547105	pit	-0.2		1.3	NA	No		
LF116	603738	1547099	pit	-0.3		1.3	NA	No		
LF117	603746	1547104	mound	0.5	51.0		irregular	No	eroded brick	
LF118	603755	1547112	pit	-0.2		1.2	NA	No		
LF119	603736	1547096	mound	0.5	20.0		irregular	No	None	
LF120	603714	1547107	mound	1.9	30.0		conical	No	None	

(continued)



**Table E.1.** continued

ID	Eastings (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF121	603704	1547104	pit	-0.2		1.2	NA	No		
LF122	603689	1547101	pit	-0.4		1.5	NA	No		
LF123	603686	1547107	mound	0.8	9.0		conical	No	None	
LF124	603712	1547128	mound	0.7	10.0		conical	No	None	
LF125	603712	1547126	pit	-0.2		1.0	NA	No		
LF126	603719	1547134	pit	-0.3		1.0	NA	No		
LF127	603720	1547138	mound	0.9	6.0		conical	No	None	
LF128	603736	1547121	pit	-0.3		1.3	NA	No	None	
LF129	603741	1547127	modern mound	0.7	43.0		irregular	No	None	
LF130	603740	1547127	pit	-0.3		0.5	NA	No	None	
LF131	603754	1547124	mound	1.0	13.0		conical	No	None	
LF132	603758	1547133	mound	0.4	11.0		round	No	None	
LF133	603758	1547132	pit	-0.3		1.0	NA	No		
LF134	603760	1547134	mound	0.4	16.0		round	No	None	
LF135	603744	1547144	mound	0.4	27.0		irregular	No	None	
LF136	603743	1547144	pit	-0.2		0.8	NA	No	None	
LF137	603745	1547141	pit	-0.2		0.9	NA	No	None	
LF138	603742	1547144	pit	-0.2		1.6	NA	No	None	
LF139	603737	1547154	mound	1.1	5.0		conical	No	None	
LF140	603756	1547165	mound	0.7	13.0		round	No	None	
LF141	603753	1547163	pit	-0.2		1.0	NA	No	None	
LF142	603749	1547167	pit	-0.4		1.4	NA	No		
LF143	603774	1547123	mound	0.4	12.0		round	No	None	
LF144	603779	1547117	pit	-0.2		1.3	NA	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF145	603784	1547131	pit	-0.2		1.4	NA	No	None	
LF146	603772	1547153	mound	1.8	35.0		conical	No	None	
LF147	603766	1547167	mound	0.4	18.0		row (N-S)	No	modern brick or concrete	
LF148	603773	1547171	mound	0.3	7.0		irregular	No	None	
LF149	603777	1547173	mound	0.6	5.0		conical	No	None	
LF150	603782	1547140	mound	0.3	5.0		round	No	None	
LF151	603815	1547131	mound	0.9	7.0		conical	No	None	
LF152	603851	1547116	mound	0.4	15.0		irregular	No	None	
LF153	603858	1547117	mound	2.2	28.0		conical	No	modern brick or concrete	
LF154	603887	1547113	modern mound	0.9	37.0		irregular	No	None	backdirt from school dump pit
LF155	603894	1547120	modern mound	0.8	19.0		irregular	No	None	backdirt from school dump pit
LF156	603885	1547124	modern mound	1.4	29.0		row (N-S)	Yes	eroded brick	backdirt from school dump pit
LF157	603890	1547127	modern mound	1.7	18.0		conical	Yes	None	backdirt from school dump pit
LF158	603893	1547140	pit	-0.2		1.5	NA	No	None	rectangular pit oriented E-W
LF159	603888	1547151	mound	0.4	4.0		conical	No	None	
LF160	603874	1547152	pit	-0.3		2.5	NA	No		rectangular pit oriented N-S
LF161	603858	1547147	pit	-0.2		1.5	NA	Yes	eroded brick	
LF162	603865	1547146	mound	0.5	3.0		conical	No	None	

(continued)

**Table E.1.** continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF163	603845	1547147	pit	-0.2		1.2	NA	No		
LF164	603843	1547137	mound	1.4	31.0		round	No	eroded brick	
LF165	603833	1547133	mound	0.5	10.0		round	No	None	
LF166	603829	1547144	mound	1.6	33.0		conical	No	None	
LF167	603810	1547150	mound	0.8	23.0		irregular	No	None	
LF168	603809	1547156	mound	0.5	12.0		row (E-W)	No	None	probably result of pavilion construction
LF169	603808	1547158	mound	1.6	22.0		conical	No	None	
LF170	603803	1547160	mound	0.4	17.0		irregular	No	None	
LF171	603819	1547170	modern mound	0.3	17.0		row (N-S)	Yes	eroded brick	backdirt from pavilion septic pit
LF172	603808	1547183	mound	1.6	27.0		row (N-S)	No	None	probably result of pavilion construction
LF173	603814	1547188	mound	0.6	15.0		irregular	No	None	
LF174	603844	1547189	mound	0.5	17.0		round	No	None	
LF175	603849	1547190	mound	1.5	27.0		conical	No	None	
LF176	603872	1547191	mound	0.5	25.0		irregular	No	None	
LF177	603866	1547187	pit	-0.2		0.8	NA	No	None	
LF178	603863	1547190	pit	-0.2		1.0	NA	No		
LF179	603876	1547201	mound	2.5	30.0		conical	No	None	
LF180	603877	1547185	mound	1.1	18.0		round	No	None	
LF181	603857	1547162	mound	0.8	20.0		round	No	None	
LF182	603859	1547158	pit	-0.2		1.0	NA	No	None	
LF183	603853	1547158	mound	0.3	15.0		round	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF184	603874	1547159	depression	-0.2		2.3	NA	No		
LF185	603879	1547162	mound	0.4	10.0		row (E-W)	No	None	
LF186	603884	1547171	mound	1.5	12.0		conical	No	modern brick or concrete	
LF187	603886	1547170	mound	2.0	28.0		conical	No	None	
LF188	603880	1547173	pit	-0.2		0.7	NA	No	None	
LF189	603881	1547174	pit	-0.2		1.0	NA	No	None	
LF190	603898	1547190	modern mound	1.0	36.0		round	No	modern brick or concrete	concrete rubble and brick from school construction
LF191	603895	1547212	mound	1.6	12.0		conical	No	None	
LF192	603893	1547207	mound	0.5	12.0		row (N-S)	No	None	
LF193	603897	1547203	mound	0.7	9.0		conical	No	None	
LF194	603955	1546929	eroded exposure	0.0		4.0	NA	No	eroded brick	
LF195	603968	1546937	mound	0.7	7.0		conical	No	None	ant hill
LF196	603977	1546929	mound	0.5	4.0		conical	No	None	ant hill
LF197	603977	1546928	mound	0.5	6.0		conical	No	None	ant hill
LF198	603936	1546886	modern mound	0.7	81.0		irregular	No	modern brick or concrete	flat mound with concrete building foundation
LF199	603927	1546914	mound	0.8	21.0		row (NW-SE)	No	None	
LF200	603899	1546909	mound	0.3	16.0		irregular	No	None	
LF201	603882	1546911	mound	0.8	12.0		conical	No	None	
LF202	603847	1546904	mound	0.4	14.0		row (N-S)	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF203	603843	1546907	mound	0.6	13.0		row (E-W)	No	None	
LF204	603843	1546907	mound	1.8	19.0		conical	No	None	
LF205	603816	1546899	mound	1.8	26.0		conical	No	None	
LF206	603812	1546906	pit	-0.3		0.8	NA	No	None	
LF207	603807	1546905	pit	-0.2		2.0	NA	No	None	
LF208	603768	1546904	mound	1.5	18.0		conical	No	None	
LF209	603763	1546901	pit	-0.3		1.5	NA	No	None	
LF210	603766	1546898	pit	-0.3		1.5	NA	No	None	
LF211	603758	1546902	pit	-0.3		1.3	NA	Yes	None	
LF212	603748	1546898	mound	0.5	22.0		irregular	No	None	
LF213	603748	1546888	mound	2.3	37.0		conical	No	None	
LF214	603670	1546885	pit	-0.2		0.8	NA	No	None	
LF215	603673	1546886	pit	-0.2		0.8	NA	No	None	
LF216	603675	1546888	pit	-0.5		1.5	NA	Yes	None	
LF217	603675	1546887	mound	0.5	4.0		round	No	None	
LF218	603682	1546890	mound	0.8	2.0		conical	No	None	
LF219	603680	1546884	pit	-0.3		1.3	NA	No	None	
LF220	603681	1546879	pit	-0.2		0.8	NA	No	None	
LF221	603698	1546878	mound	0.3	6.0		round	No	None	
LF222	603691	1546895	mound	0.4	6.0		round	No	None	
LF223	603697	1546892	mound	0.4	6.0		round	No	None	
LF224	603709	1546882	mound	0.5	13.0		row (n-s)	No	None	
LF225	603720	1546893	mound	2.1	25.0		conical	No	None	
LF226	603729	1546879	mound	0.4	10.0		round	No	None	

(continued)



Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF227	603762	1546884	mound	0.5	4.0		round	No	None	
LF228	603766	1546892	mound	0.2	3.8		NA	No	None	
LF229	603802	1546891	mound	1.6	27.0		conical	No	None	
LF230	603807	1546886	mound	0.6	17.0		row (E-W)	No	None	
LF231	603810	1546882	mound	1.8	31.0		conical	No	None	
LF232	603855	1546880	mound	0.4	4.0		round	No	None	
LF233	603858	1546889	pit	-0.2		0.8	NA	No	None	
LF234	603876	1546894	mound	1.1	23.0		conical	No	modern brick or concrete	
LF235	603875	1546897	pit	-0.3		0.8	NA	No	laterite fragments	
LF236	603903	1546889	mound	1.5	18.0		row (E-W)	No	None	
LF237	603903	1546866	mound	0.7	14.0		round	No	None	
LF238	603869	1546876	pit	-0.4		0.8	NA	No	None	no backdirt
LF239	603866	1546873	mound	1.3	3.0		conical	No	None	
LF240	603826	1546877	mound	1.0	5.0		conical	No	None	
LF241	603773	1546872	pit	-0.3		1.0	NA	No	None	minimal backdirt
LF242	603765	1546874	mound	0.9	6.0		conical	No	None	
LF243	603749	1546880	mound	0.4	9.0		round	No	None	
LF244	603746	1546882	modern mound	0.4	2.4		NA	No	None	no backdirt
LF245	603686	1546860	mound	1.8	19.0		conical	No	None	
LF246	603674	1546878	mound	0.6	11.0		round	No	None	
LF247	603637	1546865	mound	0.5	8.0		conical	No	None	
LF248	603626	1546873	mound	0.5	19.0		row (N-S)	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF249	603686	1546832	mound	1.0	5.0		conical	No	None	
LF250	603686	1546827	mound	1.5	4.0		conical	No	None	
LF251	603705	1546847	mound	1.1	8.0		conical	No	None	
LF252	603755	1546833	mound	1.0	17.0		row (N-S)	No	None	
LF253	603765	1546840	mound	2.1	24.0		conical	No	None	
LF254	603810	1546822	mound	0.3	8.0		round	No	None	
LF255	603805	1546835	mound	1.8	34.0		conical	No	None	connect with LF 256 via low saddle
LF256	603804	1546844	mound	1.7	29.0		conical	No	None	connect with LF 255 via low saddle
LF257	603815	1546841	mound	1.9	36.0		conical	No	None	
LF258	603821	1546856	mound	1.6	24.0		conical	No	None	
LF259	603845	1546850	mound	2.5	34.0		conical	No	None	
LF260	603863	1546826	mound	1.9	36.0		conical	No	None	
LF261	603888	1546845	mound	1.9	46.0		irregular	No	eroded brick	
LF262	603933	1546847	mound	1.6	32.0		round	No	modern brick or concrete	two recent trash pits dug into mound
LF263	603971	1546861	Canal	-0.5			NA	No	None	
LF264	603936	1546818	mound	0.5	5.0		conical	No	None	
LF265	603930	1546822	mound	0.6	3.0		conical	No	None	
LF266	603824	1546812	mound	1.5	10.0		conical	No	None	very dense brush, difficult to assess
LF267	603818	1546804	mound	2.6	30.0		conical	No	None	very dense brush, difficult to assess
LF268	603670	1546822	pit	-0.3		1.3	NA	No	eroded brick	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF269	603662	1546821	mound	1.1	16.0		round	No	None	
LF270	603835	1546786	pit	-0.3		2.0	NA	No	None	
LF271	603835	1546789	modern mound	0.4	7.9		round	No	None	backdirt from pit LF270
LF272	603842	1546789	mound	1.0	4.0		conical	No	None	anthill
LF273	603837	1546786	pit	-0.3		2.0	NA	No	None	
LF274	603839	1546779	mound	0.7	20.8		round	No	None	
LF275	603777	1546813	pit	-0.4		1.5	NA	No	None	
LF276	603750	1546806	mound	1.6	33.0		round	No	None	
LF277	603695	1546798	mound	0.4	30.0		irregular	No	eroded brick and laterite fragments	
LF278	603681	1546789	mound	1.7	41.7		round	No	None	no black plastic, but connects with LF284
LF279	603617	1546816	pit	-0.4		1.0	NA	No	None	
LF280	603609	1546787	mound	1.3	10.4		conical	No	None	
LF281	603617	1546780	modern mound	0.6	34.0		row (E-W)	No	None	black plastic emerging from top of mound; probably result of field clearance to south; 15 m long x 2 m wide
LF282	603637	1546784	modern mound	0.6	43.0		irregular	No	None	black plastic emerging from top of mound; series of low mounds and pits; probably result of field clearance to S;

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF283	603663	1546784	modern mound	0.6	30.0		row (E-W)	No	None	black plastic emerging from top of mound; probably result of field clearance to S
LF284	603668	1546785	modern mound	0.6	18.2		irregular	No	None	black plastic emerging from top of mound; probably result of field clearance to S; connects with LF283
LF285	603672	1546767	modern mound	0.8	28.0		row (E-W)	No	None	black plastic emerging from top of mound; probably result of field clearance to S
LF286	603700	1546778	mound	1.4	5.0		conical	No	None	anthill
LF287	603725	1546785	mound	1.0	7.0		conical	No	None	anthill
LF288	603740	1546774	mound	0.5	52.0		row (E-W)	No	None	mound is approx. 25 m long and 2m wide
LF289	603773	1546788	mound	2.0	31.4		conical	No	None	
LF290	603787	1546764	mound	2.2	39.1		conical	No	None	
LF291	603803	1546766	mound	1.9	26.1		irregular	No	eroded brick and cut stone	connects with long row mound to N
LF292	603801	1546768	pit	-0.4		1.2	NA	Yes	None	
LF293	603816	1546772	mound	0.6	82.0		row (E-W)	No	None	long (37 m x 4 m) row mound connected with LF291, LF294, LF295 and LF297; coordinates are for W end

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF294	603830	1546768	mound	0.8	18.2		round	No	None	thickening and rise in LF 293
LF295	603833	1546768	mound	0.7	18.2		round	No	None	thickening and rise in LF 293
LF296	603837	1546775	mound	0.7	23.5		round	No	None	
LF297	603850	1546758	mound	1.8	26.1		conical	No	None	end of long row mound (LF293); difficult to tell due to dense vegetation
LF298	603855	1546738	mound	2.2	28.7		conical	No	None	
LF299	603935	1546783	mound	2.1	35.0		conical	No	None	
LF300	603938	1546793	stone				NA	No	None	cut stone (0.4 x 0.3 x 0.2 m)
LF301	603919	1546793	mound	0.6	24.0		irregular	No	None	
LF302	603878	1546779	mound	3.0	39.0		conical	No	None	south edge of mound forms north edge of low elevation area
LF303	603896	1546760	mound	1.6	30.0		round	No	None	west edge of mound forms the east edge of low elevation area
LF304	603892	1546750	mound	2.3	32.0		conical	No	None	west edge of mound forms the east edge of the low elevation area
LF305	603928	1546760	mound	1.4	17.0		conical	No	None	
LF306	603939	1546741	laterite chunk				NA	No	None	chunk is .07 x 0.1 x .05 m; in a small pile of ash

(continued)



Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF307	603944	1546740	stone				NA	No	None	located 3 m from road
LF308	603622	1546773	sherd scatter	0	33.0		NA	Yes	None	sherds in a compacted exposure of earth along north edge of field
LF309	603604	1546771	pit	-0.4		0.8	NA	No	None	hole for tree planting but no tree
LF310	603601	1546765	pit	-0.4		1.3	NA	No	None	hole for tree planting but no tree
LF311	603602	1546759	pit	-0.3		1.0	NA	No	None	hole for tree planting but no tree
LF312	603602	1546754	pit	-0.3		0.8	NA	No	None	hole for tree planting but no tree
LF313	603601	1546739	pit	-0.4		1.0	NA	No	None	hole for tree planting but no tree
LF314	603600	1546730	pit	-0.5		1.5	NA	No	None	hole for tree planting but no tree
LF315	603600	1546727	pit	-0.3		1.3	NA	No	None	hole for tree planting but no tree
LF316	603597	1546723	pit	-0.3		1.3	NA	No	None	hole for tree planting but no tree
LF317	603692	1546718	mound	1.7	7.9		conical	No	None	
LF318	603715	1546722	mound	0.6	3.0		conical	No	None	
LF319	603706	1546752	mound	1.0	5.0		conical	No	None	
LF320	603714	1546752	mound	0.5	5.0		round	No	None	
LF321	603718	1546731	mound	0.5	6.0		round	No	None	

(continued)

**Table E.1.** continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF322	603746	1546733	mound	1.3	4.0		conical	No	None	
LF323	603889	1546729	mound	1.6	11.0		conical	No	None	
LF324	603897	1546720	mound	1.5	34.0		row (n-s)	No	None	
LF325	603906	1546710	laterite chunk				NA	No	eroded brick and laterite fragments	eroded brick fragments in soil within 0.5 m of laterite frag
LF326	603913	1546700	laterite chunk				NA	No	eroded brick	
LF327	603906	1546697	sherd scatter	0	38		NA	Yes	eroded brick	
LF328	603922	1546729	laterite chunk				NA	No	eroded brick and laterite fragments	eroded brick fragments in soil within 0.5 m of laterite frag
LF329	603887	1546693	mound	2.0	23.5		row (NW-SE)	No	None	
LF330	603879	1546700	mound	1.8	40.0		row (N-S)	Yes	None	a few small earthenware sherds (<2 cm); not collected
LF331	603881	1546712	mound	1.2	22.0		row (E-W)	Yes	None	
LF332	603878	1546709	mound	1.0	14.0		row (N-S)	No	None	
LF333	603874	1546712	reservoir	-1.8	44.0		NA	No	None	
LF333	603873	1546711	reservoir	-1.8	44.0		NA	No	None	
LF333	603874	1546700	reservoir	-1.8	44.0		NA	No	None	
LF333	603876	1546700	reservoir	-1.8	44.0		NA	No	None	
LF334	603848	1546710	mound	2.3	29.0		conical	No	None	
LF335	603731	1547093	pit	-0.3		1.3	NA	Yes	eroded brick	
LF336	603675	1546709	mound	1.1	25.0		irregular	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF337	603615	1546710	mound	1.1	10.0		conical	No	None	
LF338	603837	1546675	mound	2.2	21.0		conical	No	None	
LF339	603866	1546659	mound	2.5	33.0		conical	No	None	
LF340	603891	1546661	mound	0.7	16.0		round	Yes	None	
LF341	603897	1546662	mound	0.7	11.0		round	Yes	eroded brick	
LF342	603908	1546662	mound	2.5	36.5		round	No	eroded brick	
LF343	603925	1546641	mound	1.6	18.8		round	No	None	
LF344	603886	1546649	mound	0.2	24.0		irregular	Yes	eroded brick	
LF345	603866	1546640	mound	1.0	16.5		round	No	eroded brick	
LF346	603855	1546643	mound	1.3	17.0		round	No	None	
LF347	603838	1546643	mound	1.7	27.0		round	No	None	
LF348	603803	1546629	mound	2.5	31.0		conical	No	None	
LF349	603839	1546624	mound	1.0	14.0		round	No	eroded brick	
LF350	603903	1546628	mound	1.0	24.0		round	No	eroded brick	
LF351	603916	1546628	mound	0.7	19.0		row (N-S)	Yes	eroded brick	
LF352	603895	1546614	pit	-0.2		0.8	NA	Yes	None	
LF353	603887	1546608	pit	-0.1		1.5	NA	Yes	None	
LF354	603855	1546610	pit	-0.1		1.6	NA	Yes	None	
LF355	603846	1546607	sherd scatter	0		0.1	NA	Yes	None	
LF356	603798	1546603	mound	0.7	11.5		round	No	None	
LF357	603776	1546617	mound	2.5	32.0		round	No	None	
LF358	603765	1546615	mound	1.3	7.9		conical	No	None	
LF359	603694	1546602	mound	0.7	22.0		row (NE-SW)	No	None	
LF360	603826	1546591	mound	3.0	37.0		conical	No	None	

(continued)

**Table E.1.** continued

ID	Eastings (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF361	603791	1546597	mound	0.5	29.0		row (E-W)	No	None	12 x 2.5 m base
LF362	603786	1546599	mound	0.7	10.0		round	No	None	
LF363	603849	1546597	mound	1.7	28.0		round	No	None	
LF364	603844	1546595	mound	0.7	22.0		row (E-W)	No	None	
LF365	603862	1546594	mound	1.0	15.7		round	No	None	
LF366	603875	1546581	mound	0.7	6.3		conical	No	None	
LF367	603895	1546594	mound	1.7	28.0		round	Yes	None	
LF367/ SC1	603897	1546601	mound	0		4.0	NA	Yes	None	2 m radius surface collection
LF367/ SC2	603901	1546587	mound	0		4.0	NA	Yes	None	2 m radius surface collection
LF368	603911	1546579	mound	2.7	31.0		conical	Yes	None	
LF368/ SC1	603911	1546591	mound	0		4.0	NA	Yes	None	2 m radius surface collection
LF368/ SC2	603906	1546584	mound	0		4.0	NA	Yes	None	2 m radius surface collection
LF368/ SC3	603906	1546578	mound	0		4.0	NA	Yes	None	2 m radius surface collection
LF368/ SC4	603908	1546578	mound	0		4.0	NA	Yes	None	2 m radius surface collection
LF369	604249	1546916	mound	1.0	5.0		conical	No	None	
LF370	604242	1546889	mound	1.5	14.5		round	No	None	
LF371	604220	1546716	mound	0.9	48.0		row (NE-SW)	No	None	
LF372	604220	1546761	mound	0.5	12.0		round	No	None	
LF373	604226	1546802	mound	0.7	9.0		round	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF374	604222	1546776	mound	1.5	10.0		round	No	None	
LF375	604227	1546831	mound	1.0	25.5		row (N-S)	No	None	
LF376	604227	1546852	mound	1.6	19.0		round	No	None	
LF377	604231	1546861	mound	1.5	18.8		round	No	None	
LF378	604229	1546900	mound	1.5	25.1		row (NW-SE)	No	None	
LF379	604216	1546904	modern mound	1.2	31.4		row (N-S)	No	None	
LF380	604209	1546733	mound	1.0	24.0		round	No	None	
LF381	604191	1546721	mound	2.0	15.7		round	No	None	
LF382	604188	1546870	mound	0.5	17.0		round	No	None	contains modern refuse
LF383	604190	1546891	mound	2.0	22.5		round	No	None	contains modern refuse
LF384	604196	1546923	mound	0.3	10.0		round	No	None	
LF385	604164	1546720	mound	0.7	26.0		round	No	None	
LF386	604157	1546704	pit	-0.7		2.0	NA	No	None	square pit 2 x 2 m
LF387	604171	1546701	mound	1.2	23.0		round	No	None	
LF388	604158	1546686	mound	1.0	10.0		conical	No	None	
LF389	604145	1546809	mound	0.6	8.0		round	No	None	
LF390	604134	1546889	mound	0.8	26.5		row (NE-SW)	Yes	None	
LF391	604132	1546754	mound	2.5	15.0		conical	No	None	
LF392	604121	1546725	mound	0.8	13.0		conical	No	None	
LF393	604108	1546696	mound	0.6	7.0		round	No	None	
LF394	604108	1546723	mound	0.8	24.0		round	No	None	

(continued)



Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF395	604097	1546899	mound	1.0	18.5		round	No	None	contains modern refuse
LF396	604056	1546890	modern mound	0.7	31.4		row (E-W)	No	None	from canal construction
LF397	604066	1546889	modern mound	1.5	22.0		round	No	None	from canal construction
LF398	604064	1546869	mound	1.8	15.0		round	No	None	
LF399	604061	1546807	mound	1.6	9.5		round	No	None	
LF400	604042	1546721	mound	0.7	26.5		row (E-W)	No	None	
LF401	604045	1546870	mound	1.1	13.0		round	No	None	
LF402	604048	1546875	mound	1.0	22.0		round	No	None	from canal construction
LF403	604030	1546897	mound	3.0	23.5		conical	No	None	from canal construction
LF404	604011	1546912	pit	-0.2		1.5	NA	No	None	
LF405	604031	1546813	mound	1.3	20.0		round	No	None	
LF406	604034	1546803	mound	0.8	13.0		round	No	None	
LF407	604014	1546768	mound	2.0	20.0		conical	No	None	
LF408	604022	1546746	mound	3.0	29.0		round	No	None	
LF409	604008	1546610	pit	-0.5		2	NA	No	None	
LF410	604008	1546616	mound	0.8	9.0		conical	No	None	
LF411	604003	1546616	pit	-0.4		1.2	NA	No	None	
LF412	604004	1546781	mound	2.0	18.0		conical	No	None	
LF413	603997	1546811	mound	0.8	19.5		round	No	None	

(continued)

Table E.1. continued

ID	Eastings (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF414	604012	1546833	modern mound	1.4	22.0		round	No	None	from canal construction
LF415	604016	1546914	mound	0.5	10.5		round	No	None	
LF416	603980	1546897	mound	3.2	75.4		round	Yes	None	from baray construction?
LF417	603997	1546835	mound	5.0	75.4		round	Yes	None	from baray construction?
LF418	603965	1546838	mound	1.2	17.0		round	No	None	
LF419	603990	1546794	mound	0.5	22.0		round	No	None	
LF420	603996	1546748	mound	1.2	29.5		round	No	None	
LF421	603988	1546720	mound	1.0	22.5		round	No	None	
LF422	603995	1546708	mound	0.8	16.0		round	No	None	
LF423	603977	1546698	mound	1.8	16.0		conical	No	None	
LF424	603970	1546698	pit	-0.2		0.8	NA	Yes	None	
LF425	603983	1546648	mound	2.5	28.0		conical	No	None	
LF426	603954	1546676	mound	0.5	28.5		round	No	None	from baray construction?
LF427	603989	1546993	mound	2.3	31.0		conical	No	None	
LF428	603994	1547021	mound	1.3	18.0		row (NE-SW)	No	None	
LF429	604006	1547048	mound	1.8	14.1		round	No	None	
LF430	603993	1547091	pit	-0.1		0.7	NA	Yes	None	
LF431	603991	1547096	mound	1.0	9.0		conical	No	None	
LF432	604010	1547127	mound	1.2	19.0		round	No	None	
LF433	604016	1547161	mound	0.7	14.0		round	No	None	
LF434	604024	1547149	mound	0.8	25.0		round	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF435	604046	1547113	mound	0.6	15.0		round	No	None	
LF436	604039	1547093	mound	1.5	9.4		row (NE-SW)	No	None	
LF437	604054	1547118	mound	2.5	23.0		conical	No	None	
LF438	604071	1547115	mound	1.6	19.0		round	No	None	
LF439	604072	1547139	mound	1.8	23.0		round	No	None	
LF440	604073	1547166	mound	1.7	12.0		round	No	eroded brick	
LF441	604091	1547121	mound	2.0	18.0		round	No	None	
LF442	604103	1547136	mound	1.5	22.0		round	No	None	
LF443	604123	1547164	mound	1.8	19.0		round	Yes	None	
LF443/ SC1	604127	1547169	mound	0		4.0		Yes	None	2 m radius surface collection
LF444	604121	1547179	mound	1.5	17.5		conical	No	None	
LF445	604047	1547229	mound	0.8	16.0		round	No	None	
LF446	604001	1547213	mound	0.3	27.0		row	No	None	
LF447	604151	1547235	mound	1.2	16.5		conical	No	None	
LF448	604165	1547232	mound	1.8	30.0		round	No	None	
LF449	604180	1547213	mound	0.8	11.0		conical	No	None	
LF450	604171	1547176	mound	1.3	28.0		round	No	None	
LF450/ SC1	604173	1547160	mound mound	0		4.0		Yes	None	2 m radius surface collection
LF450/ SC2	604169	1547162	mound	0		4.0		Yes	None	2 m radius surface collection
LF450/ SC3	604164	1547159	mound	0		4.0		Yes	None	2 m radius surface collection

(continued)

**Table E.1.** continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF450/ SC4	604154	1547163	mound	0		4.0		Yes	None	2 m radius surface collection
LF451	604132	1547102	mound	2.0	21.5		round	No	None	
LF452	604179	1547081	mound	1.8	15.7		round	No	None	
LF453	604178	1547126	mound	1.9	15.5		conical	Yes	None	
LF454	604197	1547129	mound	1.7	13.5		conical	No	None	
LF455	604206	1547192	mound	1.8	12.0		conical	No	None	
LF456	604214	1547110	mound	1.8	6.3		conical	No	None	
LF457	604287	1547158	mound	1.3	10.5		conical	No	None	
LF458	604303	1547135	mound	1.2	10.0		conical	No	None	
LF459	604299	1547100	mound	1.0	8.5		conical	No	None	
LF460	604300	1547093	mound	0.5	2.5		round	No	None	
LF461	604230	1546971	mound	1.7	6.3		conical	No	None	
LF462	604176	1546957	mound	0.5	6.3		round	No	None	
LF463	604014	1546961	mound	1.2	28.3		round	No	None	
LF464	604016	1546986	mound	2.5	20.0		conical	No	None	
LF465	604022	1547013	mound	2.0	21.5		round	No	None	
LF466	604039	1547035	mound	2.5	33.0		row (N-S)	No	None	
LF467	604062	1547072	mound	0.5	33.0		row (NW-SE)	No	None	12 x 4.5 m
LF468	604070	1547073	mound	1.8	11.0		round	No	None	
LF469	604068	1547068	mound	0.8	12.6		round	No	None	
LF470	604085	1547080	mound	0.4	15.0		row (NW-SE)	No	None	6 x 1.5 m
LF471	604137	1547065	mound	1.5	25.0		round	No	None	
LF472	604118	1547013	mound	0.7	10.0		round	No	None	

(continued)

Table E.1. continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Height (m)	Circumference (m)	Diameter (m)	Mound Type	Ceramics	Architectural Debris	Comments
LF473	604119	1547007	mound	0.8	12.0		round	No	eroded brick	
LF474	604102	1546988	mound	0.5	11.5		round	No	None	
LF475	604103	1546970	mound	2.0	20.4		round	No	None	
LF476	604121	1546965	mound	1.5	14.1		round	No	None	
LF477	604133	1546979	mound	0.8	23.0		round	No	None	
LF478	604157	1546985	mound	1.6	14.5		round	No	None	
LF479	604187	1546971	mound	2.5	28.5		round	No	None	
LF480	604172	1546978	pit	-0.1		1	NA	Yes	None	square pit
LF481	604171	1547010	mound	2.0	30.0		round	No	eroded brick	
LF482	604262	1546908	sherd scatter	0		4.0	NA	Yes	None	
LF482/SC1	604262	1546908	sherd scatter	0		4.0	NA	Yes	None	2 m radius surface collection
LF483	603982	1546609	pit	-0.4		1.5	NA	Yes	eroded brick	
LF484	603983	1546609	pit	-0.4		1.6	NA	Yes	None	also contained fragment of a stone grinder
LF485	604015	1546609	pit	-0.2		1		Yes	None	
LF486	604092	1546695	Canal					Yes	None	recently (re)dug canal running 25 m E-W from eastern edge of SE reservoir
LF487	603564	1547182	Field					Yes	None	outside the enclosure; approx. 42 x 50 m
LF488	603930	1547220	sherd scatter	0		5.5		Yes	None	

**Table E.2.** Contents and areas of surface collections from landscape features with surface ceramics

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Collection Area (sq. m)	Sherd Count	Sherd Weight (g)
LF057	603825	1547003	field	4284.0	1	21
LF065	603688	1547029	sherd scatter	14.0	52	75
LF088	603887	1547122	pit	16.0	24	246
LF094	603756	1547085	mound	1.5	14	43
LF099	603970	1547098	garden	247.0	34	82
LF108	603744	1547099	Pit	3.1	38	173
LF114	603743	1547106	Pit	2.5	1	68
LF156	603885	1547124	modern mound	66.9	see LF088	see LF088
LF157	603890	1547127	modern mound	25.7	see LF088	see LF088
LF161	603858	1547147	Pit	1.6	10	15
LF171	603819	1547170	modern mound	8.0	19	101
LF211	603758	1546902	Pit	2.3	1	3
LF216	603675	1546888	Pit	3.1	5	15
LF292	603801	1546768	Pit	2.9	1	2
LF308	603622	1546773	sherd scatter	94.2	7	11
LF327	603906	1546697	sherd scatter	12.6	see AC047 in Appdx. F	see AC047 in Appdx. F
LF331	603881	1546712	mound	26.3	6	42
LF335	603731	1547093	Pit	2.4	1	1
LF340	603891	1546661	mound	20.4	2	2
LF341	603897	1546662	mound	9.6	1	9
LF344	603886	1546649	mound	12.6	14	38
LF351	603916	1546628	mound	28.7	1	2
LF352	603895	1546614	Pit	12.6	16	44
LF353	603887	1546608	Pit	7.1	8	25
LF354	603855	1546610	Pit	7.1	13	31
LF355	603846	1546607	sherd scatter	0.1	1	24
LF367/SC1	603897	1546601	mound	12.6	8	23
LF367/SC2	603901	1546587	mound	12.6	230	592
LF368/SC1	603911	1546591	mound	12.6	251	596
LF368/SC2	603906	1546584	mound	12.6	346	1166
LF368/SC3	603906	1546578	mound	12.6	644	1383
LF368/SC4	603908	1546578	mound	12.6	530	1389
LF390	604134	1546889	mound	55.9	2	22
LF416	603980	1546897	mound	452.4	1	8

(continued)



**Table E.2.** continued

ID	Easting (UTM 47N)	Northing (UTM 47N)	Feature Type	Collection Area (sq. m)	Sherd Count	Sherd Weight (g)
LF417	603997	1546835	mound	452.4	12	31
LF424	603970	1546698	Pit	3.1	2	16
LF430	603993	1547091	Pit	3.1	3	11
LF443/SC1	604127	1547169	mound	12.6	184	668
LF450/SC1	604173	1547160	mound	12.6	75	250
LF450/SC2	604169	1547162	mound	12.6	42	208
LF450/SC3	604164	1547159	mound	12.6	512	1612
LF450/SC4	604154	1547163	mound	12.6	536	1514
LF453	604178	1547126	mound	19.1	2	7
LF480	604172	1546978	Pit	2.5	8	25
LF482/SC1	604262	1546908	sherd scatter	12.6	78	237
LF483	603982	1546609	Pit	12.6	205	376
LF484	603983	1546609	Pit	12.6	27	70
LF485	604015	1546609	pit	2.5	75	215
LF486	604902	1546695	canal	50.0	47	405
LF487	603564	1547182	Field	2100.0	2	13
LF488	603930	1547220	sherd scatter	12.6	536	1643

## APPENDIX F

### Bucket Auger Cores and Surface Collections

This appendix provides the location and contents of the bucket auger cores and two meter radius surface collection units chosen through the stratified unaligned systematic sample and the judgmental sample locations. The surface collections recovered only ceramics. For each category of artifact in the auger cores, the count and weight are a combination of the materials recovered during screening in the field (5 mm mesh screen) and in the subsequent wet screening (1.5 mm mesh screens). Figures presenting the depths at which ceramics were recovered in each auger core and the distribution of ceramics across the site are presented in Chapter VI.

**Table F.1.** Bucket auger core and Surface Collection locations and contents

Sample ID	Easting (UTM 47N)	Northing (UTM 47N)	Final Depth (m)	Judgmental Location	Surf. Coll. Ceramics Wt. (g)	Surf. Coll Ceramics Count	Cored Ceramics Wt. (g)	Cored Ceramics Count	Cored Fauna Wt (g)	Cored Fauna Count	Cored Slag Wt. (g)	Cored Slag Count	Cored Beads Wt. (g)	Cored Beads Count
AC001	603905	1546823	5.15	No	0	0	0	0	0	0	0	0	0	0
AC002	604176	1546737	4.08	No	0	0	1.7	1	0	0	0	0	0	0
AC003	603727	1547090	0.29	No	0	0	1.5	1	0	0	0	0	0	0
AC004	603696	1547088	3.64	No	0	0	8.2	6	0	0	0	0	0	0
AC005	603846	1546933	4.53	Yes	0	0	39.5	23	2.4	18	0	0	0	0
AC006	603846	1546943	3.39	Yes	0	0	24	53	0	0	0	0	0	0
AC007	604281	1546863	2.34	No	0	0	0	0	0	0	0	0	0	0
AC008	604170	1546848	3.1	No	0	0	0	0	0	0	0	0	0	0

(continued)

Table F.1. continued

Sample ID	Easting (UTM 47N)	Northing (UTM 47N)	Final Depth (m)	Judgmental Location	Surf. Coll. Ceramics Wt. (g)	Surf. Coll Ceramics Count	Cored Ceramics Wt. (g)	Cored Ceramics Count	Cored Fauna Wt (g)	Cored Fauna Count	Cored Slag Wt. (g)	Cored Slag Count	Cored Beads Wt. (g)	Cored Beads Count
AC009	604098	1546807	2.8	No	0	0	25.2	32	0	0	0	0	0	0
AC010	603962	1546976	2.38	No	0	0	0	0	0	0	0	0	0	0
AC011	604029	1546939	3.05	Yes	0	0	0	0	0	0	0	0	0	0
AC012	604093	1546930	3.13	No	0	0	1.2	2	0	0	0	0	0	0
AC013	604190	1547118	2.45	No	0	0	2.7	11	0	0	0	0	0	0
AC014	603547	1547080	3.4	Yes	40	6	0	0	0	0	0	0	0	0
AC015	604464	1547064	2.1	Yes	0	0	0	0	0	0	0	0	0	0
AC016	604442	1547178	2.4	Yes	0	0	0.2	1	0	0	0	0	0	0
AC017	603765	1546909	2.3	No	0	0	6.1	8	0	0	0	0	0	0
AC018	603699	1546959	0.55	No	0	0	15.2	29	0	0	0	0	0	0
AC019	603688	1546979	2.2	Yes	0	0	1.1	3	0	2	0	0	0	0
AC020	603719	1546844	2.8	No	0	0	0	0	0	0	0	0	0	0
AC021	603603	1546780	2.4	No	0	0	45.9	43	0	0	0	0	0	0
AC022	603817	1546891	1.6	No	0	0	0	0	0	0	0	0	0	0
AC023	603889	1546999	1.5	No	0	0	4.3	8	0	0	0	0	0	0
AC024	603854	1547030	2.25	No	0	0	8.4	12	0	0	0	0	0	0
AC025	603926	1547030	2.29	No	30	12	96.6	86	0.9	11	0	0	0	0
AC026	603943	1547162	2.78	No	66	23	62.4	61	0	0	0	2	0	0
AC027	603898	1547148	2.2	No	0	0	15.8	30	2.6	19	1.7	1	0	0
AC028	603819	1547243	5.2	No	0	0	0	0	0	0	0	0	0	0
AC029	603921	1547334	2.15	No	0	0	0	0	0	0	0	0	0	0
AC030	603844	1547374	3.1	No	0	0	10.6	28	0	0	0	0	0	0
AC031	604028	1547346	1.7	No	0	0	0	0	0	0	0	0	0	0
AC032	603717	1547124	2.5	No	0	0	40	88	0	0	0	1	0	0
AC033	603727	1547204	5.1	No	0	0	0	0	0	0	0	0	0	0
AC034	603660	1547122	3	No	1	1	0	0	0	0	0	0	0	0
AC035	603733	1547080	0.8	No	0	0	11.5	19	0	0	0	0	0	0
AC036	603648	1546839	2	No	0	0	4.3	13	0	0	0	0	0	0
AC037	603776	1546764	2	No	0	0	6.8	13	0	0	0	0	0	0
AC038	603719	1546672	2.15	No	0	0	0	0	0	0	0	0	0	0
AC039	603690	1546621	2	No	0	0	0	0	0	0	0	0	0	0
AC040	603640	1546595	4.5	No	0	0	0	0	0	0	0	0	0	0

(continued)

Table F.1. continued

Sample ID	Easting (UTM 47N)	Northing (UTM 47N)	Final Depth (m)	Judgmental Location	Surf. Coll. Ceramics Wt. (g)	Surf. Coll Ceramics Count	Cored Ceramics Wt. (g)	Cored Ceramics Count	Cored Fauna Wt (g)	Cored Fauna Count	Cored Slag Wt. (g)	Cored Slag Count	Cored Beads Wt. (g)	Cored Beads Count
AC041	603802	1546550	2.45	No	0	0	0	0	0	0	0	0	0	0
AC042	603965	1546599	2	No	673	355	68.2	102	0.3	13	0	0	0	0
AC043	603901	1546587	2.15	Yes	0	0	33	38	0.5	18	0	0	0	0
AC044	603886	1546708	2.3	No	9	5	0.2	1	0	0	0	0	0	0
AC045	603882	1546648	2	No	0	0	58.6	48	0	0	0	0	0	0
AC046	603877	1546675	1.3	Yes	0	0	4.5	23	0	0	0	0	0	0
AC047	603901	1546703	1.6	Yes	177	107	63.5	58	0	1	0	0	0	0
AC048	603875	1546730	1.8	Yes	0.3	1	1.7	4	0	0	0	0	0	0
AC049	603889	1546736	1.2	Yes	0	0	1.3	7	0	0	0	0	0	0
AC050	603963	1546617	1.6	No	3	4	0	0	0	0	0	0	0	0
AC051	603968	1546619	2	Yes	0	0	17.8	15	0	0	0	0	0	0
AC052	603984	1546789	2.8	No	9	5	44.4	173	0	0	0	0	0	0
AC053	604037	1546744	1.4	No	0	0	7.5	20	0	0	0	0	0	0
AC054	604027	1546595	2	No	0	0	3.1	9	0	0	0	0	0	0
AC055	604175	1546627	0.8	No	0	0	0	0	0	0	0	0	0	0
AC056	604212	1546663	5	No	0	0	0	0	0	0	0	0	0	0
AC057	604293	1546993	2	No	0	0	2.8	7	0	0	0	4	0	0
AC058	604121	1546691	2.05	No	93	16	0.1	6	0	0	0	0	0	0
AC059	604318	1546930	2.05	No	0	0	0	0	0	0	0	0	0	0
AC060	604128	1546939	0.7	No	0	0	0.3	2	0	0	0	0	0	0
AC061	604186	1546950	2	No	0	0	0.4	3	0	0	0	0	0	0
AC062	604252	1546914	1.9	No	278	108	53.9	56	0	0	0	0	0	0
AC063	604295	1547019	2	No	0	0	1.6	9	0	0	0	0	0	0
AC064	604227	1547104	1.3	No	0	0	0	0	0	0	0	0	0	0
AC065	604237	1547095	2.5	Yes	0	0	4.4	10	0	0	0	0	0	0
AC066	604220	1547223	2.9	No	0	0	73.2	79	2.2	23	0	2	0	1
AC067	604214	1547157	2.1	No	0	0	218.7	169	0	0	0	0	0	1
AC068	604310	1547061	2.05	No	0	0	40.5	16	0	0	0	0	0	0
AC069	604327	1547191	3.5	No	0	0	0	0	0	0	0	0	0	0
AC070	604078	1547237	2	No	0	0	50.5	79	0	1	0	0	0	0
AC071	604026	1547163	2.1	No	0	0	56	51	0	4	0	0	0	0
AC072	604151	1547247	0.55	No	0	0	19.7	36	0	0	3.6	37	0	0

(continued)

Table F.1. continued

Sample ID	Easting (UTM 47N)	Northing (UTM 47N)	Final Depth (m)	Judgmental Location	Surf. Coll. Ceramics Wt. (g)	Surf. Coll Ceramics Count	Cored Ceramics Wt. (g)	Cored Ceramics Count	Cored Fauna Wt (g)	Cored Fauna Count	Cored Slag Wt. (g)	Cored Slag Count	Cored Beads Wt. (g)	Cored Beads Count
AC073	604151	1547247	2.5	No	0	0	71.9	148	1.3	64	6.8	77	0	0
AC074	603907	1547241	2.2	No	0	0	87.4	121	0.2	2	0	0	0	0
AC075	604020	1547080	1.05	No	0	0	84.2	129	0.7	12	0.2	4	0	0
AC076	604020	1547080	2.4	No	0	0	63.2	93	1.3	26	0.4	4	0	0
AC077	604172	1547023	2	No	0	0	0	0	0	0	0	0	0	0
AC078	604119	1547032	1.9	Yes	6	6	4.4	17	0	0	0	2	0	0
AC079	604060	1546997	0.6	No	14	7	38.9	54	0	0	0.2	9	0	0
AC080	604051	1547040	2	Yes	17	8	24.5	47	0	0	0.2	4	0	0
AC081	604222	1547017	2.45	Yes	0	0	7.8	18	0	0	0	0	0	0
AC082	604223	1546760	2	No	5	3	1.6	1	0	0	0	0	0	0
AC083	604067	1546615	2	No	0	0	0.4	1	0	0	0	0	0	0
AC084	603939	1546535	1.7	Yes	0	0	0	0	0	0	0	0	0	0
AC085	603969	1546923	2.2	Yes	0	0	0	0	0	0	0	0	0	0
AC086	604004	1546905	2.5	Yes	0	0	0	0	0	0	0	0	0	0
AC087	603650	1546650	2.1	Yes	0	0	0	0	0	0	0	0	0	0
AC088	603645	1546704	2	Yes	0	0	0	0	0	0	0	0	0	0
AC089	603644	1546740	0.2	Yes	0	0	0	0	0	0	0	0	0	0
AC090	603697	1546734	2	Yes	15	8	0	0	0	0	0	0	0	0
AC091	603761	1547091	2.1	Yes	2	2	62.7	82	0	0	0	0	0	0
AC092	603590	1547189	1.9	No	0	0	0	0	0	0	0	0	0	0
AC093	603505	1546837	1.7	No	0	0	0	0	0	0	0	0	0	0
AC094	603519	1546683	1.35	Yes	0	0	0	0	0	0	0	0	0	0
AC095	603703	1546512	1.4	No	0	0	0	0	0	0	0	0	0	0
AC096	603969	1546489	1.8	Yes	0	0	0	0	0	0	0	0	0	0
AC097	604150	1546583	1.6	No	0	0	0	0	0	0	0	0	0	0
AC098	604385	1546788	2	Yes	0	0	0.2	2	0	0	0	0	0	0
AC099	604048	1546845	1.85	Yes	0	0	23.9	68	0	0	0	0	0	0
AC100	603912	1546891	1.9	Yes	0	0	0	0	0	0	0	4	0	0
AC101	603925	1546950	2.1	Yes	0	0	0	0	0	0	0	0	0	0
AC102	603803	1546693	1.8	Yes	0	0	1	2	0	0	0	0	0	0
AC103	603784	1546626	2.3	Yes	0	0	1.4	2	0	0	0	0	0	0
AC104	603784	1546605	2	Yes	0	0	3.3	4	0	0	0	0	0	0

(continued)

**Table F.1.** continued

Sample ID	Easting (UTM 47N)	Northing (UTM 47N)	Final Depth (m)	Judgmental Location	Surf. Coll. Ceramics Wt. (g)	Surf. Coll Ceramics Count	Cored Ceramics Wt. (g)	Cored Ceramics Count	Cored Fauna Wt (g)	Cored Fauna Count	Cored Slag Wt. (g)	Cored Slag Count	Cored Beads Wt. (g)	Cored Beads Count
AC105	603813	1547147	2	Yes	0	0	46.7	73	0.2	6	0	1	0	0
AC106	603843	1547112	2	Yes	0	0	8.1	19	0	0	0	0	0	0
AC107	603996	1547239	2.4	Yes	0	0	255.2	235	0.2	7	0.2	8	0	0
AC108	604110	1547128	2	Yes	0	0	15.3	20	0	0	0	0	0	0
AC109	604154	1547163	2	Yes	0	0	31.5	42	1	28	0.1	2	0	0
AC110	603894	1546844	3.4	Yes	0	0	0	0	0	0	0	0	0	0
AC111	603771	1546996	2	Yes	0	0	5.5	8	0	0	0	0	0	0
AC112	603920	1547214	2	Yes	0	0	16.3	21	0	0	0	0	0	0
AC113	603907	1547256	1.5	Yes	0	0	15.4	22	16.1	53	0	0	0	0
AC114	604236	1546678	1.7	Yes	0	0	0	0	0	0	0	0	0	0
AC115	604227	1546688	1.9	Yes	0	0	0	0	0	0	0	0	0	0
AC116	603958	1546915	2	Yes	0	0	0	0	0	0	0	0	0	0
AC117	603873	1546628	1.5	Yes	0	0	0	0	0	0	0	0	0	0
AC118	603875	1546647	1.5	Yes	0	0	3.8	4	0	0	0	0	0	0
AC119	603862	1546642	2.25	Yes	0	0	0	0	0	0	0	0	0	0
AC120	603672	1546925	3.5	Yes	0	0	0	0	0	0	0	0	0	0
AC121	603675	1546934	1.5	Yes	0	0	0	0	0	0	0	0	0	0
AC122	603712	1546952	2	Yes	0	0	0	0	0	0	0	0	0	0
AC123	603674	1546922	1.5	Yes	0	0	62.9	25	26.8	41	0	0	0	0

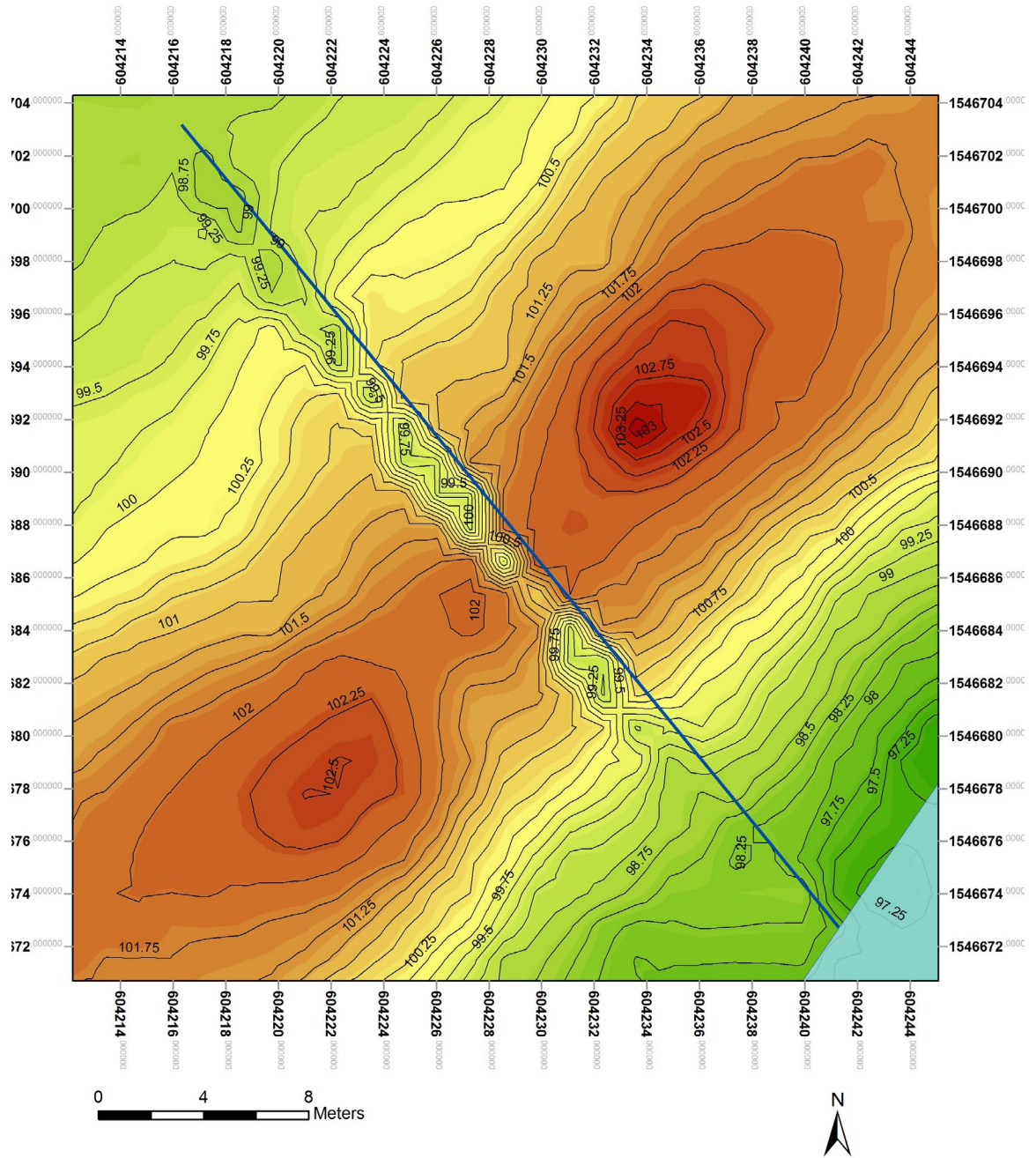


## APPENDIX G

### Enclosure Wall Profile

In this appendix, I provide a topographic map of the enclosure wall and moat in the area directly around the profile cut, an elevation profile of the enclosure wall and moat through this same area and a profile of the strata in the northeast wall of the cut through the enclosure wall. Characterizations of the strata identified in the enclosure wall profile are provided in table G.1. The elevations given in the map and the profile drawings are based on the site datum (elv. 100 m) at the center of the site (see Appendix D).

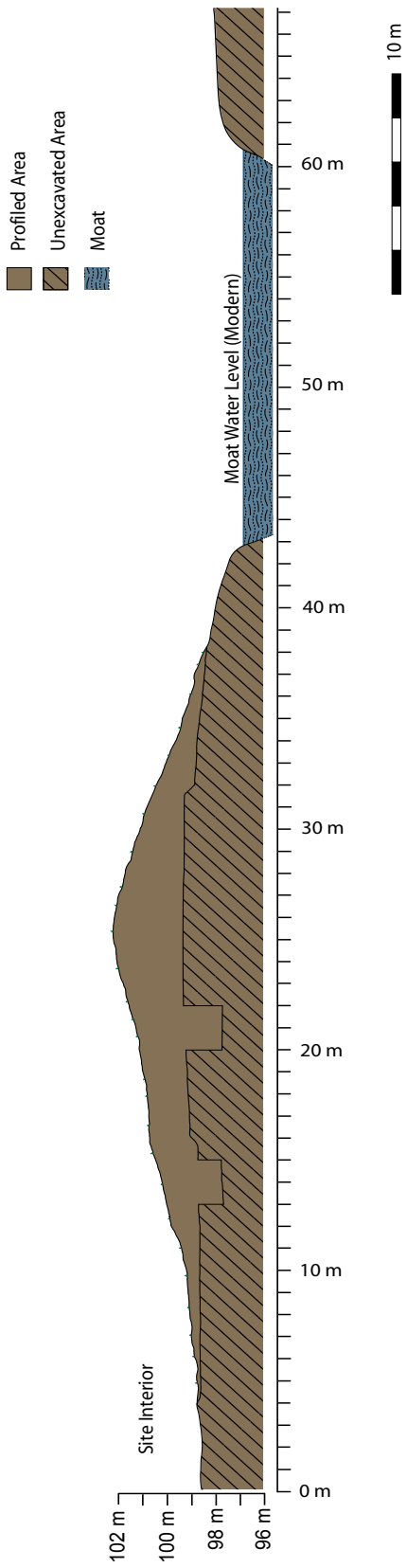
The profile of the enclosure wall identified two distinct construction phases, which I have labeled as phase one and two in the strata characterization (see table G.1). Both phases contain two types of sediment: a yellow-brown clay and gray clay. The naturally occurring stratigraphic sequence of these two types of sediment is the yellow-brown clay at the surface with the gray clay below. In the stratigraphy of the enclosure wall the stratigraphic relationship of these two types of sediment has been reversed, as a result of their having been dug out of the moat and deposited on its interior bank in the order they were removed from the earth. The fact that the sequence of yellow-brown and gray matrix repeats itself in the stratigraphy of the enclosure wall suggests that there were two phases of construction. I have therefore subdivided these two types of matrix by construction phase. The lack of topsoil deposits or cultural material between these two construction phases suggest they were deposited in rapid succession, likely as part of the same overall construction project.



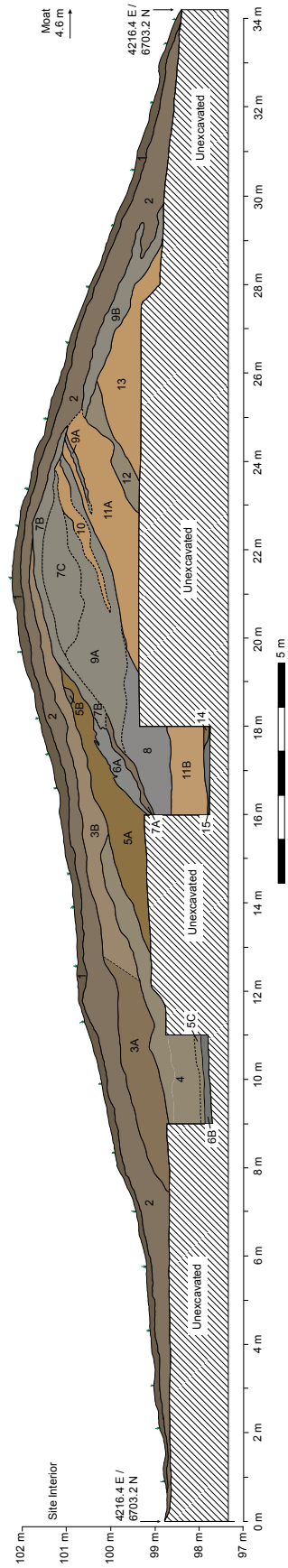
**Figure G.1** Topographic map of enclosure wall and moat around the profile cut. Note: elevations are based on site datum of 100m; blue line is the profile cut.



Figure G.1. Reconstructed photograph of center of enclosure wall profile (stadia rod is 2 m high)



**Figure G.3.** Elevation profile of earthen wall and moat at the location of the profile cut.



**Figure G.4.** Profile of northeast wall of cut through the enclosure wall. See table G.1 for strata descriptions.



**Table G.1.1.** Characterizations of the strata in the enclosure wall profile

Stratum	Matrix Description	Boundary	Disturbances	Interpretation
1	Dark brown (10YR 3/3) silty loam; slightly hard, slightly plastic, slightly sticky; fine subround structure	gradual boundary	abundant burrows and roots	overburdern
2	Brown (10YR 4/3) silty clay loam; hard; plastic, slightly sticky; fine to medium subangular blocky structure	gradual boundary	abundant burrows and roots	overburdern
3A	Dark yellowish brown (10YR 4/4) silty clay loam; mottled (10%) with dark gray (2.5 4/1) clay; friable, very plastic, slightly sticky; medium subangular blocky structure	gradual boundary	abundant roots	overburdern
3B	Same as 3A except color is yellowish brown 10YR (5/4)	gradual boundary	a few burrows, abundant roots	overburdern
4	Light olive brown (2.5Y 5/3) silty clay; mottled (10%) with Gray (2.5Y 6/1), (5% ) with Yellowish Brown (10YR 5/8) and (3%) with Very Dark Brown (10YR 2/2) silty clay; slightly hard, plastic, slightly sticky; medium subangular blocky structure	gradual boundary	roots	overburdern/ fill/ erosion
5A	Dark yellowish brown (10YR 4/6) silty clay; mottled (40%) with Very Dark Gray (10YR 3/2) clay; slightly hard, plastic; medium to coarse subangular blocky structure	gradual boundary	roots	overburdern/ fill/ erosion
5B	Brown (10YR 4/3) silty clay; mottled (10%) with Dark Gray (10YR 4/1) clay; slightly hard, plastic, slightly sticky; medium to coarse subangular blocky structure	clear boundary	roots	overburdern/ fill/ erosion
5C	Light olive brown (2.5Y 5/3) silty clay; mottled (15%) with Very Dark Brown (10YR 2/2) silty clay; hard, plastic, slightly sticky; coarse subangular blocky structure	Clear boundary	roots	Natural stratum
6A	Gray (2.5Y 5/1) clay; quartzite and hematite inclusions; very hard, plastic, slightly sticky; coarse angular blocky structure	clear boundary with some mixing	none	Construction Phase 2B
6B	Dark gray (10YR 4/1) silty clay; quartzite and hematite inclusions; very hard, plastic, slightly sticky; med blocky structure		none	Natural stratum
7A	Brown (10YR 4/3) silty clay; slightly hard, plastic, sticky; medium subround structure	gradual boundary	a few burrows, abundant roots	Construction Phase 2B

**Table G.1. Continued**

Stratum	Matrix Description	Boundary	Disturbances	Interpretation
7B	Grayish brown (2.5Y 5/2) sandy clay; mottled (20%) with yellowish brown (10YR 5/8); hard, slightly sticky, slightly plastic; coarse subangular blocky structure; quartzite inclusions	gradual boundary	few burrows, abundant roots	Construction Phase 2B
7C	Grayish brown (2.5Y 5/2) sandy clay; mottled (30%) with yellowish brown (10YR 5/8); hard, slightly sticky, slightly plastic; coarse subangular blocky structure; quartzite inclusions	gradual boundary	few burrows, abundant roots	Construction Phase 2B
8	Dark grayish brown (10YR 4/2) silty clay; hard, plastic, slightly sticky; medium to coarse subangular blocky structure; hematite inclusions	gradual boundary with 9; clear boundary elsewhere	Small roots	Construction Phase 2B
9A	Grayish brown (2.5Y 5/2) sandy clay; very hard, plastic, slightly sticky; coarse angular blocky structure; quartzite and hematite inclusions	clear boundary with 11; gradual boundary elsewhere	Small roots	Construction Phase 2B
9	Same as 9A	Clear boundaries	Small roots	Construction Phase 1B
10	Brownish yellow (10YR 6/8) silty clay; mottled (30%) with light olive gray (5Y 6/2) and (10%) with very dark gray (2.5Y 3/1); hard, plastic, sticky; coarse subangular blocky structure	Clear boundary with 7C; Clear to diffuse boundary with 9A	Small to no roots	Construction Phase 2A
11A	Brownish yellow (10YR 6/8) silty clay; mottled (30%) with light olive gray (5Y 6/2) and (10%) with very dark gray (2.5Y 3/1); hard, plastic, sticky; coarse subangular blocky structure	Clear boundaries	Small to no roots	Construction Phase 2A
11B	Yellowish brown (10YR 5/4) silty clay; mottled (30%) with brownish yellow (10YR 6/6) and (10%) with gray (10YR 6/1); hard becoming very hard toward base, plastic, sticky; coarse subangular blocky structure	Clear boundaries	Small to no roots	Construction Construction Phase 2A



**Table G.1.** Continued

Stratum	Matrix Description	Boundary	Disturbances	Interpretation
12	Light olive brown (2.5Y 5/3) sandy silty clay; mottled (7%) with yellowish brown (10YR 5/6); slightly hard, plastic, slightly sticky; medium to coarse subangular blocky structure	Clear boundaries	Small to no roots	Construction Phase 1B
13	same as 11A	Clear boundaries	Small to no roots	Construction Phase 1A
14	Olive Brown (10YR 4/3) silty clay; mottled (10%) with yellowish brown (10YR 5/6) and 10% dark gray (10Yr 4/1); very hard, plastic; coarse angular blocky structure	Clear boundaries	none	Natural stratum
15	Dark Gray (10YR 4/1) silty clay; well sorted; slightly hard, plastic, slightly sticky; medium blocky structure; hematite inclusions	Clear boundaries	none	Natural stratum

## APPENDIX H

### **Excavation Provenience Designations, Volumes and Profiles**

All contexts excavated in the two enclosure wall profile units and the four interior test units were given a unique provenience designation number (PD). Table H.1. gives the location of each of these contexts in three dimensions based on the KSAP coordinate system and site elevation datum (see Appendix D). During excavation depth measurements were taken at all four corners of the unit or feature, as well as their center. The depth measurements provided in Table H.1. are the center measurements only. This table also gives the original excavation level or feature number, and the subsequent stratum designation (see Appendix D for descriptions of the designation system). Salvage Units 01 and 02 were each given a single PD number for the entire unit. The PD numbers are used in descriptions and photographs in the other appendices and chapter to identify the provenience of all excavated artifacts.

Following the table of provenience designations, profile drawings from each of the interior KSAP test units and tables describing their strata are provided. The stratum number designations in the profiles generally match those in Table H.1., but in some cases have been subdivided due to characteristics noted in the profiles.

**Table H.1.1. Provenance Designations (PDs) from Excavation Units**

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
1	RMPT-01	3	NA	3/1	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.7	0.0
2	RMPT-01	4	NA	4/1	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.7	0.1
3	RMPT-01	4	NA	4/2	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.6	0.1
4	RMPT-01	5	NA	5/1	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.6	0.1
5	RMPT-01	4	NA	4/3	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.5	0.1
6	RMPT-01	6	NA	6/1	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.3	0.0
7	RMPT-01	4	NA	4/4	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.3	0.2
8	RMPT-01	7	NA	7/1	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	99.3	0.0
9	RMPT-01	4	NA	4/5	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.2	0.2
10	RMPT-01	8	NA	8/1	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	99.2	0.1
11	RMPT-01	4	NA	4/6	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.2	0.1
12	RMPT-01	8	NA	8/2	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	99.1	0.1
13	RMPT-01	4	NA	4/7	422.74E / 6694.22N	422.58E / 6695.7N	422.03E / 6696.19N	4223.4E / 6694.7N	98.7	98.0	0.1

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
14	RMPT-01	8	NA	8/3	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	99.1	99.0	0.1
15	RMPT-01	5	NA	5/1	4222.74E/ 6694.22N	4221.58E/ 6695.7N	4222.03E/ 6696.19N	4223.4E/ 6694.7N	98.0	97.9	0.2
16	RMPT-01	8	NA	8/4	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	99.0	98.9	0.1
17	RMPT-01	6B	NA	6B/1	4222.74E/ 6694.22N	4221.58E/ 6695.7N	4222.03E/ 6696.19N	4223.4E/ 6694.7N	97.9	97.9	0.1
18	RMPT-01	8	NA	8/5	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.9	98.8	0.2
19	RMPT-01	6B	NA	6B/2	4222.74E/ 6694.22N	4221.58E/ 6695.7N	4222.03E/ 6696.19N	4223.4E/ 6694.7N	97.9	97.8	0.1
20	RMPT-01	8	NA	8/6	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.8	98.8	0.1
21	RMPT-01	8	NA	8/7	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.8	98.7	0.1
22	RMPT-01	8	NA	8/8	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.8	98.6	0.1
23	RMPT-01	11B	NA	11B/1	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.6	98.5	0.1
24	RMPT-01	11B	NA	11B/2	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.5	98.5	0.1
25	RMPT-01	11B	NA	11B/3	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.5	98.4	0.1
26	RMPT-01	11B	NA	11B/4	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.4	98.3	0.1

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
27	RMPT-01	11B	NA	11B/5	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.3	98.2	0.2
28	RMPT-01	11B	NA	11B/6	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.2	98.2	0.1
29	RMPT-01	11B	NA	11B/7	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.2	98.1	0.2
30	RMPT-01	14	NA	14/1	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	98.1	97.9	0.2
31	RMPT-01	15	NA	15/1	4227.11E/ 6688.81N	4225.9E/ 6690.6N	4226.38E/ 6690.74N	4227.9E/ 6689.2N	97.9	97.8	0.1
32	PD Number Not Used										
33	TP-01	0	NA	0	3921E/ 7216N	3921E/ 7218N	3923E/ 7218N	3923E/ 7216N	99.5	99.5	0
34	TP-01	1	NA	1/1	3921E/ 7216N	3921E/ 7218N	3923E/ 7218N	3923E/ 7216N	99.5	99.4	0.3
35	TP-01	2	NA	2/1	3921E/ 7216N	3921E/ 7218N	3923E/ 7218N	3923E/ 7216N	99.4	99.3	0.6
36	TP-01	0	NA	0	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	99.4	99.4	0
37	TP-01	0	NA	0	3923E/ 7218N	3923E/ 7220N	3925E/ 7220N	3925E/ 7218N	99.4	99.4	0
38	SALV-01	NA	NA	NA	4183.27E/ 6818.04N	See Note			99.1	99.2	7.5
39	SALV-02	NA	NA	NA	4106.83E/ 6717.54N	4106.43E/ 6720.46N	4109.27E/ 6721.24N	4109.56E/ 6718.24N	99.0	97.4	14.7

Note: Coordinates for the SE corner of Salvation Unit-01 were collected using a handheld GPS rather than the total station. The unit measured 2 x 2 m square, but was not aligned to the site grid.

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
40	TP-01	2	NA	2/2	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	99.3	99.2	0.6
41	TP-01	0	NA	0	3923E / 7216N	3923E / 7218N	3925E / 7218N	3925E / 7216N	99.5	99.5	0
42	TP-01	0	NA	0	3923E / 7214N	3923E / 7216N	3925E / 7216N	3925E / 7214N	99.5	99.5	0
43	TP-01	0	NA	0	3921E / 7214N	3921E / 7216N	3923E / 7216N	3923E / 7214N	99.4	99.4	0
44	TP-01	0	NA	0	3919E / 7214N	3919E / 7216N	3921E / 7216N	3921E / 7214N	99.5	99.5	0
45	TP-01	0	NA	0	3919E / 7216N	3919E / 7218N	3921E / 7218N	3921E / 7216N	99.4	99.4	0
46	TP-01	0	NA	0	3919E / 7218N	3919E / 7220N	3921E / 7220N	3921E / 7218N	99.4	99.4	0
47	TP-01	3	NA	3/1	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	99.2	99.1	0.5
48	TP-01	3	NA	3/2	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	99.1	99.0	0.5
49	TP-01	3	NA	3/3	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	99.0	99.0	0.4
50	TP-01	3	NA	3/4	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	99.0	98.9	0.3
51	TP-01	3	NA	3/5	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.9	98.9	0.2
52	TP-01	4	NA	4/1	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.9	98.8	0.3

(continued)



**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
53	TP-01	4	NA	4/2	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.8	98.7	0.5
54	TP-01	4	NA	4/3	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.7	98.7	0.5
55	TP-01	4	NA	4/4	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.7	98.5	0.7
56	TP-01	5	NA	5/1	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.5	98.4	0.6
57	TP-01	1	NA	1/1	3921E / 7216N	3921E / 7220N	3923E / 7220N	3923E / 7216N	99.4	99.3	0.4
58	TP-01	2	NA	2/1	3921E / 7218N	3921E / 7220N	3923E / 7220N	3923E / 7218N	99.3	99.3	0.1
59	TP-01	6	NA	6/1	3921E / 7216N	3921E / 7218N	3923E / 7218N	3923E / 7216N	98.4	98.3	0.6
60	TP-01	2	NA	2/2	3921E / 7218N	3921E / 7220N	3923E / 7220N	3923E / 7218N	99.3	99.2	0.2
61	TP-01	3	NA	3/1	3921E / 7218N	3921E / 7220N	3923E / 7220N	3923E / 7218N	99.2	99.2	0.2
62	TP-01	3	NA	3/2	3921E / 7218N	3921E / 7220N	3923E / 7220N	3923E / 7218N	99.2	99.1	0.1
63	TP-01		F1	F1/1	3922.67E / 7218N	3922.88E / 7220N	3923E / 7220N	3923E / 7218N	99.1	99.1	1.6
64	TP-01	3	NA	3/3	3921E / 7218N	3921E / 7220N	3923E / 7220N	3923E / 7218N	99.1	99.1	0.2
65	TP-01		F1	F1/2	3922.69E / 7218N	3922.88E / 7220N	3923E / 7220N	3923E / 7218N	99.1	99.0	0.0

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
66	TP-01	3	NA	3/4	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	99.1	98.9	0.4
67	TP-01	3	NA	3/5	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	98.9	98.9	0.1
68	TP-01	4	NA	4/1	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	98.9	98.8	0.2
69	TP-01	4	NA	4/2	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	98.8	98.6	0.3
70	TP-01	4	NA	4/3	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	98.6	98.5	0.3
71	TP-01	5	NA	5/1	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	98.5	98.4	0.4
72	TP-01	6	NA	6/1	3921E/ 7218N	3921E/ 7220N	3923E/ 7220N	3923E/ 7218N	98.4	98.3	0.2
73	TP-02	0	NA	0	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	99.1	99.1	0
74	TP-02	1	NA	1	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	99.1	99.1	0.2
75	TP-02	2	NA	2	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	99.1	99	0.4
76	TP-02	3	NA	3	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	99	98.9	0.7
77	TP-02	3	NA	4	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.9	98.7	0.7
78	TP-02	4	NA	5	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.7	98.7	0.4

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
79	TP-02	4	NA	6	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.7	98.6	0.4
80	TP-02	5	NA	7	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.6	98.5	0.2
81	TP-02	6	NA	8	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.5	98.5	0.2
82	TP-02	6	F1	1	3933.07E/ 6940.89N	3932.99E/ 6941.09N	3933.15E/ 6941.26N	3933.32E/ 6941.1N	98.5	98.4	0.0
83	TP-02	6	NA	9	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.5	98.4	0.4
84	TP-02	7	NA	10	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.4	98.3	0.2
85	TP-02	7	NA	11	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.3	98.2	0.6
86	TP-02	8	NA	12	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.2	98.1	0.6
87	TP-02	8	NA	13	3932E/ 6940N	3932E/ 6942N	3934E/ 6942N	3934E/ 6940N	98.1	98.0	0.4
88	TP-03	0	NA	0	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.8	98.8	0
89	TP-03	1	NA	1	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.8	98.7	0.5
90	TP-03	2	NA	2	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.7	98.6	0.5
91	TP-03	3	NA	3	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.6	98.5	0.4

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
92	TP-03	4	NA	4	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.5	98.5	0.3
93	TP-03	4	NA	5	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.5	98.4	0.3
94	TP-03	4	NA	6	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.4	98.4	0.1
95	TP-03	5	NA	7	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.4	98.3	0.4
96	TP-03	5	NA	8	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.3	98.3	0.3
97	TP-03	F1	F1	F1/1	3869.77E/ 6633N	3870.14E/ 6633.44N	3870.51E/ 6633.21N	3870.45E/ 6633N	98.3	98.2	0.0
98	TP-03	F1	F2	F1/2	3869.1E/ 6634.31N	3869.31E/ 6634.36N	3869.46E/ 6634.25N	3869.33E/ 6634.13N	98.3	98.2	0.0
99	TP-03	6	NA	9	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	98.3	98.2	0.5
100	TP-03	5	NA	10	3869E/ 6633N	3869E/ 6635N	3971E/ 6635N	3971E/ 6633N	98.2	98.1	0.6
101	TP-03	6	NA	11	3869E/ 6633N	3869E/ 6635N	3971E/ 6635N	3971E/ 6633N	98.1	97.9	0.6
102	TP-03	6	NA	12	3869E/ 6633N	3869E/ 6635N	3971E/ 6635N	3971E/ 6633N	97.9	97.9	0.6
103	TP-03	6	NA	13	3869E/ 6633N	3869E/ 6635N	3971E/ 6635N	3971E/ 6633N	97.9	97.8	0.6
104	TP-03	6	NA	14	3869E/ 6633N	3869E/ 6635N	3971E/ 6635N	3971E/ 6633N	97.8	97.7	0.7

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
105	TP-03	7	NA	15	3869E/ 6633N	3869E/ 6635N	3871E/ 6635N	3871E/ 6633N	97.7	97.6	0.5
106	TP-04	0	NA	0	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	99.3	99.3	0
107	TP-04	0	NA	0	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.9	99.9	0
108	TP-04	1	NA	1	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.9	99.8	0.5
109	TP-04	1	NA	1	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	99.3	99.2	0.6
110	TP-04	2	NA	2	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.8	99.6	1.0
111	TP-04	2	NA	2	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	99.2	99.1	0.7
112	TP-04	2	NA	3	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.6	99.1	2.2
113	TP-04	2	NA	3	3676E/ 6923N	3676E/ 6925N	3676.8E/ 6925N	3676.7E/ 6923N	99.2	99.1	0.2
114	TP-04	2	NA	4	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.1	99.1	0.2
115	TP-04	3	NA	4	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	99.1	98.9	0.4
116	TP-04	3	NA	5	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.1	99.0	0.6
117	TP-04	3	NA	5	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.9	98.9	0.6

(continued)

**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
118	TP-04	3	NA	6	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	99.0	98.9	0.5
119	TP-04	4	NA	6	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.9	98.8	0.6
120	TP-04	4	NA	7	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.9	98.8	0.4
121	TP-04	4	NA	7	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.8	98.7	0.6
122	TP-04	4	NA	8	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.8	98.7	0.5
123	TP-04	5	NA	8	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.7	98.6	0.4
124	TP-04	5	NA	9	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.7	98.6	0.5
125	TP-04	6	Surface 1	Surface 1	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.6	98.6	0
126	TP-04	6	Surface 1	Surface 1	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.6	98.6	0
127	TP-04	6	NA	9	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.6	98.6	0.0
128	TP-04	6	NA	10	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.6	98.6	0.0
129	TP-04	6	NA	10	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.6	98.5	0.6
130	TP-04	6	NA	11	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.6	98.5	0.5

(continued)



**Table H.1.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
131	TP-04	6	NA	11	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.5	98.4	0.5
132	TP-04	6	NA	12	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.5	98.4	0.4
133	TP-04		F1	F1/1	3675.74E/ 6923N	3676.25E/ 6923.2N	3676.58E/ 6923.24N	3676.76E/ 6923N	98.4	98.3	0.0
134	TP-04	7	NA	13	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.4	98.3	0.5
135	TP-04	7	NA	12	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.4	98.3	0.5
136	TP-04		F1	F1/2	3675.74E/ 6923N	3676.25E/ 6923.2N	3676.58E/ 6923.24N	3676.76E/ 6923N	98.3	98.2	0.0
137	TP-04	7	NA	13	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.3	98.2	0.6
138	TP-04	7	NA	14	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.3	98.2	0.5
139	TP-04	F1	F1	F1/3	3675.95E/ 6923N	3676.3E/ 6923.31N	3676.45E/ 6923.31N	3676.58E/ 6923N	98.2	98.2	0.0
140	TP-04		F1	F1/4	3675.95E/ 6923N	3676.3E/ 6923.31N	3676.45E/ 6923.31N	3676.58E/ 6923N	98.2	98.1	0.0
141	TP-04	7	NA	14	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.2	98.1	0.2
142	TP-04	8	NA	15	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.2	98.1	0.5
143	TP-04		F1	F1/4B	3676.48E/ 6923N	3677E/ 6923.32N	3677.2E/ 6923.26N	3677.5E/ 6923N	98.2	98.1	0.0

(continued)

**Table H.1.** continued

PD	Area	Stratum	Feature No.	Excavation Level	SW Corner Coord.	NW Corner Coord.	NE Corner Coord.	SE Corner Coord.	Top Elevation	Bottom Elevation	Volume (m3)
144	TP-04	F1	F1	F1/5	3676.02E/ 6923N	3676.9E/ 6923.33N	3677.2E/ 6923.32N	3677.5E/ 6923N	98.1	98.0	0.0
145	TP-04	8	NA	15	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.1	98.0	0.4
146	TP-04	8	NA	16	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.1	98.0	0.5
147	TP-04		F1	F1/6	3676.02E/ 6923N	3676.2E/ 6923.22N	3677E/ 6923.36N	3677.5E/ 6923N	98.0	98.0	0.0
148	TP-04	8	NA	17	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	98.0	97.9	0.5
149	TP-04	8	NA	16	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	98.0	97.9	0.6
150	TP-04	8	NA	18	3674E/ 6923N	3674E/ 6925N	3676E/ 6925N	3676E/ 6923N	97.9	97.8	0.6
151	TP-04	8	NA	17	3676E/ 6923N	3676E/ 6925N	3678E/ 6925N	3678E/ 6923N	97.9	97.8	0.6

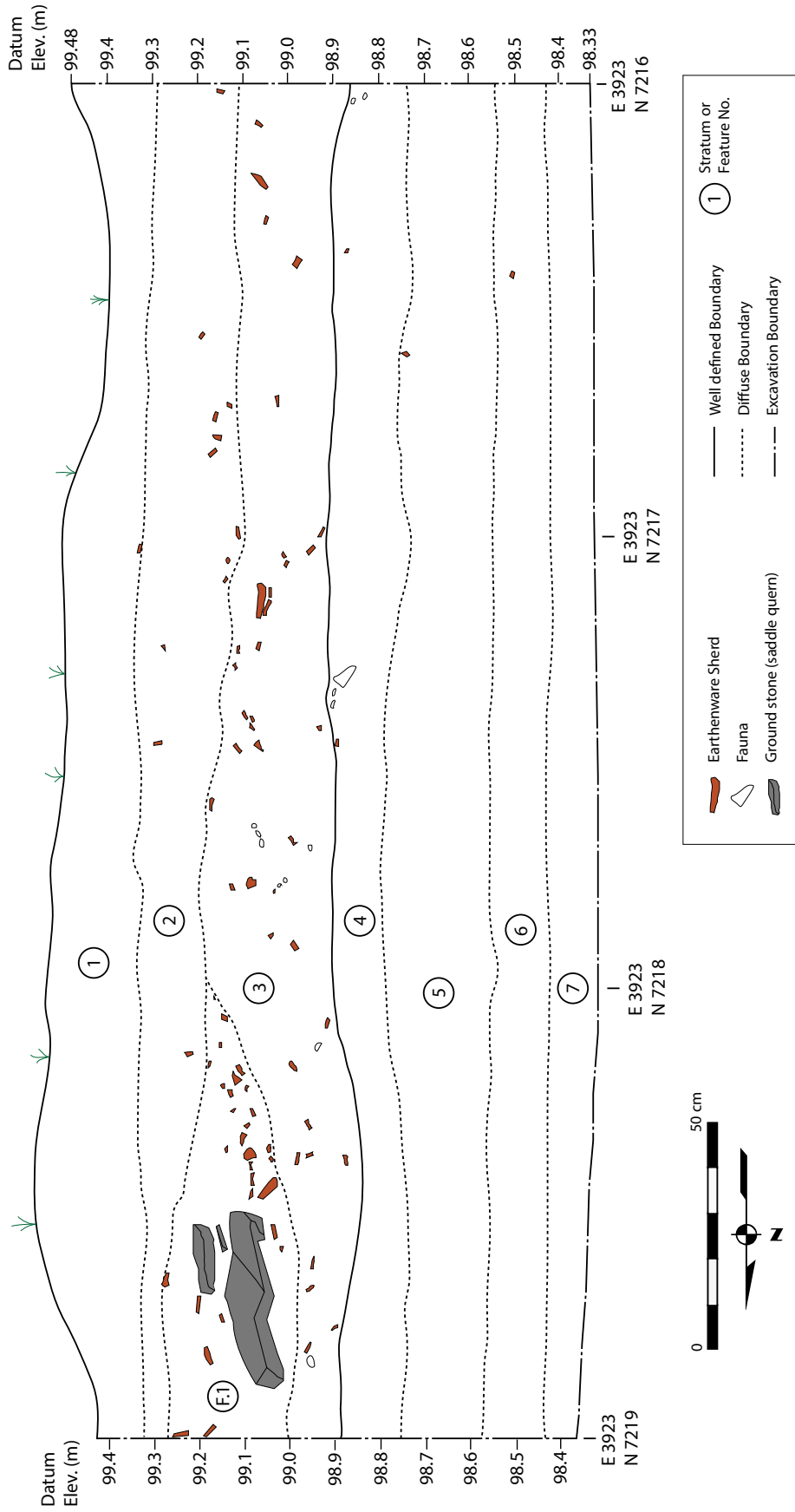


Figure H.1. TP-01 east wall profile

**Table H.2. TP-01 profile strata characterizations**

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Boundary	Disturbances	Cultural materials	Interpretation
1	Brown (10YR 5/3)	Very dark gray (10YR 3/1)	clay loam; moderate compaction; dry and friable; coarse blocky structure	very diffuse below	fired clay fragments; small roots	a few small earthenware sherds and bone fragments	topsoil/plow zone
2	Brown (10YR 5/3)	Very dark gray (10YR 3/1)	same as above but less friable	very diffuse above; diffuse below	fired clay fragments; small roots	same as above with charcoal fragments	fill
Feature 1	Dark grayish brown (10YR 4/2)	Very dark gray (10YR 3/1)	clay loam; hard compaction; coarse blocky structure	diffuse above and below	abundant fired clay fragments; small roots	abundant small to medium sherds and bone fragments; charcoal fragments; Dvaravati saddle quern	possibly an informal pit or low lying area in midden
3	Dark grayish brown (10YR 4/2)	Very dark gray (10YR 3/1)	silty clay; compact; med. to coarse blocky structure	diffuse above; moderately well defined below	abundant fired clay fragments and ; small to medium roots	abundant small to medium sherds and bone fragments; charcoal fragments	fill with series of ephemeral surfaces
4A	Brown (10YR 5/3) mottled with grayish brown (2.5Y 5/2)	Very dark grayish brown (10YR 3/2)	silty clay; compact; med. blocky structure	moderately well defined above; diffuse below	small roots	a few small sherds and very small bone fragments	low density fill or natural with intrusive artifacts
4B	Grayish brown (2.5Y 5/2) lightly mottled with brown (10YR 5/3)	Very dark grayish brown (10YR 3/2)	silty clay; compact; med. blocky structure; more evenly sorted than 4A	diffuse above and below	Fired clay fragments; small roots	a few small sherds and very small bone fragments	natural with a few intrusive artifacts

(continued)

**Table H.2. continued**

<b>Stratum</b>	<b>Dry Munsell</b>	<b>Wet Munsell</b>	<b>Matrix Description</b>	<b>Boundary</b>	<b>Disturbances</b>	<b>Cultural materials</b>	<b>Interpretation</b>
5	Brown (10YR 4/3) to dark yellowish brown (10YR 4/4) heavily mottled with flecks of yellowish brown (10YR 5/8)	same as dry Munsell	clay; cemented compaction; coarse blocky structure	diffuse above and below	fired clay fragments	very few small sherds and small bone fragments	natural with a few intrusive artifacts
6	same as above with more mottling	same as above with more mottling	same as above with more mottling	diffuse above		sterile	natural

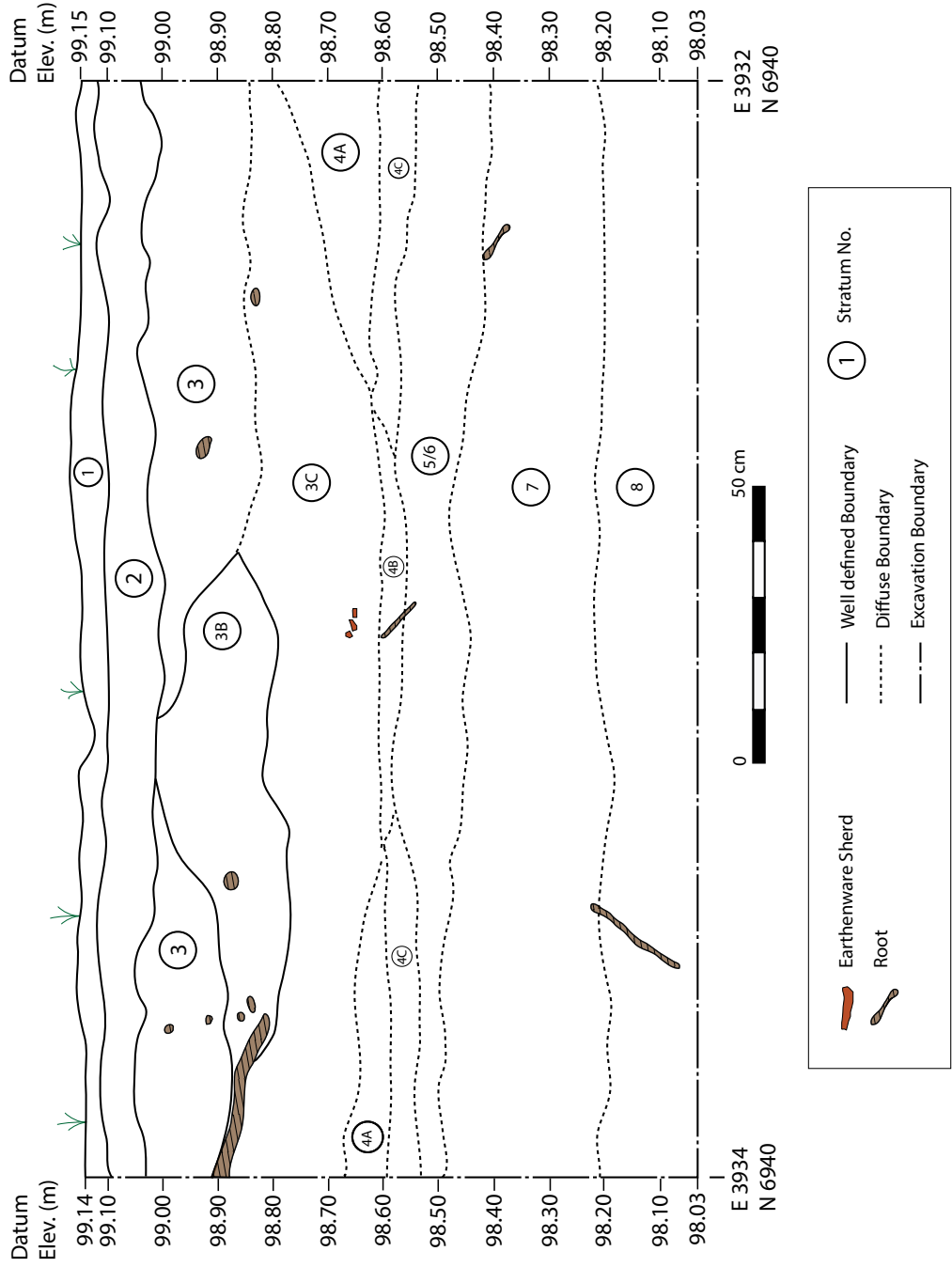


Figure H.2. TP-02 south wall profile



**Table H.3. TP-02 profile strata characterizations**

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Boundary	Disturbances	Cultural materials	Interpretation
1	Brown (10 YR 4/3)	Very dark grayish brown (10YR 3/2)	clay loam; moderate compaction	well defined below	small fired clay fragments; small roots	none visible in profile	topsoil
2	Dark grayish brown (10YR 4/2)	Very dark gray (10YR 3/1)	clay loam; moderate compaction; sticky; plastic; calcite inclusions (<1 mm; 3%)	well defined above and below	small to med. clay fragments; small to med. Roots	none visible in profile	low density fill
3A	Brown (10YR 5/3)	Very dark grayish brown (10YR 3/2)	clay loam; hard compaction; sticky; plastic; calcite inclusions (<1 mm; 3%)	well defined above and with strat 3B; diffuse boundary with strat 3C	small clay fragments; small to med. Roots	none visible in profile	low density fill
3B	Strong brown (7.5YR 4/6)	Dark brown (7.5 YR 3/4)	silty clay; mod. to hard compaction; sticky; plastic; calcite inclusions (<1mm; 1%)	well defined	abundant med to large fired clay fragments; med. Roots	a few small flecks of charcoal (natural?)	low density fill with burning
3C	Brown (10YR 4/3)	Dark brown (7.5 YR 3/3)	sandy clay with silt; calcite inclusions (<1 mm; 2%); subangular quartzite gravel (somerounded completely; 1-3 mm; 7%)	well defined with 3B and 3C; diffuse with 4A and 4B	small to med. Fired clay fragments; small-med. Roots	a few small (<1 cm earthenware sherds	low density fill
4A	Brown (10YR 5/3)	Very dark grayish brown (10YR 3/2)	same as 3C	diffuse	very few small fired clay fragments	none visible in profile	low density fill
4B	Brown (10YR 4/3)	Dark brown (7.5 YR 3/3)	same as 3C with more gravel (subangular quartzite gravel 1-3mm; 10-25%)	diffuse	very few small fired clay fragments	none visible in profile	informal gravel paving fill/surface?

(continued)

Table H.3. continued

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Boundary	Disturbances	Cultural materials	Interpretation
4C	Brown (10YR 5/3)	Very dark grayish brown (10YR 3/2)	same as 3C with more gravel (subangular quartzite gravel 1-3mm; 10-25%)	diffuse	very few small fired clay fragments	none visible in profile	informal gravel paving fill/surface? or pre-settlement riverine deposit
5/6	Brown (10YR 5/3)	Dark grayish brown (10YR 4/2)	sandy clay with silt; calcite inclusions (<1 mm; 5%); subangular quartzite gravel (some rounded completely; 1-3 mm; 5%)	diffuse	very few small fired clay fragments	sterile	natural
7	Yellowish brown (10YR 5/4)	Brown (10YR 4/3)	silty clay; hard compaction; calcite inclusions (<1mm; 1%)	diffuse	small to med. Fired clay fragments; small-med. Roots	sterile	natural
8	Yellowish brown (10YR 5/6) slight mottling with yellowish brown (10YR 5/4 & 10YR 5/8)	Dark yellowish brown (10YR 4/4) slight mottling with yellowish brown (10YR 5/4 & 10YR 5/8)	clay; hard compaction; sticky and plastic	diffuse	a few small frag of fired clay; small roots	sterile	natural

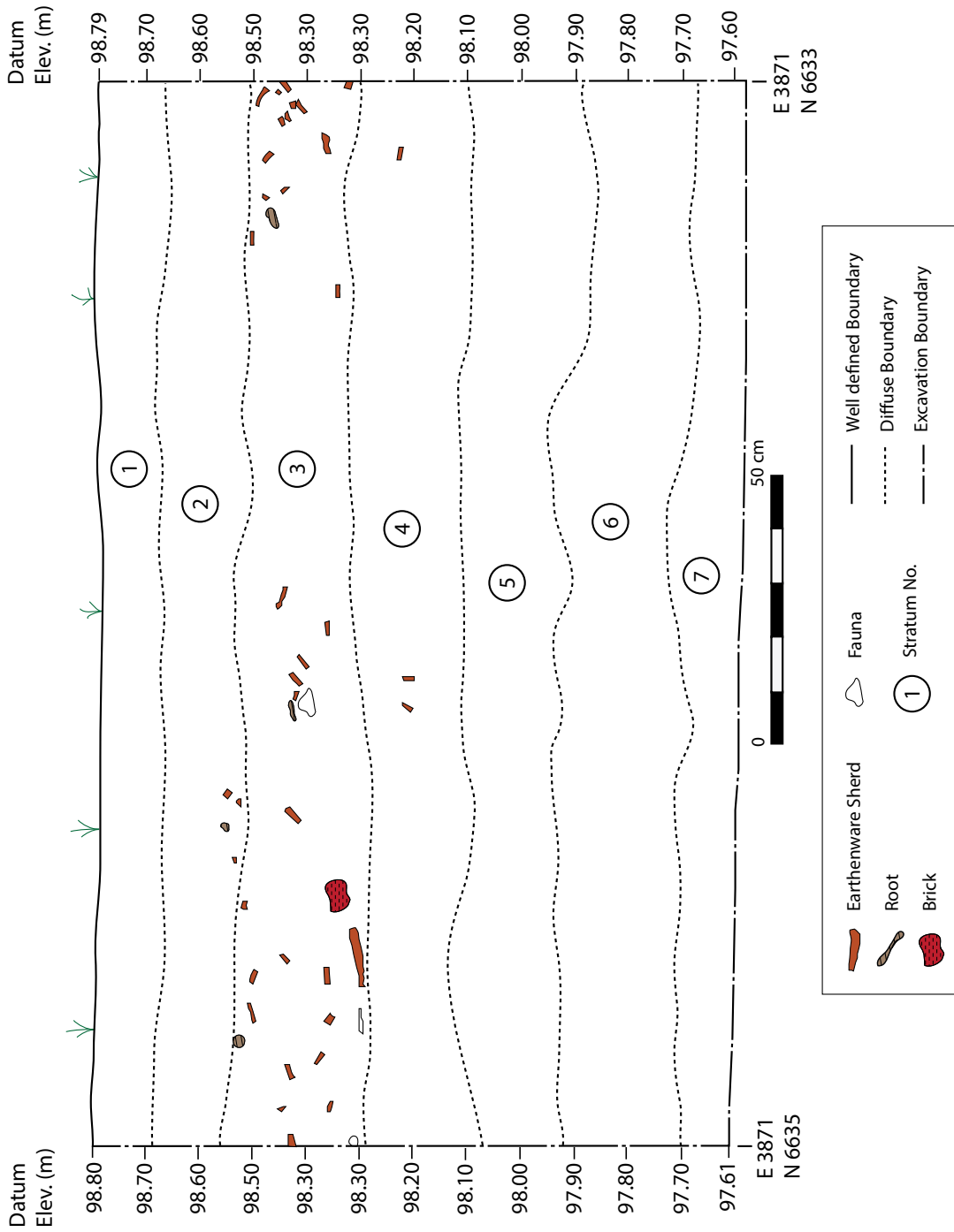


Figure H.3. TP-03 east wall profile

**Table H.4. TP-03 profile strata characterizations**

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Boundary	Disturbances	Cultural materials	Interpretation
1	Dark grayish brown (10YR 4/2)	Very dark gray (10YR 3/1)	loam; moderate compaction; well sorted, not blocky; calcite (<1 mm; 5%)	very diffuse below	small roots	none in profile	topsoil
2	dark grayish brown (10YR 4/2)	Very dark gray (10YR 3/1)	silty clay; mod to hard compaction; med. Blocky structure; calcite inclusions (<1mm; 3%)	diffuse above and below	fired clay fragments; roots	low density of small sherds	overburden
3	Dark grayish brown (10YR 4/2)	dark grayish brown (2.5Y 4/2) to grayish brown (2.5Y 5/2)	silty clay; hard compaction; med. to coarse blocky structure; calcite inclusions (<1 mm; 1-2 %)	diffuse above and below	small to med. Fired clay fragments; small to med. Roots	abundant earthenware sherds (1 cm - 8 cm; some of which are lying flat)	fill with ephemeral surfaces
4	Grayish brown (2.5Y 5/2) with faint mottles (0.5 - 1 cm) of light yellowish brown (2.5Y 6/4)	Olive brown (2.5Y 4/3)	silty clay; hard compaction; med. to coarse blocky structure; calcite inclusions (<1 mm; 3 %)	diffuse above and below	small fired clay fragments; small roots	a few small earthenware sherds	fill
5	Light yellowish brown (2.5Y 6/3) to olive brown (2.5Y 5/3) with diffuse mottles (0.5 - 1 cm) of light yellowish brown (2.5Y 6/4)	Olive brown (2.5Y 4/3)	silty clay; hard compaction; med. blocky structure; calcite inclusions (<1mm; 1%)	diffuse above; very diffuse below	small roots	none in profile	fill with low density of artifacts
6	Light yellowish brown (2.5Y 6/4) with diffuse mottles (0.5 - 1 cm) grayish brown (2.5Y 5/2)	Olive brown (2.5Y 4/3)	clay; hard compaction; fine blocky structure to consolidated; calcite inclusions (<1mm; 1%); subangular laterite inclusions (2-8 mm 5-7%)	very diffuse above and below	small roots	none in profile	natural with a few intrusive sherds

(continued)

**Table H.4.** continued

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Boundary	Disturbances	Cultural materials	Interpretation
7	Light yellowish brown (2.5Y 6/4) with very diffuse mottles (0.5 - 1 cm) grayish brown (2.5Y 5/2)	Olive brown (2.5Y 4/3)	clay; hard compaction; consolidated; calcite inclusions (<1mm; 1%); subangular laterite inclusions (2-8 mm 5-7%)	very diffuse above	small roots	sterile	natural with a few intrusive sherds

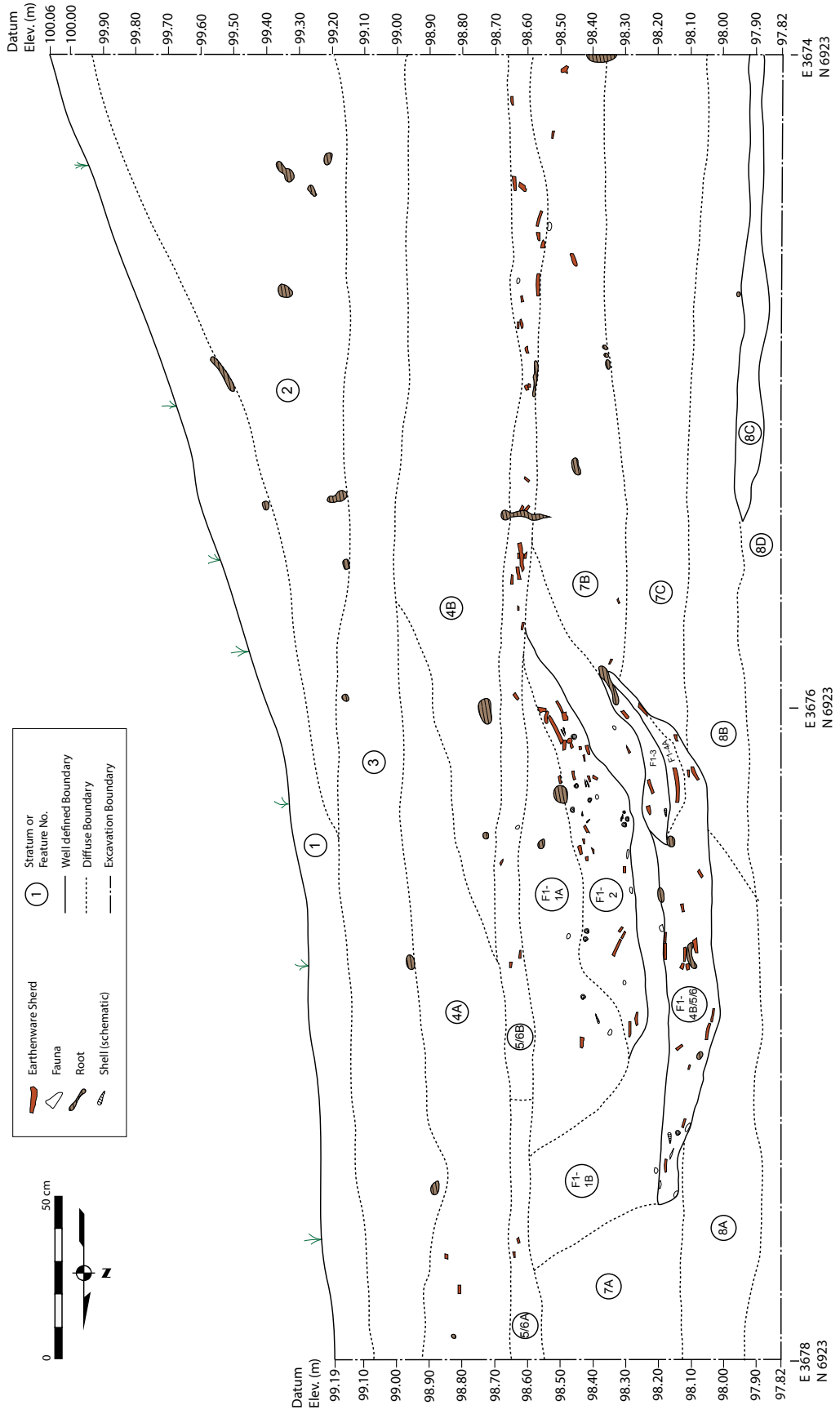


Figure H.4. TP-04 south wall profile



**Table H.5. TP-04 profile strata characterizations**

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Disturbances	Cultural materials	Boundary	Interpretation
1	Light yellowish brown (2.5Y 6/3)	Very dark grayish brown (10YR 3/2)	clay, slightly silty; coarse blocky structure; moderate compaction; calcite inclusions (<1mm; 2%)	abundant burrows; small roots	none	very diffuse below	topsoil/ natural mound fill
2	Light yellowish brown (2.5Y 6/3)	Very dark grayish brown (10YR 4/2)	clay, slightly silty; medium blocky structure; moderate compaction; calcite inclusions (<1mm; 2%)	fired clay fragments; snail shells; a few burrows; roots	none	very diffuse with strats 1 & 3; diffuse with 2B and 2C	post-occupation mound fill
3	Light yellowish brown (2.5Y 6/3)	Dark grayish brown (10YR 4/2)	clay, slightly silty; medium blocky structure; moderate compaction; calcite inclusions (<1mm; 2%)	a few fragments of fired clay; roots	none	very diffuse boundary with strat 4A; diffuse boundary with strat 4B	post-occupation fill
4A	Light olive brown (2.5Y 5/3)	Very dark grayish brown (2.5Y 3/2)	clay, slightly silty; fine blocky structure; moderate compaction; calcite inclusions (<1mm; 1%)	a few fragments of fired clay; rootlets	a few small earthenware sherds	diffuse with strat 4B; very diffuse with strat 5/6A	low density cultural fill
4B	Light brownish gray (2.5Y 6/2) to grayish brown (2.5Y 5/2) mottled (1-2 cm; 30%) with brownish yellow (10YR 6/6)	Olive brown (2.5Y 4/3)	clay, slightly silty; fine blocky structure; moderate compaction; calcite inclusions (<1mm; 3%)	a few fragments of fired clay; snail shells; roots		diffuse with 4B; very diffuse with 5/6B	low density cultural fill

Table H.5. continued

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Disturbances	Cultural materials	Boundary	Interpretation
5/6A	Light brownish gray (2.5Y 6/2) to grayish brown (2.5Y 5/2) mottled (1-2 cm; 25%) with brownish yellow (10YR 6/6)	Olive brown (2.5Y 4/3)	clay, slightly silty; fine blocky structure; moderate compaction; calcite inclusions (<1mm; 3%)	moderate density of fired clay fragments; small roots	high density of earthenware sherds; low density of bone fragments;	diffuse	high density cultural fill with ephemeral surfaces
5/6B	Light olive brown (2.5Y 5/3)	Very dark grayish brown (2.5Y 3/2)	clay, slightly silty; fine blocky structure; moderate compaction; calcite inclusions (<1mm; 1%)	moderate density of fired clay fragments; small roots	high density of earthenware sherds; low density of bone fragments;	diffuse	high density cultural fill with ephemeral surfaces
F1-1A	Light brownish gray (2.5Y 6/2) to grayish brown (2.5Y 5/2) mottled (1-2 cm; 25%) with brownish yellow (10YR 6/6)	Olive brown (2.5Y 4/3)	clay, slightly silty; fine blocky structure; moderate compaction; calcite inclusions (<1mm; 1%)	low density of small fired clay fragments; 2 small burrows; small roots	low density of earthenware sherds; low density of shell and bone	well defined with strat F1-2; diffuse with rest	second infilling of pit (Feat. 1) with low density cultural fill
F1-1B	Light brownish gray (2.5Y 6/2) to grayish brown (2.5Y 5/2) mottled (1-3 cm; 30%) with brownish yellow (10YR 6/6)	Olive brown (2.5Y 4/3)	clay, slightly silty; fine blocky structure; moderate compaction	low density of small fired clay fragments; small roots	low density of earthenware sherds; low density of shell and bone	well defined with strats F1-1b, F1-3 and F1-4B/5/6; diffuse with strat 7	first infilling of pit (Feat. 1) with low density cultural fill

Table H.5. continued

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Disturbances	Cultural materials	Boundary	Interpretation
F1-2	Light brownish gray (2.5Y 6/2) diffuse mottles (1-2 cm; 15%) brownish yellow (10YR 6/6)	Olive brown (2.5Y 4/3)	clay; very fine block structure; moderate to soft compaction	high density of fired clay fragments; 2 small burrows; small roots	high density of earthenware sherds; moderate density of bone fragments; high density of shell; low density of charcoal fragments	well defined with strat F1-1A and F1-1B	cultural refuse deposit in pit (Feat. 1)
F1-3	Light gray (2.5Y 7/1)	Grayish brown (2.5Y 5/2)	ashy clay; well sorted; very soft compaction	moderate density of fired clay fragments;	high density of earthenware sherds; moderate density of shell	well defined	ashy cultural refuse deposit in pit (Feat. 1)
F1-4A	Light gray (2.5Y 7/1)	Grayish brown (2.5Y 5/2)	clay slightly ashy; soft compaction; well sorted	moderate density of fired clay fragments;	moderate density of earthenware sherds; moderated density of charcoal fragments; moderate density of shell	well defined	ashy cultural refuse deposit in pit (Feat. 1)
F1-4B/5/6	Light brownish gray (2.5Y 6/2) with diffuse mottles (1-2cm; 15%) brownish yellow (10YR 6/6)	Grayish brown (2.5Y 5/2)	clay; very fine blocky structure; moderate compaction; calcite inclusions (<1mm; <1%)	high density of fired clay fragments; small to medium roots	high density of earthenware sherds; moderate density of bone and shell; high density of charcoal fragments	well defined	cultural refuse deposit in pit (Feat. 1)

Table H.5. continued

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Disturbances	Cultural materials	Boundary	Interpretation
7A	grayish brown (2.5Y 5/2) strong mottles (1-3 cm; 40%) brownish yellow (10YR 6/6)	Dark grayish brown (10YR 4/2)	clay, slightly silty; coarse blocky structure; moderate compaction; calcite inclusions (<1mm; 3%)	low density of fired clay fragments; small roots	none in profile	diffuse above and below; well defined with strats F1-1B and F1-4B/5/6	natural with a few intrusive artifacts
7B	Light brownish gray (2.5Y 6/2) to Grayish brown (10YR 5/2)	Dark grayish brown (10YR 4/2)	clay, slightly silty; very fine blocky structure; moderate compaction; calcite inclusions (<1mm; 3%)	low density of fired clay fragments; small roots	low density of earthenware sherds;	diffuse above and below; well defined with strats F1-1B, F1-3, F1-4A and F1-4B/5/6	natural with a few intrusive artifacts
7C	Light brownish gray (2.5Y 6/2) to Grayish brown (2.5Y 5/2) with strong mottles (1- 5 cm; 45%) of brownish yellow (10YR 6/6)	Dark grayish brown (10YR 4/2)	clay, slightly silty; consolidated structure; moderate compaction; calcite inclusions (<1mm; 1%);	small roots	sterile	diffuse above and below; well defined with strats F1-3, F1-4A and F1-4B/5/6	natural
8A	Grayish brown (2.5Y 5/2) strong mottles (1-5 cm; 45%) brownish yellow (10YR 6/6)	Dark grayish brown (10YR 4/2)	clay; fine blocky structure; hard compaction; calcite inclusions (<1mm; <1%)	small roots	sterile	diffuse above and below; well defined with strat F1-4B/5/6	natural
8C	light yellowish brown (10YR 6/4) diffuse mottles (1-3 cm; 20%) brownish yellow (10YR 6/6) and (10%) with light brownish gray (2.5Y 6/2)	same as dry	clay; consolidated structure; hard compaction;	small roots	sterile	diffuse above and below	natural

**Table H.5. continued**

Stratum	Dry Munsell	Wet Munsell	Matrix Description	Disturbances	Cultural materials	Boundary	Interpretation
8D	light yellowish brown (10YR 6/4) mottled (1-3 cm; 15%) with brownish yellow (10YR 6/6) and (15%) with light brownish gray (2.5Y 6/2)	same as dry	clay; consolidated structure; hard compaction;	small roots	sterile	diffuse above	natural

## APPENDIX I

### **Diagnostic and Non-Diagnostic Ceramic Variables**

This appendix provides lists of the quantitative and qualitative variables analyzed for the diagnostic and non-diagnostic ceramics. The values listed below for each variable are those used in the tables in Appendices K and L. Many of the variables and values I chose are adapted from those used by Bronson (1976), Mudar (1993), Lertrit (2001), Onsuwan-Eyre (2006) and Aussavamas (2012) in their analyses of prehistoric and protohistoric ceramic assemblages elsewhere in central Thailand; however, I have modified and added to these variables and values due to the characteristics of the Kamphaeng Saen assemblage and my own research interests. The metric variables I assessed for the diagnostic sherds follow the definitions outlined by Sinopoli (1991: Table 3.2, Figure 3.5). Figures of the rim and base forms listed for the diagnostic ceramics are provided in Appendix J.



## Diagnostic ceramic variables

### A. Diagnostic sherd ID

The first three digits are the provenance designation (PD, see Appendix I) and the second three digits are a unique number for each diagnostic sherd from the provenance (e.g., "055.003" is the third diagnostic sherd from PD 055).

### B. Vessel Part

- 0 indeterminate
- 1 other
- 2 rim
- 3 base
- 4 shoulder
- 5 body
- 6 rim to base
- 7 rim and neck
- 8 rim and body
- 9 spout

### C. Vessel Form

- 0 indeterminate
- 1 unrestricted
- 2 restricted

### D. Rim Form

- 0 indeterminate
- 99 Not Applicable (e.g., a base sherd)
- For all others see Appendix J

### E. Base Form (see Appendix J)

- 0 indeterminate
- 1 rounded
- 2 flat
- 3 ring
- 4 wedge
- 99 Not Applicable (e.g., a rim sherd)

## Diagnostic ceramic variables continued

### F. Vessel Class (see Chapter 6 for definitions)

- 0 indeterminate
- 1 Semi-fine ware BRM
- 2 Semi-fine ware restricted vessel
- 3 Semi-Fine ware unrestricted vessel
- 4 Semi-Fine ware indeterminate form
- 5 coarse ware indeterminate form
- 6 coarse ware restricted small rim diameter (<15cm)
- 7 coarse ware restricted medium rim diameter (15-28 cm)
- 8 coarse ware restricted large rim diameter (>28 cm)
- 9 coarse ware restricted indeterminate size
- 10 coarse ware plates and lamps
- 11 coarse ware unrestricted small rim diameter ( 8-37 cm)
- 12 coarse ware unrestricted large rim diameter (>37 cm)
- 13 coarse ware unrestricted indeterminate size

### G. Exterior surface condition

- 0 indeterminate
- 1 easily observable
- 2 eroded
- 3 fragmented (i.e. surface is chipped or broken away, but not eroded)
- 4 fire clouding

### H. ID number of refitting sherds

### I. Oxidation

- 0 indeterminate
- 1 well-oxidized
- 2 incompletely oxidized
- 3 reduced

### J. Exterior paste color (from Munsell Soil Color Chart)

- 0 indeterminate
- 1 black (5YR, 7.5YR, Gley 1)
- 2 gray (10YR; 2.5Y)
- 3 light gray (10YR; 2.5Y)

## Diagnostic ceramic variables continued

- 4 light brown, light reddish brown, to brown (2.5YR, 5YR, 7.5YR, 10YR)
- 5 "buff" or pale brown, very pale brown to pale yellow (10 YR)
- 6 pink to pinkish white (5YR; 7.5YR)
- 7 "orange" or reddish yellow to yellowish red (5YR; 7.5YR)
- 8 light red (2.5YR)
- 9 red (10R; 2.5YR)
- 10 white (10YR)
- 11 dark gray to very dark gray (5YR; 7.5YR; 10YR, Gley 1)
- 12 dark brown (7.5YR; 10YR)
- 13 reddish brown (2.5YR; 5YR)

### K. Core paste color (from Munsell Soil Color Chart)

- 0 indeterminate
- 1 black (5YR, 7.5YR, Gley 1)
- 2 gray (10YR; 2.5Y)
- 3 light gray (10YR; 2.5Y)
- 4 light brown, light reddish brown, to brown (2.5YR, 5YR, 7.5YR, 10YR)
- 5 "buff" or pale brown, very pale brown to pale yellow (10 YR)
- 6 pink to pinkish white (5YR; 7.5YR)
- 7 "orange" or reddish yellow to yellowish red (5YR; 7.5YR)
- 8 light red (2.5YR)
- 9 red (10R; 2.5YR)
- 10 white (10YR)
- 11 dark gray to very dark gray (5YR; 7.5YR; 10YR, Gley 1)
- 12 dark brown (7.5YR; 10YR)
- 13 reddish brown (2.5YR; 5YR)

### L. Interior paste color (from Munsell Soil Color Chart)

- 0 indeterminate
- 1 black (5YR, 7.5YR, Gley 1)
- 2 gray (10YR; 2.5Y)
- 3 light gray (10YR; 2.5Y)
- 4 light brown, light reddish brown, to brown (2.5YR, 5YR, 7.5YR, 10YR)
- 5 "buff" or pale brown, very pale brown to pale yellow (10 YR)
- 6 pink to pinkish white (5YR; 7.5YR)
- 7 "orange" or reddish yellow to yellowish red (5YR; 7.5YR)

## Diagnostic ceramic variables continued

- 8 light red (2.5YR)
- 9 red (10R; 2.5YR)
- 10 white (10YR)
- 11 dark gray to very dark gray (5YR; 7.5YR; 10YR, Gley 1)
- 12 dark brown (7.5YR; 10YR)
- 13 reddish brown (2.5YR; 5YR)

### M. Exterior slip color (from Munsell Soil Color Chart)

- 0 indeterminate
- 1 black (5YR, 7.5YR, Gley 1)
- 2 gray (10YR; 2.5Y)
- 3 light gray (10YR; 2.5Y)
- 4 light brown, light reddish brown, to brown (2.5YR, 5YR, 7.5YR, 10YR)
- 5 "buff" or pale brown, very pale brown to pale yellow (10 YR)
- 6 pink to pinkish white (5YR; 7.5YR)
- 7 "orange" or reddish yellow to yellowish red (5YR; 7.5YR)
- 8 light red (2.5YR)
- 9 red (10R; 2.5YR)
- 10 white (10YR)
- 11 dark gray to very dark gray (5YR; 7.5YR; 10YR, Gley 1)
- 12 dark brown (7.5YR; 10YR)
- 13 thick reddish brown (an unusually thick slip with distinct color of Munsell Brown 7.5YR to Dusky Red 7.5R; see Onsuwan-Eyre 2006:513)

### N. Exterior slip type

- 0 indeterminate
- 1 self-slipped
- 2 slipped
- 3 slipped or self-slipped (indeterminate which one)
- 9 unslipped

### O. Exterior surface treatment

- 0 indeterminate
- 1 none
- 2 wiped or smoothed
- 3 burnished
- 4 polished

## Diagnostic ceramic variables continued

5 lightly burnished or polished (usually unable to determine which one)

### P. Interior slip color (from Munsell Soil Color Chart)

0 indeterminate

1 black (5YR, 7.5YR, Gley 1)

2 gray (10YR; 2.5Y)

3 light gray (10YR; 2.5Y)

4 light brown, light reddish brown, to brown (2.5YR, 5YR, 7.5YR, 10YR)

5 "buff" or pale brown, very pale brown to pale yellow (10 YR)

6 pink to pinkish white (5YR; 7.5YR)

7 "orange" or reddish yellow to yellowish red (5YR; 7.5YR)

8 light red (2.5YR)

9 red (10R; 2.5YR)

10 white (10YR)

11 dark gray to very dark gray (5YR; 7.5YR; 10YR, Gley 1)

12 dark brown (7.5YR; 10YR)

13 thick reddish brown (an unusually thick slip with distinct color of Munsell Brown 7.5YR to Dusky Red 7.5R; see Onsuwan-Eyre 2006:513)

### Q. Interior slip type

0 indeterminate

1 self-slipped

2 slipped

3 slipped or self-slipped (indeterminate which one)

9 unslipped

### R. Interior surface treatment

0 indeterminate

1 none

2 wiped or smoothed

3 burnished

4 polished

5 lightly burnished or polished (usually unable to determine which one)

### S. Mat or cord-wrapped paddle mark type (see Bronson1976:136-139; Chapter 6)

0 indeterminate

1 none

## Diagnostic ceramic variables continued

- 2 cord-marking
- 3 mat-marking
- 4 cord-mark incised

T. Mat or cord-wrapped paddle mark impression width (mm)

U. Decoration

- 0 indeterminate
- 1 none
- 2 incised horizontal line
- 3 incised triangles
- 4 incising
- 5 two impressed bands
- 6 three impressed bands
- 7 finger impressions
- 8 circular impressions
- 9 impressed conical circles
- 10 line and wave

V. Sherd Size

Value equals the length (cm) of the sides of the smallest square the sherd fits inside (e.g., 3 = entire sherd fits inside a 3 x 3 cm square).

W. Weight (g)

X. Carination Angle (degrees)

Y. Estimated rim diameter (cm)

Z. Estimated base diameter (cm)

AA. Rim height (mm)

AB. Neck height (mm)

AC. Height to maximum diameter (mm)

AD. Vessel height (mm)



## Diagnostic ceramic variables continued

AE. Rim thickness (mm)

AF. Neck thickness (mm)

AG. Body thickness (mm)

AH. Rim angle (degrees)

AI. Paste texture (adapted with modification from Onsuwan-Eyre 2006:517)

0 indeterminate

1 fine to semi-fine (dense paste with few to no pores; temper is hardly visible; usually high-fired)

2 coarse (temper and pores are large, platy loose fabric; fabric is occasionally friable)

AJ. Primary inclusion type (adapted from Mudar 1993: 263 and Onsuwan-Eyre 2006:517)

0 indeterminate

1 none

2 fine quartz

3 coarse quartz

4 fine sand

5 coarse sand

6 hematite

7 calcite

8 mica

9 grog

10 organic

AK. Fine sand inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AL. Coarse sand inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AM. Fine Quartz inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

**Diagnostic ceramic variables continued**

AN. Coarse Quartz inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AO. Hematite inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AP. Grog inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AQ. Mica inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AR. Calcite inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

AS. Organic inclusions (%; from Munsell Soil Color Chart for Estimating Proportions of Coarse Fragments)

## Non-Diagnostic ceramic variables

A. Provenance Designation (see Appendix H)

B. Count

C. Weight (g)

D. Oxidation

- 0 indeterminate
- 1 well-oxidized
- 2 incompletely oxidized
- 3 reduced

E. Paste texture (adapted with modification from Onsuwan-Eyre 2006:517)

- 0 indeterminate
- 1 fine to semi-fine (dense paste with few to no pores; temper is hardly visible; usually high-fired)
- 2 coarse (temper and pores are large, platy loose fabric; fabric is occasionally friable)

F. Temper and Inclusions

- 0 indeterminate
- 1 none
- 2 quartz and/or sand
- 3 organic
- 4 grog or fired clay mixed with iron oxide (see Aussavamas 2012:14)
- 5 hematite

G. Mat or cord-wrapped paddle marks (see Bronson1976:136-139)

- 0 indeterminate
- 1 none
- 2 cord-marking (impressions made with twisted or woven fibers on a paddle)
- 3 mat-marking (impressions made with untwisted fibers on a paddle)
- 4 cord-marked incised (cord marking cross-cut with thinner incisions)
- 5 cross-hatched mat-marking (mat-marks perpendicularly applied over one another)

## Non-Diagnostic ceramic variables continued

### H. Slip location

- 0 indeterminate
- 1 unslipped
- 2 slip only on exterior
- 3 slip only on interior
- 4 slip on both exterior and interior

### I. Exterior slip type

- 0 indeterminate
- 1 self-slipped
- 2 slipped
- 3 unslipped

### J. Exterior slip color (from Munsell Soil Color Chart)

- 0 indeterminate
- 1 black (5YR)
- 2 gray to dark gray (5YR; 7.5YR)
- 3 light gray (5YR; 7.5YR)
- 4 brown to dark brown (7.5YR)
- 5 "buff" or light brown, very pale brown to pale yellow (7.5YR; 10 YR; 2.5 Y)
- 6 pink to pinkish white (10R; 2.5YR; 5YR; 7.5YR)
- 7 "orange" or reddish yellow to yellow (5YR; 7.5YR)
- 8 light red (10R; 2.5YR)
- 9 red (7.5R; 10R; 2.5YR)
- 10 white (10R; 5YR)
- 11 thick red-brown (an unusually thick slip with distinct color of Munsell Reddish Brwon 2.5YR 5/4 to 5YR 5/4; see Onsuwan-Eyre 2006:513)
- 98 self-slipped
- 99 unslipped

### K. Exterior surface treatment

- 0 indeterminate
- 1 none
- 2 wiped or smoothed
- 3 burnished
- 4 polished
- 5 lightly burnished or polished (usually unable to determine which one)

## Non-Diagnostic ceramic variables continued

### L. Interior slip type

- 0 indeterminate
- 1 self-slipped
- 2 slipped
- 3 unslipped

### M. Interior slip color (from Munsell Soil Color Chart)

- 0 indeterminate
- 1 black (5YR)
- 2 gray to dark gray (5YR; 7.5YR)
- 3 light gray (5YR; 7.5YR)
- 4 brown to dark brown(7.5YR)
- 5 "buff" or light brown, very pale brown to pale yellow (7.5YR; 10 YR; 2.5 Y)
- 6 pink to pinkish white (10R; 2.5YR; 5YR; 7.5YR)
- 7 "orange" or reddish yellow to yellow (5YR; 7.5YR)
- 8 light red (10R; 2.5YR)
- 9 red (7.5R; 10R; 2.5YR)
- 10 white (10R; 5YR)
- 11 thick red-brown (an unusually thick slip with distinct color of Munsell Brown 7.5YR to Dusky Red 7.5R; see Onsuwan-Eyre 2006:513)
- 98 self-slipped
- 99 unslipped

### N. Interior surface treatment

- 0 Indeterminate
- 1 None
- 2 wiped or smoothed
- 3 burnished
- 4 polished
- 5 lightly burnished or polished (usually unable to determine which one)

### O. Carination angle (degrees)

### P. Number of ridges, ribs, fillets, or flanges associated with carination (see Bronson 1976:125)

## APPENDIX J

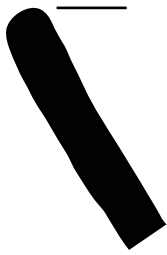
### **Ceramic Rim and Base Forms**

The following rim and base forms were identified during the analysis of the excavated ceramics. All rim profiles are depicted with the interior to the right and exterior to the left, following conventions used in Thai archaeological drawings.

Appendix K provides data on the diagnostic ceramics from the KSAP excavations; the codes listed here correspond to the rim form (Variable D) and base form (Variable E) columns in Table K.1. of that appendix. Some forms with a similar shape, but different curvature (e.g., in-turning and out-turning simple round rims) have been subdivided as indicated by a lowercase letter after the numeric code (e.g., 01a). Rims with this shape, but without a sufficient amount of the vessel to determine its curvature have been designated with the numeric code and no letter subdivision (e.g., a 01 is a simple round rim that is too incomplete to be identified as either in-turning or out-turning).

Rim Forms

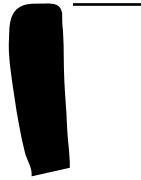
01a (simple round)



01a



01a



01a



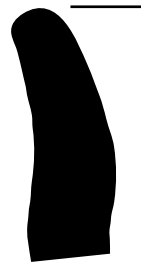
01b



01b



01b



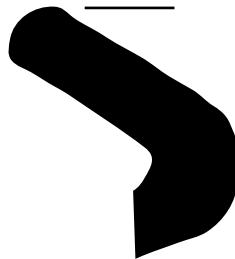
01b



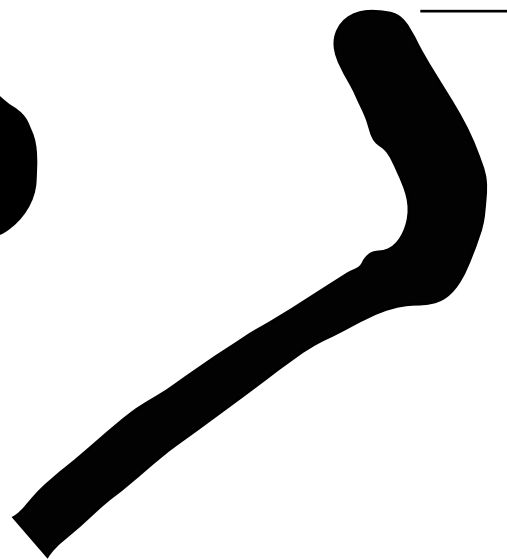
01c



01c



01c





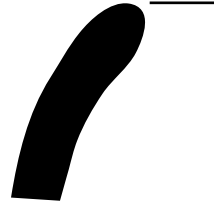
01d



01d



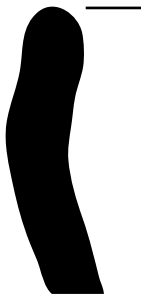
01e



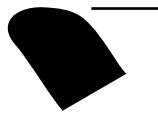
01e



01f



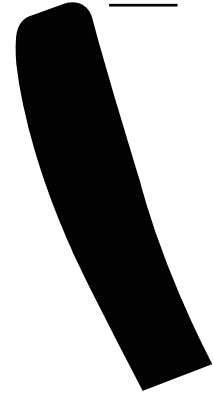
02a (simple cut/flat)



02a



02a



02b



03a (simple thinned)



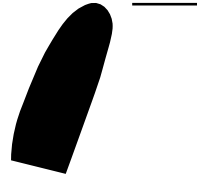
03b



03c



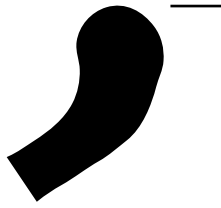
03d



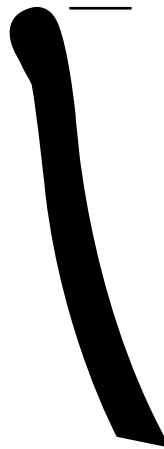
04a (simple bulbous)



04b



05a (simple thickened exterior)



05b



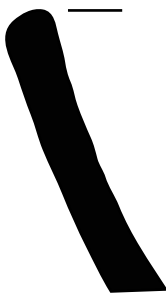
06 (simple thickend interior)



07 (simple thickened bulbous tee)



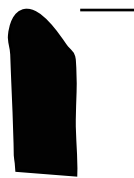
08 (simple out-bevelled)



09 (simple triangular out-bevelled)

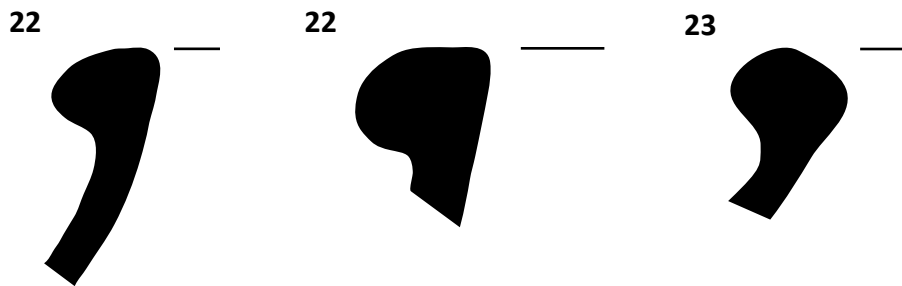
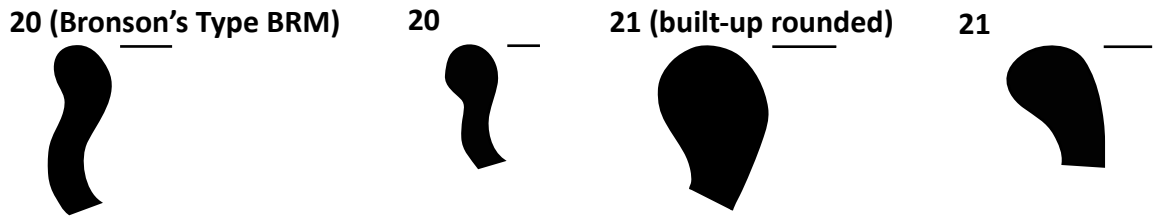
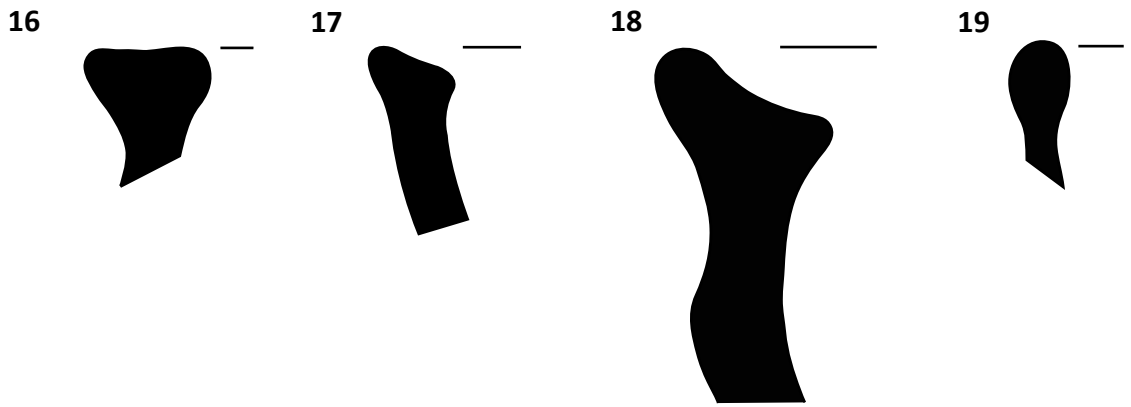
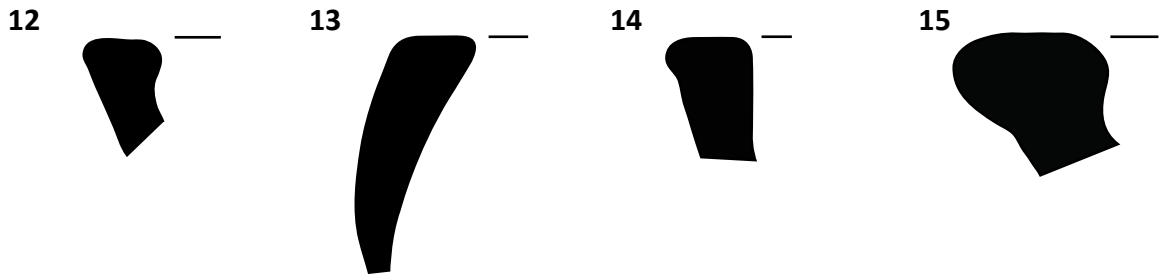


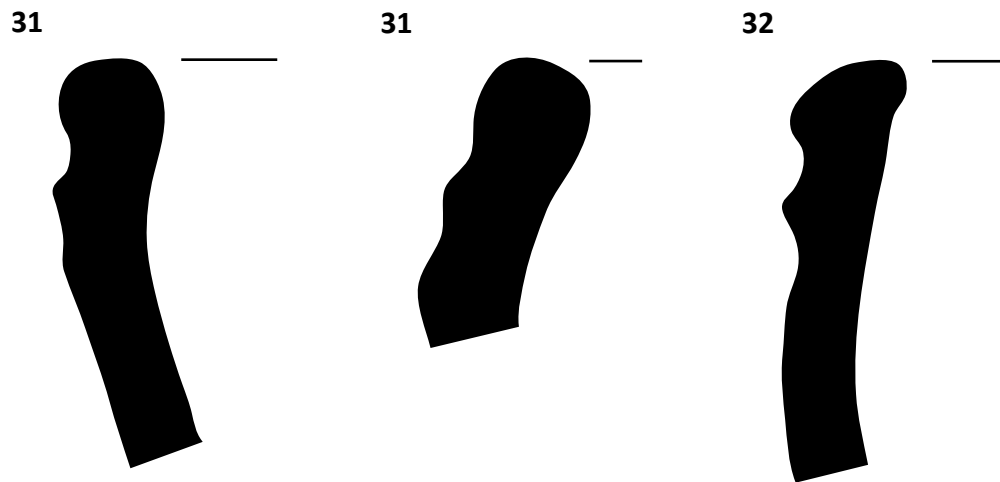
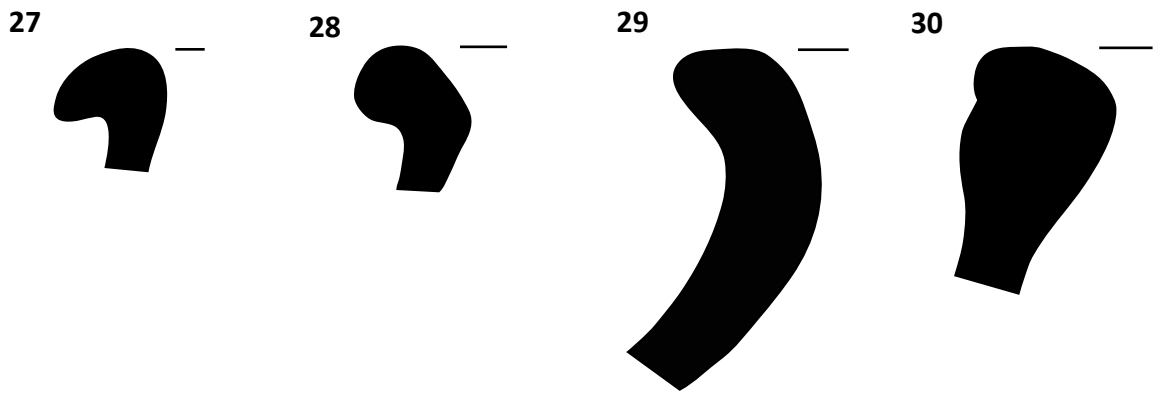
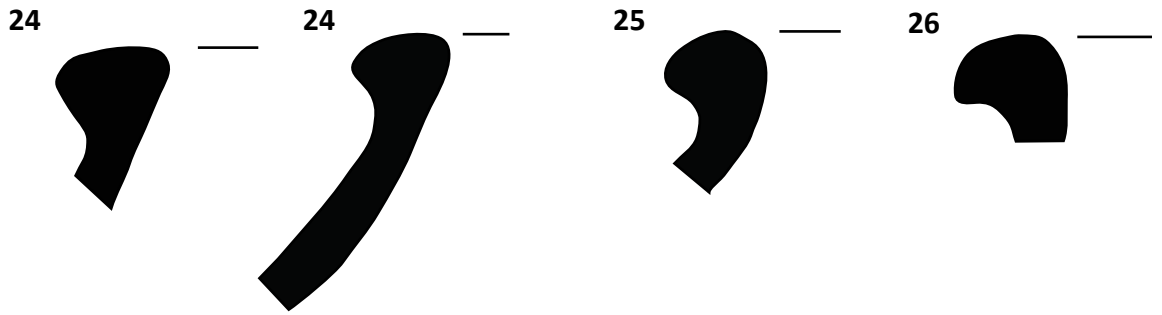
10 (simple thickened in-bevelled)

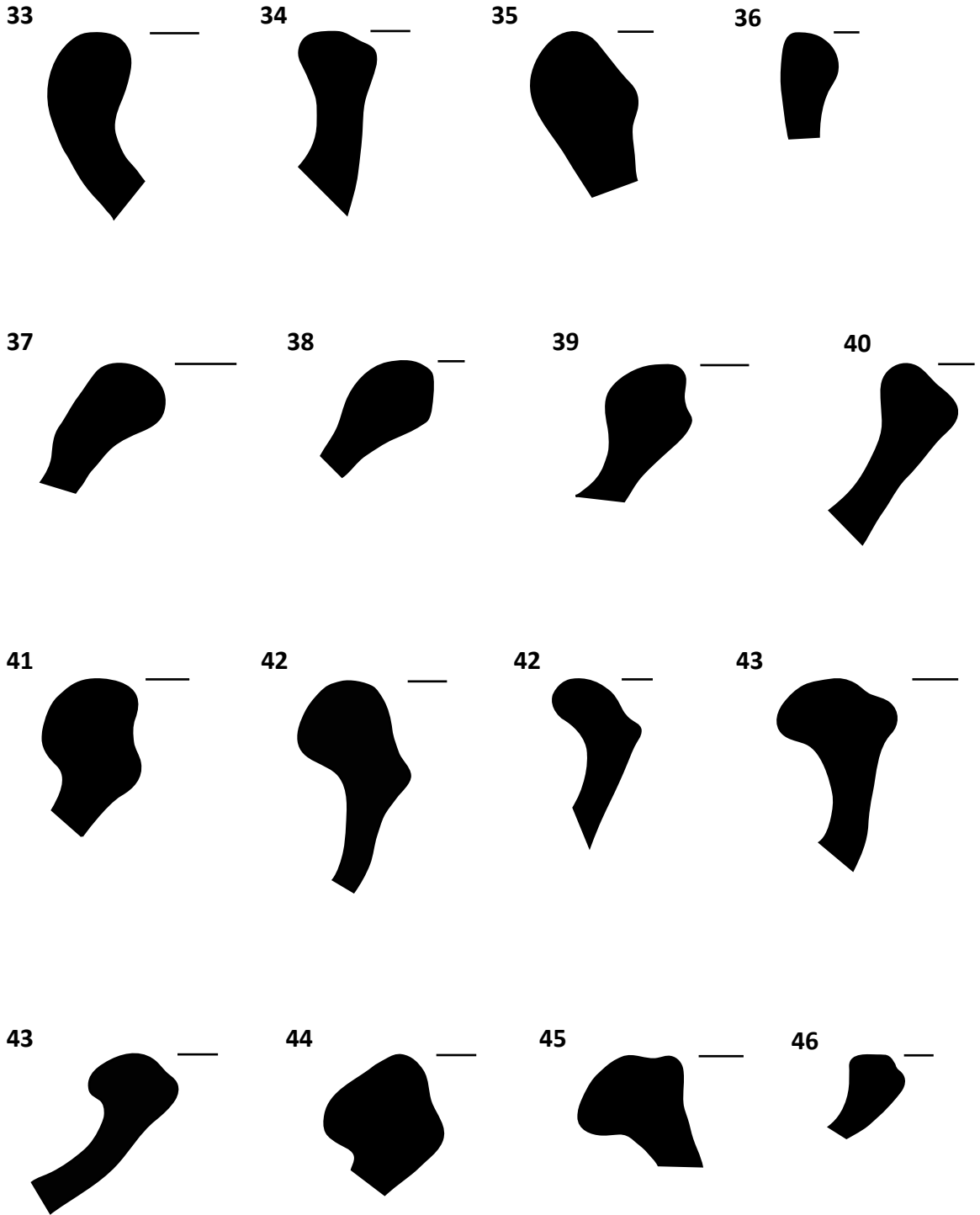


11 (simple thickened in-bevelled lipped)

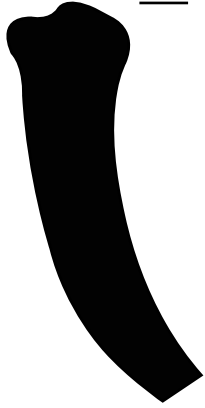




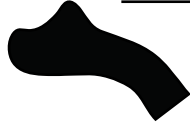




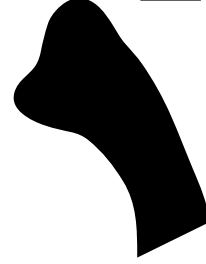
47



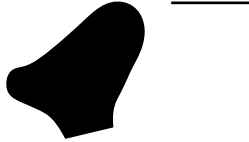
48



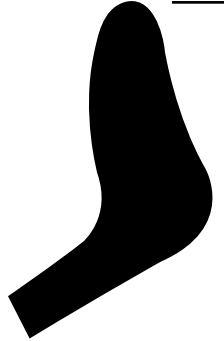
49



50



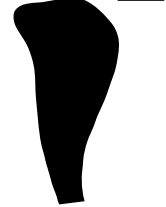
51



52



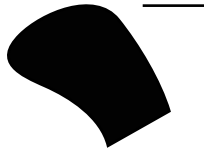
53



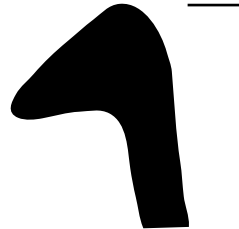
54



55

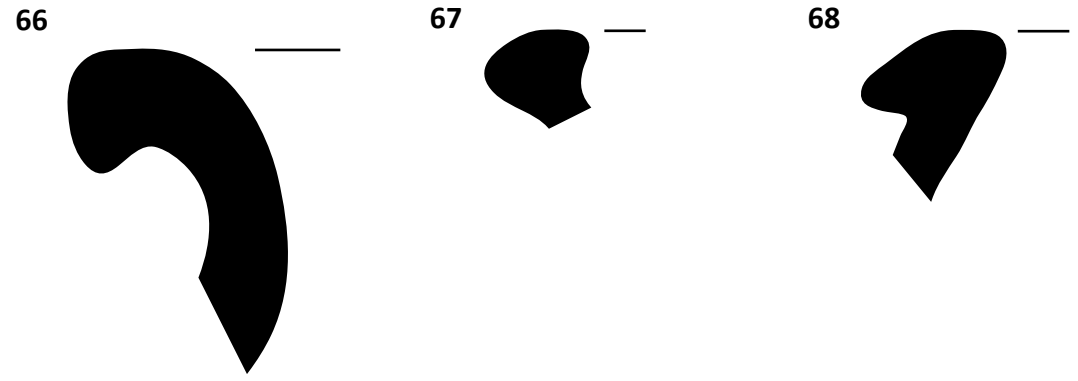
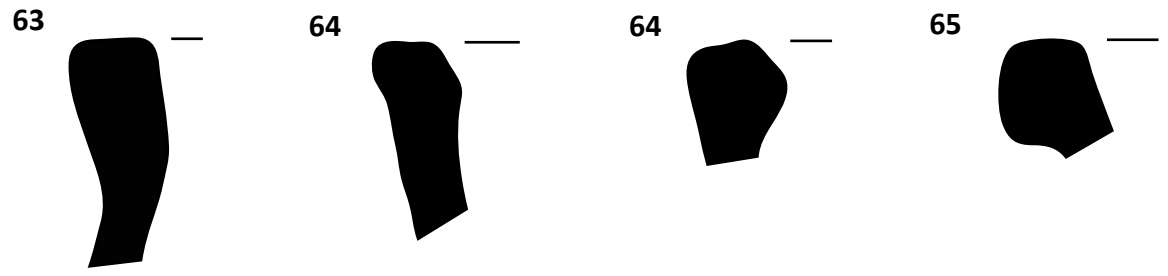
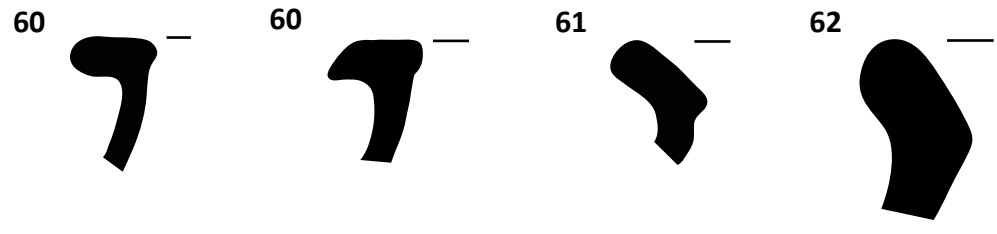
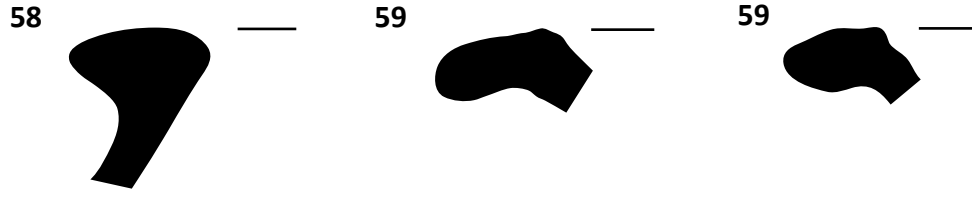


56



57







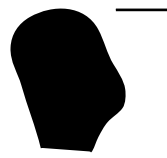
69



70

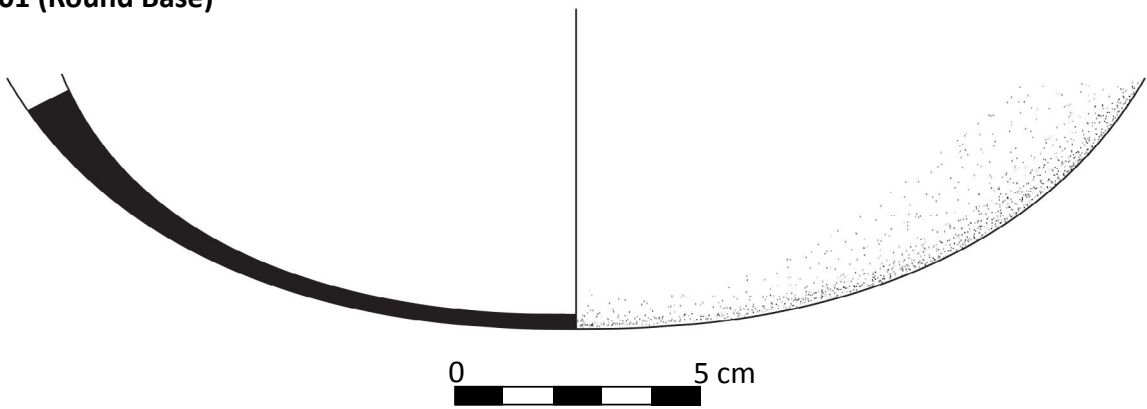


71

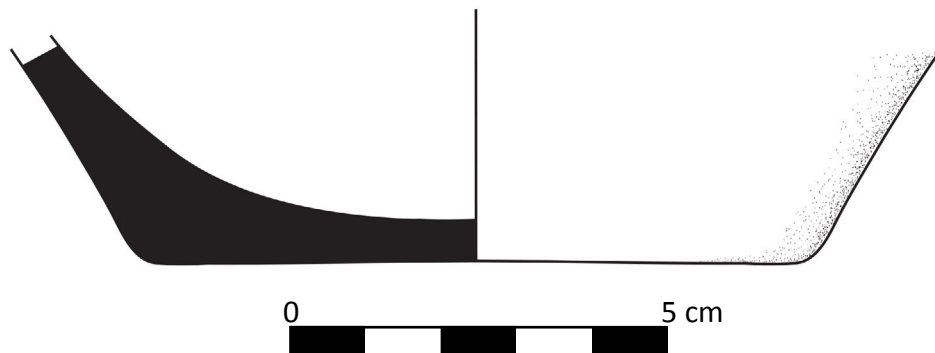


### Base Forms

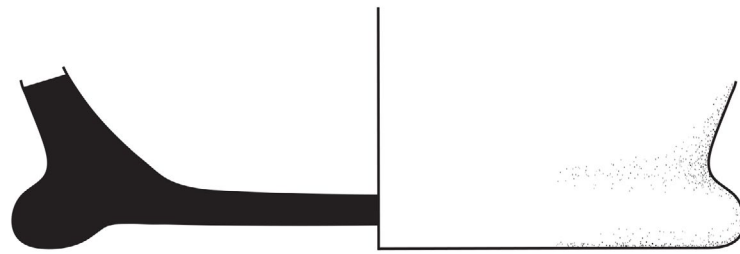
01 (Round Base)



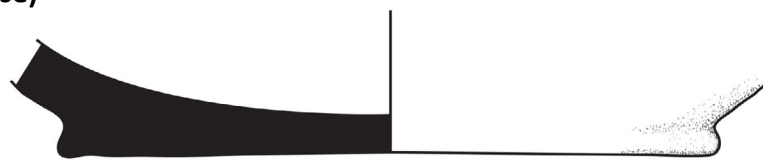
02 (Flat Base)



03 (Ring Base)



04 (Wedge Base)



## APPENDIX K

### **Diagnostic Ceramics**

The measurements for each diagnostic ceramic sherd have been divided between two tables due to space constraints. Table K.1. contains variables A-U, which primarily relate to vessel form, color and surface treatment. Table K.2. contains variables V-AS, which include metric measurements and characterizations of paste and temper. See Appendix J for descriptions of variable codes and their values.

**Table K.1.** Diagnostic ceramics from excavated contexts (variables A-U: attributes related to form, color and surface treatment)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
039.001	9	2	99	99	2	1		3	7	2	3		9	2		9	1	1		1
047.001	9	0	99	99	0	1		3	8	6	8		9	1		9	1	1		1
050.001	9	0	99	99	0	1		3	8	2	8		9	2		9	2	1		1
057.001	2	2	54	99	7	1		3	6	2	5		9	1		9	1	1		1
057.002	3	0	99	3	0	2		1	6	8	6	0	0	0	0	0	0	1		1
057.003	2	0	42	99	0	1		4	2	11	2	4	2	2	4	2	2	1		1
057.004	2	2	58	99	7	2		3	5	11	4		1	2	0	0	0	1		1
057.005	2	2	29	99	6	2		2	12	4	4	9	2	2	4	3	2	1		1
057.006	2	0	69	99	0	2		1	8	9	8		0	0		0	0	1		1
057.007	2	1	01a	99	13	1		1	5	5	5	4	2	5	4	2	5	1		1
057.008	2	1	16	99	13	2		1	5	5	5		1	2		1	2	1		1
058.001	2	1	01a	99	11	1		3	3	1	3		9	1		9	1	1		1
058.002	2	2	25	99	6	1		3	6	1	6		9	1		9	1	1		1
060.001	2	2	54	99	7	2		3	7	5	7		9	1		9	1	1		1
060.002	3	0	99	2	0	1		3	4	11	4		1	2		1	2	1		1
060.003	2	0	19	99	0	2		3	5	2	5		0	0		0	0	1		1
060.004	2	0	01b	99	0	1		3	6	2	6		9	1		9	1	1		1
060.005	2	0	09	99	0	2		3	5	11	11		0	0		0	0	1		1
060.006	2	2	25	99	7	1		3	6	2	5		9	1		9	1	1		1
060.007	2	1	04a	99	11	1		3	3	11	3	9	2	2	9	2	2	1		1
060.008	2	0	20	99	0	1		3	7	5	7		9	2		9	2	1		1
061.001	8	2	60	99	2	1		1	7	7	7		9	1		9	1	1		1
061.002	2	0	21	99	0	1		3	2	2	2		9	1		9	1	1		1
061.003	2	1	37	99	11	1		3	8	2	6		9	1		9	1	1		8
061.004	2	2	38	99	9	2		3	6	11	6		0	0		0	0	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
061.005	2	1	39	99	11	1		3	6	2	6		1	1		1	1	1		1
061.006	2	1	33	99	11	1		3	6	2	6		9	1		9	1	1		1
061.007	2	0	15	99	0	1	061.008	3	6	1	6		9	1		9	1	1		1
061.008	2	0	15	99	0	1	061.007	3	6	1	6		9	1		9	1	1		1
061.009	2	0	39	99	0	1		3	13	11	13		9	1		9	1	1		1
061.010	2	2	25	99	7	1		3	6	11	6		9	1		9	1	1		1
061.011	2	2	27	99	7	1		1	6	6	6		9	1		9	1	1		1
061.012	2	0	26	99	0	1		3	4	2	4		1	1		9	1	1		1
061.013	2	2	21	99	7	1		1	6	6	6		1	1		9	1	1		1
061.014	2	0	60	99	0	2		1	6	6	6		0	0		1	0	1		1
061.015	2	0	56	99	0	1		1	7	6	7		9	1		9	1	1		1
061.016	2	0	62	99	0	2		3	12	2	11		1	0		0	0	1		1
061.017	2	0	22	99	0	1		1	7	5	5		9	1		9	1	1		1
061.018	2	2	65	99	7	1		3	7	2	7		9	1		9	1	1		1
061.019	2	1	02b	99	11	1		3	6	11	6		9	1		9	1	1		1
061.020	2	1	06	99	11	1		3	5	11	11		9	1		9	1	1		1
061.021	2	1	08	99	11	1		3	6	11	6		9	1		9	1	1		1
061.022	2	1	03d	99	11	1		3	6	5	6		9	1		9	1	1		1
061.023	2	1	01a	99	11	1		3	2	11	2		9	1		9	1	1		1
061.024	2	0	0	99	0	1		3	8	2	8		9	1		9	1	1		1
061.025	2	0	01	99	0	2		3	2	1	2		1	1		1	1	1		1
061.026	2	0	07	99	0	1		3	5	11	5		9	1		9	1	1		1
061.027	2	0	21	99	0	1		3	8	2	8		9	1		9	1	1		1
061.028	2	0	21	99	0	1		3	7	3	7		9	2		9	2	1		1
061.029	2	0	54	99	0	1		3	7	11	7		9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
061.030	2	0	0	99	0	1		1	7	7	7		9	1		9	1	1		1
061.031	2	0	21	99	0	1		2	4	5	4		1	1		1	1	1		1
061.032	2	0	01	99	0	5		3	4	4	4	4	2	1		9	1	1		1
061.033	2	0	07	99	0	1		3	2	2	2		9	1		9	1	1		1
061.034	2	0	0	99	0	1		1	6	6	6		9	1		9	1	1		1
062.001	2	2	66	99	7	1		3	8	3	8		9	2		9	2	1		1
062.002	2	2	25	99	7	1		3	5	5	3		1	1		1	1	1		1
062.003	2	1	39	99	11	1		3	7	2	6		9	1		9	1	1		1
062.004	2	2	01b	99	7	1		3	6	3	6		9	1		9	1	1		1
062.005	2	2	23	99	7	1		3	5	8	5		1	2		1	1	1		1
062.006	2	2	21	99	7	2		3	7	3	6		1	0		0	0	1		1
062.007	2	2	42	99	7	1		3	6	3	8		9	1		9	1	1		1
062.008	2	2	04b	99	8	1		3	6	2	6		9	1		9	1	1		1
062.009	2	2	60	99	7	1		1	6	6	6		1	1		1	1	1		1
062.010	2	2	22	99	7	1		3	7	3	6		1	1		9	1	1		1
062.011	2	0	12	99	0	1		1	6	6	6		1	1		1	1	1		1
062.012	2	2	28	99	7	1		3	5	2	7		9	1		9	1	1		1
062.013	2	2	42	99	7	1		3	7	3	7		9	1		9	1	1		1
062.014	2	2	07	99	7	1		4	11	1	11		9	1		9	1	1		1
062.015	2	0	65	99	0	1		3	5	11	5		9	1		9	1	1		1
062.016	2	2	65	99	8	1		1	5	5	5		9	1		9	1	1		1
062.017	2	2	65	99	8	1		1	5	5	5		1	1		9	1	1		1
062.018	2	1	20	99	1	1		3	7	11	7		9	2		9	2	1		1
062.019	2	0	20	99	0	1		1	7	6	7		9	2		9	2	1		1
062.020	2	2	20	99	1	1		2	4	4	4		9	2		9	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
062.021	2	1	05b	99	3	1		3	7	3	7		9	2		9	2	1		1
062.022	2	2	01c	99	7	1		3	2	2	2		9	1		9	1	1		1
062.023	2	1	08	99	11	1		3	6	5	6		9	1		9	1	1		1
062.024	2	1	01a	99	11	1		3	6	11	6		9	1		9	1	1		1
062.025	2	1	01a	99	11	1		3	6	11	6		9	1		9	1	1		1
062.026	2	1	01a	99	11	1		3	7	2	7		9	1		9	1	1		1
062.027	2	1	01a	99	11	1		3	7	2	7		9	1		9	1	1		1
062.028	2	0	01b	99	0	1		3	8	2	2		9	1		9	1	1		1
062.029	2	0	07	99	0	1		4	2	2	2		9	1		9	1	1		1
062.030	2	0	07	99	0	1		4	2	2	2		9	1		9	1	1		1
062.031	2	0	01	99	0	1		1	6	6	6		1	1		1	1	1		1
062.032	2	0	0	99	0	1		1	7	7	7		9	1		9	1	1		1
062.033	2	0	01	99	0	1		3	7	4	7		9	1		9	1	1		1
062.034	2	0	08	99	0	1		4	11	2	11		9	1		9	1	1		1
062.035	2	0	01	99	0	1		3	4	4	2		9	1		9	1	1		1
062.036	2	0	01	99	0	1		3	2	11	2		9	1		9	1	1		1
062.037	2	0	21	99	0	1		3	4	4	4		9	1		9	1	1		1
063.001	2	2	21	99	8	1		3	6	2	6		9	1		9	1	1		1
063.002	2	2	25	99	7	1		1	6	6	6		9	1		9	1	1		1
063.003	2	2	24	99	8	1		3	11	2	2		1	2		9	1	1		1
063.004	2	2	61	99	7	1		1	6	6	6		9	1		9	1	1		1
063.005	2	0	21	99	0	1		3	6	11	6		9	1		9	1	1		1
063.006	2	0	21	99	0	1		1	9	9	9		9	1		9	1	1		1
063.007	3	0	99	3	0	1	063.008	3	8	5	8		9	2		9	1	1		1
063.008	3	0	99	3	0	1	063.007	3	8	5	8		9	2		9	2	1		1

(continued)



Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
063.009	2	2	42	99	7	2		1	6	6	6		1	0		1	0	1		1
063.010	2	2	42	99	7	2		1	6	6	6		1	0		1	0	1		1
063.011	2	2	25	99	7	1	063.012	1	7	6	6		9	1		9	1	1		1
063.012	2	2	25	99	7	1	063.011	1	7	6	6		9	1		9	1	1		1
063.013	2	2	21	99	7	1		3	6	2	6		9	1		9	1	1		1
064.001	2	2	42	99	7	1		1	8	8	8	8	1	2	8	1	2	1		1
064.002	2	0	56	99	0	1		1	6	6	6		9	1		9	1	1		1
064.003	8	1	22	1	11	1		1	9	9	9		9	1		9	1	1		1
064.004	2	2	58	99	7	1		3	5	2	5		9	2		9	2	1		1
064.005	8	2	24	99	8	2		2	6	5	6	6	1	0		0	0	1		1
064.006	2	2	24	99	8	2		3	3	11	3	3	1	0		0	0	1		1
064.007	8	1	08	99	11	1		3	4	3	2	4	1	0		9	1	1		1
064.008	2	1	01a	99	11	1		4	2	11	2		9	1		9	1	1		1
064.009	8	1	01a	99	11	1		1	6	6	6	7	1	2	7	1	2	1		1
064.010	2	1	07	99	11	1		3	3	2	3	3	1	2	3	1	1	1		1
064.011	2	2	60	99	8	1		3	7	2	7	7	1	2	7	1	2	1		1
064.012	2	2	42	99	7	1		1	8	8	8	8	1	2		9	1	1		1
064.013	2	2	24	99	8	2		3	4	11	4	4	1	0		0	0	1		1
064.014	2	2	43	99	7	2		3	7	6	7	7	1	0		0	0	1		1
064.015	2	2	62	99	8	1		3	6	1	5		9	1		9	1	1		1
064.016	2	2	21	99	7	1		3	4	4	6		9	1		9	1	1		1
064.017	2	0	50	99	0	1		3	2	1	12		9	2		9	2	1		1
064.018	2	2	21	99	7	1		1	6	6	6		9	1		9	1	1		1
064.019	2	2	21	99	7	1		3	2	2	2		9	1		9	1	1		1
064.020	2	0	21	99	0	1		2	5	5	5	5	9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
064.021	2	0	69	99	0	1		2	4	4	4		1	2		9	1	1		1
064.022	8	1	20	99	1	1		3	7	5	7		9	2		9	2	1		1
064.023	8	1	01a	99	11	1		1	6	6	6		9	1		9	1	1		1
064.024	2	2	61	99	7	1		2	2	2	2		9	1		9	1	1		1
064.025	2	0	61	99	0	1		1	6	13	6		9	2		9	2	1		1
064.026	2	0	56	99	0	1		1	6	6	6		9	1		9	1	1		1
064.027	3	0	99	3	0	1		4	2	1	11		1	2		1	2	1		1
064.028	2	0	49	99	0	3		3	7	3	7		9	1		9	1	1		1
064.029	2	0	0	99	0	1		3	6	3	6		9	2		9	2	1		1
064.030	2	0	21	99	0	1		1	8	8	8		9	1		9	1	1		1
064.031	2	1	01a	99	13	1		3	7	2	7		9	2		9	2	1		1
064.032	2	0	07	99	0	1		3	6	2	6		9	2		9	2	1		1
064.033	2	0	21	99	0	1		1	8	7	7		9	1		9	1	1		1
064.034	2	1	02a	99	13	1		3	3	1	3		9	2		9	2	1		1
064.035	2	0	07	99	0	1		3	6	11	6		1	1		9	1	1		1
064.036	2	0	05	99	0	3		3	2	11	2		9	2		9	2	1		1
064.037	2	0	21	99	0	1		3	6	2	6		9	1		9	1	1		1
064.038	2	0	01	99	0	1		3	2	11	2		9	1		9	1	1		1
064.039	2	0	54	99	0	1		3	7	7	7		9	1		9	1	1		1
064.040	2	0	03	99	0	1		1	8	8	8		9	1		9	1	1		1
064.041	2	0	69	99	0	1		3	6	2	6		1	1		9	1	1		1
066.001	2	1	31	99	12	1		3	8	1	6	8	1	1		9	1	3	1.7	1
066.002	8	1	20	99	1	1		3	7	6	7		9	2		9	2	1		1
066.003	2	1	31	99	12	1		3	6	11	6	6	1	1	6	1	1	1		1
066.004	2	1	31	99	12	1		3	6	1	8	6	1	1	8	1	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
066.005	2	2	29	99	7	2		3	6	12	3	6	1	0	3	1	0	1		1
066.006	2	0	43	99	0	1		1	13	9	13	13	1	2	13	1	2	1		1
066.007	8	1	01a	99	11	1		3	2	1	2	2	1	2	2	1	2	1		1
066.008	2	1	01a	99	11	1		4	1	1	11	1	1	2	11	1	1	1		1
066.009	8	1	20	99	1	1		3	7	11	7		9	2		9	2	1		1
066.010	2	1	20	99	1	1		1	6	7	6		9	2		9	2	1		1
066.011	2	2	41	99	7	2		1	6	9	8	6	1	0	8	1	0	1		1
066.012	2	2	22	99	8	1		3	5	1	5		9	1		9	1	1		1
066.013	2	2	42	99	7	1		3	5	2	5	5	1	0	5	1	0	1		1
066.014	2	0	39	99	0	2		3	6	11	6		0	0		0	0	1		1
066.015	2	1	08	99	11	1		3	4	11	7		9	1		9	1	1		1
066.016	2	1	01a	99	11	2		3	6	2	6		9	1	8	2	2	1		1
066.017	2	1	01a	99	11	1		2	2	4	2	2	1	2	2	1	1	1		1
066.018	2	1	01a	99	13	1		3	2	1	2		9	2		9	2	1		1
066.019	2	2	01b	99	6	1		1	6	6	6		9	1		9	1	1		1
066.020	2	1	20	99	1	1		3	7	3	7		9	2		9	2	1		1
066.021	2	1	01d	99	3	1		3	6	11	6		9	2		9	2	1		1
066.022	2	1	20	99	1	1		3	6	13	6		9	2		9	2	1		1
066.023	2	1	20	99	1	1		1	8	8	8		9	2		9	2	1		1
066.024	2	1	07	99	13	1		1	4	8	4	4	1	2	4	1	2	1		1
066.025	5	0	99	99	0	1		3	8	2	8		9	1		9	1	1		5
066.026	5	0	99	99	0	1		3	8	2	8		9	1		9	1	1		5
066.027	5	0	99	99	0	1		1	8	8	8		9	1		9	1	1		5
066.028	5	0	99	99	0	1		3	4	1	1	4	1	2	1	1	2	1		6
066.029	2	0	21	99	0	1		3	3	11	3		1	2		1	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
066.030	2	0	21	99	0	1		1	7	7	7		9	1		9	1	1		1
066.031	2	0	0	99	0	1		3	8	1	8		9	1		9	1	1		1
066.032	2	0	0	99	0	1		3	8	1	8		9	1		9	1	1		1
066.033	2	0	01	99	0	1		1	5	5	5		9	1		9	1	1		1
066.034	8	2	01c	99	7	1		3	6	1	2		1	2		9	1	2	1.3	1
066.035	2	1	32	99	12	1	066.036	3	8	1	6		9	2		9	2	1		1
066.036	2	1	32	99	12	1	066.035	3	8	1	6		9	2		9	2	1		1
066.037	2	2	28	99	7	1		1	8	4	4		1	2		1	2	1		1
066.038	2	2	29	99	7	1		3	3	12	2		1	2		1	2	1		1
066.039	2	0	59	99	0	1		1	6	6	6		1	2		1	2	1		1
066.040	2	2	22	99	7	1		2	5	5	5		1	0		0	0	1		1
066.041	2	2	22	99	7	1		1	6	6	6		1	0		0	0	1		1
066.042	2	2	22	99	7	1		3	7	3	7		9	1		9	1	1		1
066.043	2	2	16	99	8	1		2	4	13	6		9	2		9	2	1		1
066.044	2	2	01c	99	7	2		3	5	11	11		1	0		0	0	1		1
066.045	2	2	41	99	9	1		2	2	13	13		1	1		1	1	1		1
066.046	2	0	22	99	0	1		3	6	3	6		1	1		1	1	1		1
066.047	2	0	45	99	0	1		1	7	8	7	9	2	2	9	2	2	1		1
066.048	2	2	60	99	8	1		2	5	5	5		9	1		9	1	1		1
066.049	2	0	26	99	0	1		3	13	1	13		1	2		1	2	1		1
066.050	2	0	21	99	0	1		1	8	9	8		1	2		1	2	1		1
066.051	2	0	20	99	0	1		3	6	11	6		9	2		9	2	1		1
066.052	2	0	02a	99	0	1		3	6	1	6		9	1		9	1	1		1
066.053	2	1	01a	99	11	1		3	2	1	2		1	2		1	2	1		1
066.054	2	0	06b	99	0	1		3	5	1	1		9	2		9	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
066.055	2	1	01a	99	11	1		3	2	2	2		9	1		9	1	1		1
066.056	5	0	99	99	0	1		3	9	2	9		9	2		9	2	2	1.2	6
066.057	2	0	0	99	0	1		1	7	6	7		1	2		1	2	1		1
066.058	2	0	21	99	0	1		1	8	6	8		9	1		9	1	1		1
066.059	2	1	03a	99	11	1		1	4	6	4		1	2		1	2	1		1
066.060	2	0	54	99	0	1		3	6	3	6		9	1		9	1	1		1
066.061	2	0	03	99	0	1		2	5	4	5		9	1		9	1	1		1
066.062	2	0	03	99	0	1		3	4	11	4		1	1		1	1	1		1
066.063	2	1	01a	99	13	1		3	13	6	13		1	2		1	2	1		1
066.064	2	0	04	99	0	1		1	3	6	6		1	2		1	2	1		1
066.065	2	0	0	99	0	1		3	4	11	4		1	2		1	2	1		1
066.066	2	0	54	99	0	1		1	6	6	6		1	1		1	1	1		1
066.067	2	0	21	99	0	1		3	2	13	2		1	2		1	2	1		1
067.001	2	1	20	99	1	1		3	6	2	6	6	1	2	6	1	2	1		1
067.002	2	0	54	99	0	2		2	5	5	5	5	1	0	5	0	0	1		1
067.003	2	1	01a	99	3	2		4	11	1	11	11	1	0	11	1	0	1		1
067.004	2	1	01a	99	3	2		4	2	1	2	2	1	0	2	1	0	1		1
067.005	2	2	21	99	9	2		3	6	3	6	6	1	2	0	0	2	1		1
067.006	2	1	05a	99	3	2		3	2	1	3	12	1	0	12	1	0	1		1
067.007	2	1	10	99	13	2		3	5	1	5	5	1	0	5	1	0	1		1
067.008	2	0	59	99	0	1		2	2	2	2	2	1	2	2	1	2	1		1
067.009	2	0	21	99	0	2		3	2	1	2	2	1	0	2	1	0	1		1
067.010	3	0	99	2	0	1		3	7	11	7		9	2		9	2	1		1
067.011	3	0	99	2	0	1		3	7	10	7		9	2		9	2	1		1
067.012	2	0	21	99	0	2		1	7	6	7	9	2	1	9	2	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
067.013	2	0	04	99	0	1		3	4	2	4	4	1	1	2	2	1	1		1
067.014	2	0	01	99	0	1		2	4	4	4	4	1	1	4	1	1	1		1
068.001	2	2	46	99	7	1		4	11	1	11	11	1	2	11	1	2	1		1
068.002	2	2	42	99	7	1		3	4	11	4	4	1	2	4	1	2	1		1
068.003	2	2	25	99	7	1		4	11	11	1		1	2		1	2	1		1
068.004	2	0	01	99	0	1		4	1	1	1		1	2		1	2	1		1
068.005	2	0	70	99	0	3		4	11	11	11	12	2	2	12	2	2	1		1
068.006	2	2	25	99	6	1		1	13	8	13	1	2	5	12	2	5	1		1
068.007	2	2	25	99	6	1		3	4	2	4		9	1		9	1	1		1
068.008	2	0	0	99	0	3		4	1	1	1		0	0	1	3	5	1		1
068.009	5	0	99	99	0	1		3	8	12	8		9	1		9	1	1		10
068.010	2	2	20	99	1	1		3	9	1	9	5	2	2	5	2	2	1		1
068.011	2	0	05a	99	0	1		3	9	12	9		9	1		9	1	1		1
068.012	2	2	24	99	7	1		2	8	5	6		1	2		1	2	1		1
068.013	2	1	02a	99	13	1		3	8	3	7		9	1		9	1	1		1
068.014	2	0	01a	99	0	2		2	6	4	6		9	1		9	1	1		1
068.015	2	2	21	99	7	1		4	11	11	11	2	3	2	2	3	2	1		1
068.016	2	2	44	99	7	1		3	4	11	4		1	2		1	2	1		1
068.017	2	0	24	99	0	3		3	12	12	12		1	2		1	2	1		1
068.018	2	1	29	99	11	1		4	11	12	11		1	5		1	2	1		1
069.001	6	1	03a	99	3	1		3	13	11	13		9	1		9	1	1		1
079.001	2	0	19	99	0	2		1	7	7	7		0	0		0	0	1		1
079.002	2	0	19	99	0	1		3	7	11	7		9	1		9	1	1		1
079.003	3	0	99	2	0	3		3	7	11	7		9	1		9	1	1		1
079.004	2	0	01d	99	0	1		1	9	9	9		1	2		1	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
089.001	2	0	01	99	0	1		1	9	9	9		9	1		9	1	1		1
089.002	2	2	21	99	2	1		3	6	11	6		9	2		9	2	1		1
089.003	2	0	0	99	0	3		4	11	1	11		0	0		0	0	1		1
089.004	2	0	25	99	0	1		3	4	12	4		9	1		9	1	1		1
089.005	2	0	04a	99	0	1		4	1	1	1		1	2		1	2	1		1
089.006	2	0	21	99	0	2	089.007	3	6	5	7		0	0		1	0	1		1
089.007	2	2	21	99	6	2	089.006	3	6	5	7		0	0		1	0	1		1
089.008	2	2	23	99	8	1		3	7	1	7		1	2		9	1	1		1
089.009	2	2	25	99	7	1		2	4	5	4		9	1		9	1	1		1
089.010	2	0	0	99	0	3		3	7	1	7		0	0		0	0	1		1
090.001	8	1	20	99	1	1		3	7	4	7		9	2		9	2	1		1
090.002	2	1	01f	99	11	1		3	6	11	6		1	2		1	2	1		1
090.003	2	2	21	99	7	1		3	4	2	4		1	2		1	2	1		1
090.004	2	0	05a	99	0	1		3	6	2	6	4	2	2	4	2	2	1		1
090.005	2	0	0	99	0	1		3	8	2	8		9	1		9	1	1		1
090.006	2	0	48	99	0	2		3	7	3	7	0	0	0	0	0	0	1		1
090.007	2	0	01a	99	0	1		1	8	9	8		1	2		1	2	1		1
090.008	2	2	44	99	7	1		4	11	11	11	4	2	5	4	2	5	1		1
090.009	2	1	55	99	11	1		3	12	12	11	4	2	2	4	2	2	1		1
091.001	2	2	24	99	7	2		3	6	1	6	0	0	0	0	0	0	1		1
091.002	2	0	0	99	0	1		3	6	1	6		9	1		9	1	1		1
091.003	2	1	11	99	11	2		3	6	2	6		1	0		1	0	1		1
091.004	2	1	02a	99	11	1		3	7	11	7		9	2		9	2	1		1
091.005	3	0	99	2	0	1		3	6	2	6		9	2		9	2	1		1
091.006	2	1	06	99	3	1		3	6	3	6		9	2		9	2	1		1

(continued)



Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
091.007	5	0	99	99	0	1		3	6	11	6		9	2		9	2	1		4
091.008	2	0	05a	99	0	2		3	6	3	6		0	0		0	0	1		1
091.009	2	1	01a	99	11	1		1	9	9	9		1	2		1	5	1		1
091.010	2	2	37	99	8	1		3	1	13	1	2	2	2	2	2	2	1		9
091.011	2	1	11	99	11	2		3	7	3	11		0	0		0	0	1		1
091.012	2	2	22	99	7	2		1	8	8	8		0	0		0	0	1		1
091.013	2	2	20	99	1	1		2	13	5	13		9	2		9	2	1		1
091.014	2	1	01a	99	11	1		3	12	11	12		9	2		9	2	1		1
091.015	2	0	05a	99	0	1		4	11	11	11	11	3	5	11	3	5	1		1
091.016	2	0	0	99	0	2		3	7	5	7		0	0		0	0	1		1
091.017	2	2	68	99	7	1		3	4	11	4		1	2		1	2	1		1
091.018	2	2	40	99	7	2		3	6	11	6		9	1		9	1	1		1
091.019	2	1	11	99	13	3		1	9	9	9	5	2	5	5	2	5	1		1
091.020	2	2	26	99	7	1		3	12	11	12	12	3	5	12	3	5	1		1
091.021	2	2	21	99	7	1		3	6	11	6	8	2	5	6	1	5	1		1
091.022	2	1	11	99	11	2		3	6	2	6		0	0	6	3	2	1		1
091.023	2	2	42	99	9	2		3	8	3	8		0	0	8	3	2	1		1
091.024	2	1	01a	99	11	1		3	12	1	12		1	2		1	2	1		1
091.025	2	1	04a	99	11	1		3	5	11	5	9	2	0	9	2	0	1		1
092.001	2	0	35	99	0	1		3	7	5	7		9	1		9	1	1		1
092.002	2	0	01b	99	0	1		3	6	11	6		9	1		9	1	1		1
092.003	2	2	69	99	9	2		1	8	8	8	9	3	2		0	0	1		1
092.004	2	2	38	99	7	1		3	6	11	6		9	1		9	1	1		1
092.005	2	2	41	99	7	1		3	13	3	13	13	1	2	2	2	2	1		1
092.006	2	2	28	99	7	1		1	9	9	9	9	1	2	9	1	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
092.007	2	1	04a	99	13	1		3	6	11	6		9	1		9	1	1		1
092.008	2	2	29	99	9	1		3	3	11	3	3	1	2	3	1	2	1		1
092.009	2	1	05b	99	11	1		4	1	1	1	1	1	5	1	1	5	1		1
092.010	2	0	55	99	0	2		3	7	3	7		0	0		0	0	1		1
092.011	2	2	31	99	8	2		3	8	8	8	6	2	5	6	2	0	1		1
092.012	2	1	01a	99	11	2		3	7	5	7		0	0		0	0	1		1
092.013	2	2	22	99	7	2		1	6	6	6		0	0		0	0	1		1
092.014	2	2	42	99	7	1		1	7	7	7		9	1		9	1	1		1
092.015	2	0	0	99	0	2		3	8	4	8	9	3	2	9	3	2	1		1
092.016	2	1	25	99	11	1		2	12	12	12		9	1		9	1	1		1
092.017	2	2	04a	99	8	1		3	6	11	6	9	2	5	9	2	5	1		1
092.018	2	0	26	99	0	1		3	3	11	6	6	2	2		9	1	1		1
092.019	2	1	29	99	13	1		3	6	11	6		9	1		9	1	1		1
092.020	2	2	64	99	8	1		4	1	1	1	1	1	5	1	1	5	1		1
092.021	2	2	25	99	7	1		3	4	11	4	4	1	5	4	1	5	1		1
092.022	2	0	39	99	0	1		3	8	5	8	9	3	2	9	3	2	1		1
092.023	2	1	0	99	13	1		1	8	8	9		9	1		9	1	1		1
092.024	2	2	01a	99	9	1		3	4	1	4		9	1		9	1	1		1
092.025	2	2	24	99	7	1		4	11	1	11	4	2	2	4	2	2	1		1
092.026	2	0	24	99	0	1		3	13	4	13	12	2	5	12	2	5	1		1
092.027	2	0	55	99	0	1		4	11	11	11		9	2		9	2	1		1
092.028	2	0	71	99	0	1		3	6	2	6	9	2	2	4	2	2	1		1
092.029	2	0	55	99	0	1		2	12	12	12	2	2	2	2	2	5	1		1
092.030	2	2	04a	99	7	2		3	6	11	6		0	0		0	0	1		1
092.031	2	0	29	99	0	1		4	11	11	11	10	2	2	10	2	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
092.032	2	0	58	99	0	1		3	12	11	12	12	1	2	12	1	2	1		1
093.001	7	0	42	99	0	2		3	6	3	6		1	0		1	0	1		1
093.002	2	0	42	99	0	2		3	4	3	4		1	2		1	2	1		1
093.003	2	0	42	99	0	1		2	12	12	12		1	2		1	2	1		1
093.004	2	0	64	99	0	1		4	11	11	11	1	2	3	1	2	3	1		1
093.005	2	0	25	99	0	1		3	8	6	8		1	2		1	2	1		1
093.006	2	0	25	99	0	1		3	4	3	4		9	1		9	1	1		1
093.007	2	0	39	99	0	1		2	4	4	4		3	2	4	3	1	1		1
093.008	2	0	11	99	0	1		4	2	2	2	1	2	2	11	2	5	1		1
093.009	2	0	42	99	0	2		1	6	6	6		1	0	0	0	0	1		1
093.010	2	0	54	99	0	1		3	5	11	5		9	1		9	1	1		1
093.011	2	0	25	99	0	1		2	8	5	8		1	2		9	1	1		1
093.012	2	0	21	99	0	1		3	8	5	8		9	1		9	1	1		1
093.013	2	0	11	99	0	1		1	4	8	4		9	1		9	1	1		1
093.014	2	0	25	99	0	1		3	2	11	2		9	1		9	1	1		1
093.015	2	0	42	99	0	2		3	4	3	3		1	0	2	2	2	1		1
093.016	2	0	25	99	0	1		2	5	4	5		3	2		3	2	1		1
093.017	2	0	54	99	0	2		3	6	11	6		9	1		9	1	1		1
093.018	2	0	0	99	0	2		3	8	6	8		0	0		0	0	1		1
093.019	2	0	28	99	0	2		3	5	11	5		1	0		1	0	1		1
093.020	2	0	49	99	0	1		4	11	11	11		1	2		1	2	1		1
093.021	2	0	24	99	0	2		1	4	6	6	0	0	0	0	0	0	1		1
093.022	2	0	28	99	0	1		3	5	11	5		1	2		1	2	1		1
093.023	2	0	48	99	0	1		3	6	1	6		9	2		9	2	1		1
093.024	2	1	20	99	1	1		3	6	1	6		9	2		9	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
093.025	2	1	04a	99	3	1		3	7	2	7		9	2		9	2	1		1
093.026	2	1	04a	99	3	1		3	7	11	7		9	2		9	2	1		1
093.027	2	0	05a	99	0	1		1	4	9	4		1	2		3	5	1		1
093.028	2	0	21	99	0	2		1	7	7	7	0	0	0		1	0	1		1
093.029	2	0	05a	99	0	1		3	3	3	3	2	3	2	3	3	2	1		1
093.030	2	0	12	99	0	2		3	7	3	6		3	0		3	0	1		1
093.031	2	0	0	99	0	2		1	5	5	5	0	0	0	0	0	0	1		1
093.032	2	0	04a	99	0	1		3	5	2	5		9	2		9	2	1		1
093.033	2	0	02a	99	0	4		3	5	11	5		9	1		9	1	1		1
093.034	2	0	01a	99	0	2		3	3	3	3	0	0	1	0	0	0	1		1
093.035	2	0	0	99	0	2		1	7	7	7	0	0	0	0	0	0	1		1
093.036	2	0	01a	99	0	2		3	6	2	3	7	2	0	7	2	0	1		1
093.037	2	0	05a	99	0	2		3	11	3	3		3	2		3	2	1		1
093.038	2	0	21	99	0	1		3	7	3	7		9	2		9	2	1		1
093.039	2	0	0	99	0	2		1	6	6	6	0	0	0	0	0	0	1		1
093.040	2	0	0	99	0	2		3	5	1	5		3	2		3	2	1		1
093.041	2	0	01	99	0	1		3	4	3	4		9	1		9	1	1		1
093.042	2	0	60	99	0	2		3	3	3	3		1	0		1	0	1		1
093.043	2	0	01	99	0	2		3	8	6	8	0	0	0	0	0	0	1		1
093.044	2	0	59	99	0	2		3	3	3	3		3	2		3	2	1		1
093.045	2	0	01	99	0	2		4	11	11	11	0	0	0	0	0	0	1		1
093.046	2	0	05	99	0	2		3	1	2	2		3	0		3	0	1		1
093.047	2	0	01	99	0	1		3	2	11	2	11	2	2	11	2	2	1		1
093.048	3	0	99	2	0	1		3	13	11	13		9	1		9	2	1		1
093.049	2	2	38	99	8	2	093.050	3	7	5	7		9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
093.050	2	2	39	99	8	2	093.049	3	7	5	7		9	1		9	1	1		1
093.051	2	1	02a	99	11	2		3	7	3	7		9	1		9	1	1		1
093.052	2	2	42	99	7	2		3	7	5	7		3	0		3	0	1		1
093.053	2	1	02a	99	11	2	093.054	3	4	1	4		0	0		0	0	1		1
093.054	2	1	02a	99	11	2	093.053	3	4	1	4		0	0		0	0	1		1
093.055	5	0	99	99	0	1		1	9	9	8		9	1		9	1	1		2
093.056	2	2	42	99	7	2		1	8	8	8		0	0		0	0	1		1
093.057	2	1	02a	99	11	1		3	4	1	4		1	2		9	2	1		1
093.058	2	2	23	99	7	2		2	4	5	5	4	3	2	4	2	2	1		1
093.059	2	2	21	99	7	1		1	13	13	13	4	2	2	4	2	2	1		1
093.060	2	2	21	99	8	1		1	4	13	4		1	2		9	1	1		1
093.061	2	2	42	99	7	2		1	6	6	6		0	0		0	0	1		1
093.062	2	2	29	99	7	2		1	9	9	9		0	0		0	0	1		1
093.063	3	0	99	2	0	1		3	8	2	8		9	1			1	1		1
093.064	2	2	28	99	7	2		3	6	3	6		1	0		1	0	1		1
093.065	2	0	01	99	0	1		3	8	12	8		9	1		9	1	1		1
093.066	2	2	25	99	7	1		1	9	13	6	6	3	2		1	2	1		1
093.067	2	1	14	99	11	2		3	4	2	5		1	0		1	0	1		1
093.068	3	0	99	2	0	1		3	6	3	6		9	2		9	2	1		1
093.069	2	2	20	99	1	1		1	7	13	7		9	2		1	2	1		1
093.070	2	0	05b	99	0	1		3	8	2	8		9	1		9	1	1		1
093.071	2	0	01	99	0	2		3	6	2	6		0	0		0	0	1		1
093.072	3	0	99	3	0	1		1	7	7	7		9	1		9	1	1		1
093.073	2	2	28	99	9	2		3	4	2	4		1	0		0	0	1		1
093.074	2	2	21	99	7	4		3	4	2	4		1	0		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
093.075	2	2	24	99	7	2		3	5	2	4		1	0		0	0	1		1
093.076	2	2	22	99	6	1		3	7	4	7		1	2		1	2	1		1
093.077	2	1	01a	99	11	1		2	7	4	7		9	1		9	1	1		1
093.078	2	2	28	99	2	1		3	5	2	5			2			2	1		1
093.079	2	0	0	99	0	2		3	4	1	4		0	0		0	0	1		1
093.080	2	2	25	99	7	1		3	4	12	4		9	1		9	1	1		1
093.081	2	2	28	99	9	2		3	7	3	7		1	0		1	0	1		1
093.082	2	2	05a	99	6	2		3	6	11	6		0	0	9	2	0	1		1
093.083	2	2	24	99	7	2		3	6	1	1		9	1		9	1	1		1
093.084	2	2	01c	99	7	1		3	8	2	6		9	1		9	1	1		1
093.085	2	0	17	99	0	2		3	7	3	7		0	0		0	0	1		1
093.086	2	0	0	99	0	4		3	13	12	13		0	0		0	0	1		1
093.087	2	0	0	99	0	3		3	7	2	0		0	0		0	0	1		1
093.088	2	0	0	99	0	3		3	7	3	7		0	0		0	0	1		1
093.089	2	0	01d	99	0	2		3	6	2	6		0	0		0	0	1		1
093.090	2	0	01	99	0	3		1	9	9	9	0	0	0		1	2	1		1
093.091	2	0	20	99	0	1		1	6	9	6		9	2		9	2	1		1
093.092	2	2	05b	99	7	1		3	6	1	6		9	2		9	2	1		1
093.093	5	0	99	2	0	1		3	12	12	12		9	5		9	1	1		1
093.094	2	0	0	99	0	2		1	5	5	5		0	0		0	0	1		1
093.095	2	2	69	99	7	2		3	12	12	12		1	2	7	2	0	1		1
093.096	2	2	41	99	7	2		1	13	9	13		1	5		1	5	1		1
093.097	2	1	02a	99	11	1		3	9	1	9		1	2		1	2	1		1
093.098	2	2	21	99	8	1		3	8	12	8	4	2	5	11	2	5	1		1
093.099	2	2	28	99	6	1		4	1	1	1	1	3	5	1	3	5	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
093.100	2	1	05a	99	11	1		4	1	12	1	1	3	5	1	3	5	1		1
093.101	2	1	10	99	11	1		4	1	13	1	1	3	5	1	3	5	1		1
093.102	2	2	41	99	7	2		3	13	12	12	4	2	0	12	3	0	1		1
093.103	2	2	67	99	7	1		1	9	9	9	9	3	2	9	3	2	1		1
093.104	2	1	10	99	11	1		1	9	9	9	5	2	2	9	3	2	1		1
093.105	2	0	01	99	0	1		4	11	1	11		1	5		1	5	1		1
093.106	2	0	0	99	0	3		4	2	2	0		1	5		0	0	1		1
093.107	2	0	01a	99	0	1		4	11	11	11	1	2	5	1	2	5	1		1
093.108	2	0	07	99	0	3		4	1	1	1	11	3	2		9	1	1		1
093.109	2	2	60	99	7	2		2	4	4	4		1	0		1	0	1		1
093.110	2	1	59	99	11	1		1	4	9	4	4	3	2	4	3	2	1		1
093.111	2	1	01b	99	11	2		1	9	9	9		0	0	8	3	2	1		1
093.112	2	2	38	99	8	1	094.002	3	6	2	6		9	1		9	1	1		1
094.001	2	2	38	99	8	1		3	6	2	6		9	1		9	1	1		1
094.002	2	2	38	99	8	1	093.112; 094.003	3	6	2	6		9	1		9	1	1		1
094.003	5	2	99	99	9	1	094.002	3	6	2	6		9	1		9	1	1		1
094.004	2	1	01a	99	11	1		3	6	1	1		9	1		9	1	1		1
094.005	5	0	0	99	0	1		3	7	11	7		9	2		9	2	1		2
094.006	3	0	99	3	0	1		3	6	1	1		9	1		9	1	1		1
094.007	2	2	29	99	7	1	094.008	1	9	9	9	9	3	2	9	3	2	1		1
094.008	2	2	29	99	7	1	094.007	1	9	9	9	9	3	2	9	3	2	1		1
094.009	2	2	13	99	8	1		3	1	1	6	1	1	2		9	1	1		8
094.010	2	2	54	99	7	2		1	6	5	6		1	0		0	0	1		1
094.011	2	2	31	99	8	1		3	4	1	4		9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
094.012	2	2	49	99	7	2		4	1	1	1		1	0		1	0	1		1
094.013	2	2	39	99	8	2		3	8	5	8		0	0		0	0	1		1
094.014	8	2	25	99	7	2		3	4	4	4		0	0		1	1	1		1
094.015	2	0	0	99	0	3		3	8	11	6		0	0		0	0	1		1
094.016	2	0	20	99	0	1		3	9	12	9		9	2		9	2	1		1
094.017	2	1	17	99	11	2		3	8	2	8		0	0	6	3	0	1		1
094.018	2	0	05a	99	0	1		3	7	1	7		9	2		9	2	1		1
094.019	3	0	99	2	0	1		3	7	4	7		9	2		9	2	1		1
094.020	2	0	05a	99	0	1		1	5	9	5		9	2		9	2	1		1
094.021	2	0	07	99	0	2		4	11	11	11		1	0		1	0	1		1
094.022	2	0	07	99	0	2		4	11	11	11		1	0		1	0	1		1
094.023	2	2	24	99	7	1		1	13	13	13	4	2	5	4	2	2	1		1
094.024	2	0	05a	99	0	1		4	11	11	11	1	2	2	1	2	2	1		1
094.025	2	1	17	99	11	1		1	9	9	9	6	3	2	6	3	2	1		1
094.026	2	2	31	99	8	1		3	5	1	5		9	1		9	1	1		1
095.001	2	1	38	99	11	2		3	6	2	6		0	0		0	0	1		1
095.002	2	2	42	99	7	1		3	13	5	5		1	2	1	2	2	1		1
095.003	2	0	44	99	0	1		3	6	2	6	2	2	2	2	2	2	1		1
095.004	2	2	42	99	7	1		3	6	3	6		1	2		1	2	1		1
095.005	2	2	21	99	7	2		3	6	2	6		0	0		0	0	1		1
095.006	2	2	26	99	7	2		3	5	2	5		1	1		1	1	1		1
095.007	2	1	31	99	12	1		3	5	1	5		9	1		9	1	1		1
095.008	2	2	38	99	8	2		3	7	2	7		1	1		0	1	1		1
095.009	2	2	37	99	8	1		4	1	1	11		9	1		9	1	1		9
095.010	2	2	23	99	7	1		2	5	5	5		1	1		1	1	1		1

(continued)



Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
095.011	2	2	25	99	7	1		3	3	11	3	2	2	2		9	1	1		1
095.012	2	0	27	99	0	2	095.013	3	5	11	5	7	2	0	7	2	0	1		1
095.013	2	0	27	99	0	2	095.012	3	5	11	5	7	2	0	7	2	0	1		1
095.014	2	0	21	99	0	2		3	9	13	13		1	0		0	0	1		1
095.015	2	0	42	99	0	2		3	6	3	6		1	0		1	0	1		1
095.016	2	0	49	99	0	1		3	7	3	7		9	1		9	1	1		1
095.017	2	0	23	99	0	1		3	4	11	4	9	2	2	9	2	2	1		1
095.018	2	2	24	99	7	1		3	3	11	5		1	1		9	1	1		1
095.019	2	2	22	99	7	2		3	5	3	5		9	1		9	1	1		1
095.020	2	2	25	99	7	1		3	5	11	2	7	2	0	0	0	0	1		1
095.021	2	1	01c	99	11	2		3	6	11	5		1	0		0	0	1		1
095.022	8	2	20	99	1	1	095.023	3	7	5	7		9	2		9	2	1		1
095.023	8	2	20	99	1	1	095.022	3	7	5	7		9	2		9	2	1		1
095.024	8	1	20	99	1	1		3	5	3	5		9	2		9	2	1		1
095.025	8	2	20	99	1	1		3	6	2	6		9	2		9	2	1		1
095.026	8	2	20	99	1	1		3	8	4	8		9	2		9	2	1		1
095.027	8	2	20	99	1	1		3	7	11	7		9	2		9	2	1		1
095.028	2	0	01b	99	0	1		3	7	1	7	4	2	2	4	2	2	1		1
095.029	2	2	20	99	1	1		3	8	2	8		9	2		9	2	1		1
095.030	2	2	19	99	2	1		3	7	11	7		9	2		9	2	1		1
095.031	2	2	20	99	1	1		3	7	2	7	9	2	1	9	2	1	1		1
095.032	2	1	01d	99	3	1		3	6	2	6	13	2	2	13	2	2	1		1
095.033	2	1	20	99	1	1		3	6	11	6	9	2	2	9	2	2	1		1
095.034	8	1	20	99	1	1		3	5	2	5		9	2		9	2	1		1
095.035	8	2	20	99	1	1		3	5	2	5	4	2	2	4	2	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
095.036	2	2	20	99	1	1		1	6	8	6		9	2		9	2	1		1
095.037	8	1	05a	99	11	1		4	11	11	11	1	2	4	11	2	5	1		1
095.038	2	2	31	99	8	2		3	3	1	5		1	0		9	0	1		1
095.039	2	2	03b	99	6	1		3	7	1	7		9	1		9	1	1		1
095.040	2	1	08	99	11	2		3	5	11	6		1	0		1	0	1		1
095.041	2	0	01b	99	0	2		3	5	2	5		0	0		0	0	1		1
095.042	2	1	01a	99	11	2		3	7	11	7		0	0		0	0	1		1
095.043	2	1	01a	99	11	1		4	1	12	1	2	2	5	2	2	5	1		1
095.044	2	1	09	99	11	1		3	12	12	12	11	2	5	11	2	5	1		1
095.045	2	0	01b	99	0	2		3	10	1	1	7	2	0	7	2	0	1		1
095.046	2	0	01b	99	0	4		2	11	8	13		1	2		1	2	1		1
095.047	2	1	04a	99	11	1		3	12	2	12	4	2	5	4	2	5	1		1
095.048	3	0	99	2	0	1		3	7	3	7		9	1		9	1	1		1
095.049	3	0	99	2	0	1		1	8	8	8		9	2		9	2	1		1
095.050	3	0	99	2	0	1		2	6	10	6		9	2		9	2	1		1
095.051	3	0	99	2	0	1		2	7	5	7		9	2		9	2	1		1
095.052	3	0	99	2	0	1		3	5	11	5	7	2	2	9	2	2	1		1
095.053	3	0	99	2	0	1		3	5	1	5	13	2	1	13	2	2	1		1
095.054	3	0	99	2	0	1		3	5	11	5	4	2	1	4	2	1	1		1
095.055	3	0	99	2	0	1		3	5	1	5	4	2	1	4	2	1	1		1
095.056	5	0	99	99	0	1		3	8	12	6		9	1		9	1	1		3
095.057	2	0	01	99	0	1		4	2	2	2	11	2	0	11	2	0	1		1
095.058	2	0	0	99	0	1		3	6	1	6	6	1	2	6	1	2	1		1
095.059	2	0	21	99	0	1		3	4	3	4	4	1	2	4	1	2	1		1
095.060	2	0	01	99	0	1		4	11	11	11		9	2		9	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
095.061	2	0	11	99	0	1		3	9	5	5	3	2	2	5	2	5	1		1
095.062	2	0	21	99	0	2		1	5	5	5		1	1	0	0	1	1		1
095.063	2	0	01	99	0	2		3	5	2	5	0	0	0	6	2	0	1		1
095.064	2	0	01	99	0	1		4	11	2	11		1	2		1	2	1		1
095.065	2	0	07	99	0	1		1	8	8	8	11	2	2	11	2	2	1		1
095.066	2	0	05	99	0	1		3	11	11	11		1	2		1	2	1		1
095.067	2	0	05	99	0	1		3	11	11	11		1	2		1	2	1		1
095.068	2	0	0	99	0	1		3	7	3	7		9	2		9	2	1		1
095.069	2	0	20	99	0	1		3	6	4	6	13	2	2	13	2	2	1		1
095.070	2	0	0	99	0	1		3	6	2	6		9	2		9	2	1		1
095.071	2	0	05	99	0	1		3	5	11	5		9	2		9	2	1		1
095.072	2	0	0	99	0	1		3	8	11	8	3	2	2	3	2	2	1		1
095.073	2	0	21	99	0	1		3	5	11	5		1	2		1	2	1		1
095.074	2	0	0	99	0	1		2	4	12	4		9	1		9	1	1		1
095.075	2	2	37	99	9	2		3	13	11	13		0	0		0	0	1		1
095.076	2	2	22	99	7	2		3	6	3	6		0	0		0	0	1		1
095.077	2	2	29	99	7	1		3	6	3	7		1	2		9	1	1		1
095.078	2	1	01a	99	11	2		3	8	11	8		0	0		0	0	1		1
095.079	2	2	25	99	7	1		1	6	9	6		9	1		9	1	1		1
095.080	2	2	38	99	7	2		3	8	11	6		0	0		0	0	1		1
095.081	2	1	01a	99	11	1		3	6	11	6		9	1		9	1	1		1
095.082	2	0	0	99	0	2		3	4	11	4		0	0		0	0	1		1
095.083	2	1	06	99	11	2		4	11	11	11		0	0		0	0	1		1
095.084	2	0	04a	99	0	1		3	12	12	12		1	2		1	2	1		1
095.085	2	2	21	99	8	1		3	4	1	4		9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
095.086	2	0	0	99	0	3		3	2	11	2		1	2		1	2	1		1
095.087	2	0	03a	99	0	1		3	8	11	8		1	2		1	2	1		1
095.088	5	0	0	99	0	1		3	6	1	1		1	2		9	1	1		10
095.089	2	2	20	99	1	1		3	6	2	6		9	2		9	2	1		1
095.090	2	2	21	99	7	1		3	6	11	6	13	2	2	13	2	2	1		1
095.091	2	2	05b	99	2	1		3	8	11	8	13	2	5	13	2	5	1		1
095.092	2	0	01	99	0	1		1	6	6	6	8	2	2	8	2	2	1		1
095.093	2	2	23	99	7	1		3	4	1	4	9	2	2	4	3	2	1		1
095.094	2	1	17	99	11	1		1	8	9	8	8	3	2	9	2	2	1		1
095.095	2	0	01	99	0	1		3	5	13	5	9	2	2		1	2	1		1
095.096	2	0	0	99	0	2		3	8	5	8		0	0		1	2	1		1
095.097	2	2	69	99	7	1		3	9	9	12		1	2	13	2	2	1		1
095.098	2	0	01	99	0	2		3	5	3	5		1	2		1	2	1		1
095.099	2	2	23	99	7	1		3	13	13	13	4	3	2	13	3	2	1		1
095.100	2	1	06	99	11	2		3	12	12	4	13	2	0	13	2	0	1		1
095.101	2	1	01a	99	11	2		3	2	2	11		0	0	1	3	5	1		1
096.001	2	2	54	99	8	1		3	1	11	1		9	1		9	1	1		7
096.002	2	2	05a	99	2	1		3	6	11	6	5	3	2	5	3	2	1		1
096.003	3	0	99	2	0	2		3	7	2	7	2	2	0	2	2	0	1		1
096.004	2	2	01e	99	7	1		3	7	11	7		9	1		9	1	1		1
096.005	2	1	11	99	11	2		3	7	2	7	2	0	0		0	0	1		1
096.006	2	0	21	99	0	1		3	7	5	7		9	1		9	1	1		1
096.007	2	0	41	99	0	1		3	4	3	7	4	1	2		0	0	1		1
096.008	2	0	06	99	0	1		3	5	1	4	5	1	2	11	1	5	1		1
096.009	2	0	26	99	0	1		3	9	1	12	7	2	2	12	1	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
096.010	2	0	10	99	0	1		3	4	4	4	4	3	5	4	3	5	1		1
096.011	2	1	06	99	11	1		3	5	3	4	12	3	2	4	3	5	1		1
096.012	2	1	01b	99	11	1		3	11	11	11	4	2	2	4	2	2	1		1
096.013	2	0	0	99	0	1		2	12	12	12	2	2	5	2	2	5	1		1
096.014	2	0	0	99	0	1		3	7	2	7	7	1	2	7	1	2	1		1
096.015	2	0	58	99	0	1		3	7	2	5	7	1	2		9	1	1		1
099.001	2	2	37	99	7	1		3	6	11	6		9	1		9	1	1		1
099.002	2	2	21	99	7	1		3	7	3	7		9	1		9	1	1		1
099.003	2	0	0	99	0	2		3	5	3	6		9	1		9	1	1		1
099.004	2	1	04a	99	13	1		3	6	11	11		9	1		1	2	1		1
099.005	2	2	51	99	7	1		3	7	2	7		9	1		9	1	2		1
099.006	3	0	99	2	0	1		3	5	11	5	4	2	2		9	2	1		1
099.007	2	2	25	99	7	1		3	4	1	4	7	2	5	4	2	5	1		1
099.008	2	0	55	99	0	1		3	9	11	7		9	1		9	1	1		1
099.009	2	0	65	99	0	1		3	5	11	3	7	2	2		9	1	1		1
099.010	2	0	12	99	0	1		3	8	2	8		9	1	6	2	2	1		1
099.011	2	1	06	99	11	1		3	6	11	6		9	1		1	2	1		1
100.001	2	2	63	99	7	1		3	7	11	8		9	1		9	1	1		1
100.002	2	2	01e	99	7	1		3	6	11	6		9	1		9	1	1		1
100.003	2	1	01a	99	11	1		3	7	11	7	7	1	5		9	1	1		1
100.004	2	2	21	99	8	1		3	8	11	12	11	2	3	11	2	3	1		1
100.005	2	1	03a	99	11	1		3	8	5	5	5	2	5	3	2	5	1		1
103.001	2	0	21	99	0	2		1	9	9	9		0	1		0	1	1		1
109.001	2	2	23	99	8	1		3	6	1	6		1	2		1	2	1		1
109.002	2	0	04	99	0	2		3	6	3	6		9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
115.001	2	1	11	99	11	1		1	5	5	8	5	2	5	5	2	5	1		1
119.001	2	1	05a	99	13	2		1	7	7	7	0	0	0	0	0	0	1		1
119.002	2	0	01a	99	0	1		1	9	9	9	1	2	5	1	2	5	1		1
119.003	2	0	23	99	0	3		4	11	11	11	0	0	0		1	5	1		1
119.004	2	1	01a	99	11	1		2	4	4	4	3	2	5	3	2	5	1		1
120.001	3	0	99	2	0	1	120.001-004	3	8	11	11	7	2	3	8	2	5	1		1
120.002	3	0	99	2	0	1	120.001-004	3	8	11	11	7	2	3	8	2	5	1		1
120.003	3	0	99	2	0	1	120.001-004	3	8	11	11	8	2	3	8	2	5	1		1
120.004	3	0	99	2	0	1	120.001-004	3	8	11	11	8	2	3	8	2	5	1		1
121.001	2	2	28	99	6	1		3	8	11	8	9	3	2	8	1	2	1		1
121.002	2	0	0	99	0	1		2	6	4	6		9	1		9	1	1		1
121.003	2	1	01a	99	11	1		3	7	2	3	6	2	2	3	3	2	1		1
121.004	2	0	01a	99	0	1		1	9	9	9	1	2	5	1	2	5	1		1
121.005	2	1	01a	99	11	1		1	6	4	6	6	3	2	6	3	2	1		1
121.006	2	0	59	99	0	3		3	9	12	8	9	3	2		9	1	1		1
121.007	2	2	23	99	7	1		3	8	2	8		1	2		1	2	1		1
121.008	2	1	06	99	11	1		1	4	8	4		1	2	6	2	5	1		1
121.009	2	1	36	99	11	1		1	6	8	6	6	3	5	6	3	5	1		1
121.010	2	1	01a	99	11	2		3	6	1	6	0	0	0	6	3	5	1		1
123.001	2	2	42	99	7	1		3	8	4	8		1	2		1	2	1		1
123.002	2	2	25	99	8	1		3	10	1	5		1	2		1	2	1		1
123.003	2	0	58	99	0	1		3	5	2	5		9	1		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
123.004	2	2	58	99	7	1		3	5	1	5		1	2		1	2	1		1
123.005	2	1	14	99	11	1		3	3	1	3		9	1		9	1	1		1
123.006	8	1	11	99	11	1		3	6	13	6		1	2		1	2	1		1
123.007	2	1	17	99	11	1		2	13	13	9		1	5		1	5	1		1
123.008	2	1	06	99	11	1		2	4	4	8		1	2		1	2	1		1
123.009	6	1	03c	2	10	1		3	5	2	6		9	2		9	2	1		1
123.010	2	1	08	99	11	1		3	8	11	8		9	1		9	1	1		1
123.011	2	2	21	99	7	1		3	3	1	1		1	2		1	5	1		1
123.012	8	1	01a	99	11	1		1	9	9	9	7	2	5	7	2	5	1		1
123.013	8	1	01a	99	11	1		1	8	9	8	6	2	5	6	2	5	1		1
123.014	2	1	05a	99	11	1		4	1	1	1		1	5		1	5	1		1
123.015	2	0	01a	99	0	1	123.016	3	6	1	1		1	2		1	2	1		1
123.016	2	0	01a	99	0	1	123.015	3	6	1	1		1	2		1	2	1		1
123.017	2	1	06	99	11	1		3	8	11	8		1	2		1	2	1		1
123.018	2	1	05a	99	11	1		1	9	9	9		1	2		1	5	1		1
123.019	3	0	99	4	0	1		3	7	4	10		1	5		1	2	1		1
123.020	2	0	0	99	0	1		3	5	2	6		1	0		1	0	1		1
123.021	2	0	01	99	0	1		1	8	8	8	6	2	3	6	2	3	1		1
123.022	2	0	0	99	0	1		3	6	2	6		1	2		1	2	1		1
123.023	2	0	06	99	0	1		1	8	8	8		1	0		1	0	1		1
123.024	2	0	01	99	0	2		1	7	7	7		1	2	0	0	0	1		1
123.025	2	0	01	99	0	2		1	7	7	7		1	2		9	0	1		1
123.026	2	0	01	99	0	1		1	6	6	6		1	0		1	3	1		1
123.027	2	0	01	99	0	1		1	8	9	8		1	2		1	2	1		1
125.001	2	2	42	99	7	1	125.001-3	3	5	5	5	9	2	2		9	1	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
125.002	2	2	42	99	7	1	125.001-3	3	5	5	5	9	2	2		9	1	1		1
125.003	2	2	42	99	7	1	125.001-3	3	5	5	5	9	2	2		9	1	1		1
125.004	5	0	0	99	0	1		3	6	2	6		9	1		9	1	1		5
125.005	5	0	0	99	0	1		1	4	13	4		9	2		9	1	1		6
125.006	2	1	11	99	11	1		1	13	13	13	3	2	5	8	2	3	1		1
125.007	2	2	25	99	8	1		3	6	11	6		1	2		1	2	1		1
125.008	2	0	53	99	0	1		1	9	9	8	13	2	3	8	3	3	1		1
125.009	2	1	01a	99	11	1		4	1	1	1	1	3	3	1	3	2	1		1
125.010	2	1	01a	99	11	2		3	7	4	7	5	2	5	6	2	5	1		1
125.011	2	2	23	99	7	1		3	12	12	12	12	3	2	12	3	2	1		1
125.012	2	2	25	99	7	1		1	9	9	9	6	2	2	6	2	2	1		1
125.013	2	2	28	99	7	1		1	8	8	8	8	3	2		9	1	1		1
125.014	2	2	31	99	8	1		2	8	4	8		9	2		9	2	1		1
125.015	2	2	23	99	8	1		1	8	12	8	8	3	2	8	3	2	1		1
125.016	2	1	47	99	11	1		3	6	2	7		9	1		9	1	1		1
125.017	2	1	17	99	11	1		1	9	9	9	2	2	5	8	3	5	1		1
125.018	2	1	11	99	11	1		1	6	9	6		1	2		1	2	1		1
125.019	2	1	47	99	12	1		3	6	2	6		1	2	7	2	5	1		1
125.020	2	1	01a	99	11	1		3	2	11	3		9	1		9	1	1		1
125.021	2	2	58	99	7	1		3	4	1	4	4	3	5	4	3	5	1		1
125.022	2	2	42	99	7	1		1	8	8	8	9	2	2	9	2	2	1		1
125.023	2	1	03a	99	11	1		3	8	12	8	6	3	2	6	3	5	1		1
125.024	3	0	99	3	0	1		3	8	8	1	6	2	2	4	2	5	1		1
125.025	2	2	25	99	7	1		3	9	1	1	6	2	1	2	2	1	1		1
125.026	3	0	99	3	0	1		3	9	4	9	6	2	1	2	2	5	1		1

(continued)



Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
125.027	2	2	01e	99	7	1		3	10	1	1		9	1	1	3	5	1		1
125.028	2	2	01c	99	7	1		3	6	1	1		9	1		0	0	1		1
126.001	2	1	14	99	11	1	126.002	3	7	3	7		1	2		1	2	1		1
126.002	2	1	14	99	11	1	126.001	3	7	3	7		1	2		1	2	1		1
126.003	8	1	14	99	11	1		3	8	2	8		1	2	3	2	3	1		1
126.004	8	2	43	99	8	1		3	7	11	7		1	2		1	2	4	1.6	1
126.005	4	2	99	99	9	1		3	7	11	7		1	2		1	2	4	1.6	1
126.006	2	1	01a	99	11	1		3	13	11	13	7	2	5	7	2	3	1		1
126.007	2	1	06	99	11	1	126.007-9	4	1	1	1	2	2	5	11	2	5	1		1
126.008	2	1	06	99	11	1	126.007-9	4	1	1	1	2	2	5	11	2	5	1		1
126.009	2	1	04a	99	11	1	126.007-9	4	1	1	1	2	2	5	11	2	5	1		1
126.010	2	1	11	99	11	1		2	8	4	4	7	3	3	5	3	5	1		1
126.011	5	0	99	99	0	1		3	6	1	2		1	2		9	1	1		10
126.012	2	2	25	99	7	1		3	6	1	6		9	2		9	2	1		1
126.013	2	1	11	99	11	1		3	7	3	7		1	2		1	2	1		1
126.014	2	2	22	99	7	1		3	12	1	12	13	3	2		1	2	1		1
126.015	2	2	58	99	7	1		3	7	1	7		1	5		1	5	1		1
126.016	2	0	07	99	0	1		3	6	12	2		1	2		9	1	1		1
126.017	2	0	04a	99	0	1		3	8	1	1		1	2		1	2	1		1
127.001	2	1	17	99	11	1		1	9	9	9	7	2	3	8	3	3	1		1
127.002	2	2	29	99	7	1		3	8	11	8	9	2	2	9	2	2	1		1
127.003	2	1	10	99	11	1		3	5	3	5		1	2		1	2	1		1
127.004	2	2	28	99	7	1		3	8	5	8	9	2	2	9	2	2	1		1
127.005	2	1	11	99	11	1		2	4	12	4	4	3	5	4	3	5	1		1
127.006	2	1	01a	99	11	1		3	8	11	8		1	5		1	5	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
127.007	2	1	02a	99	11	1		2	8	12	8	6	2	2	6	2	2	1		1
127.008	2	0	0	99	0	3		2	8	4	8	8	3	5	8	3	5	1		1
127.009	2	2	25	99	7	1		3	6	2	6		1	2		1	2	1		1
127.010	2	2	25	99	7	1		2	13	4	4	12	3	5	12	3	0	1		1
127.011	2	1	01a	99	11	1		3	9	2	2		9	1	2	3	5	1		1
127.012	2	1	10	99	11	1		3	13	1	13	4	2	3	13	3	5	1		1
128.001	2	0	01a	99	0	1		3	13	13	13	6	2	2	6	2	2	1		1
129.001	2	0	62	99	0	1		3	6	12	6		1	2		1	2	1		1
129.002	2	2	21	99	7	1		3	4	11	4	6	2	2	6	2	2	1		1
129.003	2	0	24	99	0	1		1	7	7	7		1	2		1	2	1		1
129.004	2	1	12	99	11	1		3	7	12	7		9	1	7	3	2	1		1
129.005	2	0	25	99	0	1		3	6	11	6		1	2		1	2	1		1
129.006	2	1	12	99	11	1		1	5	5	5		1	5		1	5	1		1
129.007	2	0	23	99	0	1		3	5	1	10		1	2		1	2	1		1
129.008	2	1	12	99	11	1		1	13	13	13	6	2	5	6	2	5	1		1
129.009	2	0	25	99	0	1		3	5	11	5		9	2		9	2	1		1
129.010	2	0	60	99	0	1		3	6	1	6		1	2		1	2	1		1
129.011	2	1	12	99	11	1		1	13	13	13	6	2	5	6	2	5	1		1
129.012	3	0	99	2	0	2		3	8	1	8	0	0	0	2	2	2	1		1
129.013	2	0	34	99	0	1		3	7	4	7	6	2	2		2	2	1		1
129.014	2	0	38	99	0	2		3	6	2	6		1	2		1	2	1		1
129.015	2	0	25	99	0	2		3	7	11	7	0	0	0		1	2	1		1
129.016	2	0	65	99	0	1		3	7	12	7		3	2		3	2	1		1
129.017	2	0	21	99	0	1		3	13	13	13	5	2	2	5	2	2	1		1
129.018	2	0	01a	99	0	1		1	9	9	13	4	2	2	4	2	5	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
129.019	2	0	01a	99	0	2		1	9	9	9	6	2	0	6	2	5	1		1
129.020	2	0	01a	99	0	1		3	8	4	4		3	5	2	2	2	1		1
129.021	2	0	13	99	0	1		4	1	1	1	3	2	3	3	2	3	1		1
129.022	2	0	01	99	0	1		2	13	13	13	8	2	5	8	2	5	1		1
129.023	2	0	02a	99	0	2		1	4	4	4		3	2		3	2	1		1
129.024	2	0	01a	99	0	1		1	8	9	8	8	2	2	7	2	5	1		1
129.025	2	0	36	99	0	1		1	6	6	6	4	2	2	4	2	2	1		1
129.026	2	0	36	99	0	1		1	6	6	6	4	2	2	4	2	2	1		1
129.027	2	0	01	99	0	1		2	9	4	4		3	2	2	2	2	1		1
129.028	2	0	0	99	0	1		3	6	13	6		1	2	0	0	0	1		1
129.029	2	0	01	99	0	1		1	9	9	9		9	2		9	2	1		1
129.030	2	0	01	99	0	1		2	7	4	4		3	5	4	2	2	1		1
129.031	2	0	01	99	0	1		3	12	12	3	1	2	5		1	5	1		1
129.032	2	0	12	99	0	3		1	6	7	6		1	5	0	0	0	1		1
129.033	2	0	1a	99	0	1		1	7	7	7		1	2		1	2	1		1
129.034	2	0	01	99	0	3		1	8	8	8	0	0	0		1	2	1		1
129.035	2	0	01	99	0	1		3	8	4	8	6	2	5	6	2	5	1		1
129.036	2	0	01	99	0	2		1	9	9	13	0	0	0	6	2	5	1		1
129.037	2	0	01	99	0	1		3	6	13	6		1	2		1	2	1		1
129.038	2	0	12	99	0	1		3	4	3	4	9	2	5	9	2	5	1		1
129.039	2	0	01	99	0	3		1	9	9	9	2	2	5	2	2	5	1		1
129.040	2	2	25	99	7	1		3	6	1	6		1	2		1	2	1		1
129.041	2	1	11	99	11	1	129.042	1	8	4	8	8	3	2	7	3	2	1		1
129.042	2	1	11	99	11	1	129.041	1	8	4	8	8	3	2	7	3	2	1		1
129.043	2	2	23	99	8	1		1	7	7	7		1	2		1	2	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
129.044	2	1	01a	99	11	1		3	12	12	4	12	3	5	12	3	3	1		1
129.045	2	1	01a	99	11	1		2	12	12	12	8	2	5	12	2	5	1		1
129.046	2	2	25	99	8	1		3	6	1	6		9	2		9	2	1		1
129.047	5	0	99	99	0	1		3	6	3	6		9	2		9	1	1		5
129.048	2	0	17	99	0	1		1	8	13	8	4	2	5	8	3	3	1		1
129.049	2	2	25	99	8	1		3	6	1	3		1	2		1	2	1		1
129.050	2	1	36	99	11	1		4	1	1	1	9	2	5	9	2	5	1		1
129.051	2	2	29	99	7	1		1	8	8	8	9	2	2		9	1	1		1
129.052	2	1	10	99	11	1		3	6	2	8	6	3	5	8	3	5	1		1
129.053	2	2	30	99	8	1		3	8	1	6		1	2		1	2	1		1
129.054	2	1	06	99	11	1		1	9	9	9	9	3	5	4	2	3	1		1
129.055	2	2	25	99	7	1		2	6	4	4		1	2		9	1	1		1
129.056	2	2	25	99	7	1		3	6	2	6		9	2		9	2	1		1
129.057	2	0	29	99	0	1		3	6	1	6		9	2		9	2	1		1
129.058	2	2	25	99	7	1		3	4	2	4		1	2		1	2	1		1
129.059	2	1	01a	99	11	2		1	9	9	9		0	0		1	2	1		1
129.060	2	0	0	99	0	3		3	2	13	0		1	5		0	0	1		1
129.061	2	1	01a	99	11	2		3	9	12	9		0	0	6	2	5	1		1
129.062	2	1	11	99	11	2	129.065	1	8	9	8		0	0	8	3	3	1		1
129.063	8	1	47	99	11	1		3	8	2	8	6	2	2	6	2	5	1		1
129.064	8	1	04a	99	11	1		3	12	12	12	8	2	2	13	2	5	1		1
129.065	8	1	17	99	11	2	129.062	1	8	9	8		0	0	6	2	3	1		1
129.066	2	1	01a	99	11	2		1	8	9	8	8	3	0	8	3	5	1		1
129.067	2	0	0	99	0	1		2	13	13	13	9	2	5	9	2	5	1		1
129.068	2	1	01a	99	11	2		1	8	9	8	8	3	0	8	3	5	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
129.069	2	1	17	99	11	1		3	5	1	5	9	2	5	5	3	5	1		1
129.070	2	1	11	99	11	1		3	8	11	8	8	3	3	8	3	3	1		1
129.071	2	1	01a	99	11	1		2	8	13	12		1	2		1	2	1		1
129.072	2	1	01a	99	11	2		3	8	11	8	6	2	0	6	2	0	1		1
129.073	2	1	11	99	11	1		2	8	4	7	7	3	5	9	2	5	1		1
129.074	2	2	28	99	7	1		3	4	1	4	4	3	5	4	3	2	1		1
129.075	2	2	25	99	7	1		3	4	1	4		1	2		1	2	1		1
129.076	2	1	11	99	11	1		1	8	9	8		1	2		1	2	1		1
129.077	2	2	28	99	7	1		1	7	7	7	8	2	2	8	2	2	1		1
129.078	2	1	04a	99	11	1		1	9	9	9		1	5		1	2	1		1
129.079	2	2	01e	99	7	1		2	8	13	13		3	2	12	2	2	1		1
129.080	2	2	52	99	9	1		1	8	9	8		1	2		1	2	1		1
129.081	2	1	04a	99	11	1		3	4	4	4	9	2	2	9	2	2	1		1
129.082	2	0	0	99	0	3		1	8	8	8	9	2	5	9	2	5	1		1
129.083	2	2	25	99	7	1		4	11	1	11	11	3	2	11	3	2	1		1
129.084	2	2	25	99	7	1		4	1	1	1	1	3	5	1	3	5	1		1
129.085	8	1	04a	99	13	1		2	9	13	9	9	3	2	9	3	2	1		1
129.086	2	2	13	99	7	1		3	12	1	12	5	2	3	1	3	3	1		1
129.087	2	0	02a	99	0	1		1	9	9	9	8	2	2	8	2	2	1		1
129.088	2	0	0	99	0	3		3	12	12	12	9	2	5	9	2	5	1		1
129.089	2	2	28	99	7	1		4	1	1	1	11	2	5	11	2	5	1		1
129.090	2	1	12	99	11	1		3	6	2	11		1	5	2	3	2	1		1
129.091	2	1	01a	99	11	1		1	8	8	8		1	2		1	2	1		1
129.092	2	2	25	99	8	1		3	6	1	6		1	2		1	2	1		1
129.093	2	2	42	99	7	2		3	9	2	9		0	0		0	0	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
129.094	5	0	0	99	0	1		2	4	13	4		1	2		9	1	1		6
129.095	7	2	29	99	7	1		1	8	13	8		9	1		9	1	1		1
129.096	2	2	23	99	7	2		1	8	8	8		0	0		0	0	1		1
129.097	2	2	25	99	7	1		3	13	13	2		9	2		9	1	1		1
129.098	2	2	58	99	7	2		3	8	11	8		0	0		0	0	1		1
129.099	3	0	99	0	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
129.100	3	0	99	0	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
129.101	5	0	99	99	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
129.102	5	0	99	99	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
129.103	5	0	99	99	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
129.104	5	0	99	99	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
129.105	5	0	99	99	0	1	129.099-105	3	6	11	6		1	2		1	2	1		1
131.001	3	0	99	2	0	1		3	6	11	6		1	2		1	2	1		1
131.002	2	2	25	99	7	1		2	6	11	6	7	2	5	13	3	2	1		1
131.003	2	2	23	99	8	1		1	7	9	7	7	3	2	7	3	2	1		1
131.004	2	2	53	99	8	1		3	8	9	12	4	2	3	9	2	3	1		1
131.005	2	0	01	99	0	1		1	8	8	8	6	2	5	6	2	5	1		1
131.006	2	0	64	99	0	1	131.009	4	1	1	1	12	2	5	12	2	5	1		1
131.007	2	1	06	99	11	1		1	13	13	13	4	2	2	4	2	5	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
131.008	2	1	01a	99	11	1		1	13	13	13	6	2	5	6	2	5	1		1
131.009	2	0	64	99	0	1	131.006	4	1	1	1	12	2	5	12	2	5	1		1
131.010	2	1	11	99	11	1		3	12	12	12	1	2	3	7	2	3	1		1
131.011	8	1	01a	99	11	1		3	8	1	8	6	2	5	7	2	3	1		1
131.012	2	1	17	99	11	3		3	12	11	9	5	2	5	5	2	5	1		1
131.013	2	1	01a	99	11	1		3	12	11	12	5	2	5	5	2	5	1		1
131.014	2	1	01a	99	11	1		3	9	1	9	7	2	5	7	2	5	1		1
131.015	2	1	01a	99	11	1		2	4	4	4	5	2	5	5	2	5	1		1
131.016	2	1	10	99	11	1		3	12	12	12	4	3	5	7	2	3	1		1
131.017	2	1	01a	99	13	1		3	9	12	9	6	2	5	6	2	3	1		1
131.018	2	1	01a	99	11	1		3	8	11	8	7	2	5	8	3	5	1		1
133.001	8	2	41	99	7	1		3	2	12	2		9	1		9	1	3	2.1	1
133.002	8	1	43	99	11	1		4	1	1	1	1	3	0	1	3	0	1		1
133.003	2	0	23	99	0	1		3	8	1	1	6	3	2	1	3	2	1		1
133.004	2	0	01a	99	0	2		1	6	6	6	0	0	0	2	2	2	1		1
133.005	2	0	01a	99	0	2		1	6	6	6	0	0	0	11	2	2	1		1
133.006	3	0	99	2	0	1		1	8	9	8		1	2		1	2	1		1
133.007	1	0	99	99	0	1		3	9	3	8	9	2	5		1	2	1		1
135.001	2	1	01a	99	11	1		3	9	2	9	5	2	5	5	2	5	1		1
135.002	2	1	01a	99	13	3		3	9	2	9	7	2	5	7	2	5	1		1
135.003	2	2	44	99	7	1		2	13	13	13		1	2		1	2	1		1
135.004	2	1	11	99	11	1		2	13	13	13	6	2	5	6	2	0	1		1
135.005	2	2	44	99	7	1		2	13	13	13	13	3	2	9	2	2	1		1
135.006	5	0	0	99	0	1		3	6	11	6		9	2		9	1	1		6
135.007	2	1	01a	99	11	1		2	13	13	11	5	2	3	11	3	4	1		1

(continued)

Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
135.008	2	1	01a	99	11	1		2	13	13	13	6	2	2	6	2	2	1		1
136.001	2	0	05a	99	0	1		4	1	1	1	2	2	3	11	2	3	1		1
136.002	2	0	01a	99	0	1		2	12	4	12	8	2	3	13	2	3	1		1
136.003	1	0	0	99	0	1		1	5	5	5		9	1		9	1	1		1
137.001	2	1	11	99	11	1	137.002	2	9	4	9	12	2	3	8	2	3	1		1
137.002	2	1	11	99	11	1	137.001	2	9	4	9	12	2	3	8	2	3	1		1
137.003	2	2	25	99	8	1		4	11	11	11	10	2	5	11	3	5	1		1
137.004	2	2	57	99	7	1		4	1	1	1	11	3	2	11	3	2	1		1
139.001	8	0	43	99	0	1		3	4	12	12	1	2	2	1	2	2	2	2	1
139.002	8	2	52	01	7	1	140.001	3	4	11	4	5	2	2	5	2	2	1		1
139.003	2	2	23	99	7	1		3	4	11	4	9	2	5	11	2	2	1		1
139.004	2	0	42	99	0	1		3	9	4	1	8	2	5	8	2	5	1		1
139.005	8	1	07	99	11	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1
139.006	8	1	07	99	11	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1
139.007	8	1	44	99	11	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1
139.008	3	1	99	2	13	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1
139.009	5	1	99	2	13	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1
139.010	5	1	99	2	13	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1
139.011	5	1	99	2	13	1	139.005-011	3	13	5	13	7	2	5	7	2	3	1		1

(continued)



Table K.1. continued

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
140.001	8	2	52	01	7	1	139.002	3	4	11	4	5	2	2	5	2	2	1		1
140.002	2	0	26	99	0	1		1	6	6	6		3	2		3	2	1		1
140.003	2	0	52	99	0	1		3	4	11	4	5	2	2	5	2	2	1		1
140.004	6	1	03c	1	10	5		4	1	4	1		1	1		1	1	1		1
140.005	2	1	07	99	11	1		3	4	3	4	5	2	5	8	2	3	1		1
140.006	2	0	23	99	0	1		2	8	13	13	2	2	2	11	2	2	1		1
140.007	2	0	01a	99	0	1		3	4	4	4	4	2	3	4	2	3	1		1
141.001	2	1	17	99	11	1		1	8	8	8	1	2	3	7	2	3	1		1
141.002	2	2	25	99	7	3		4	1	1	1	0	0	0		1	2	1		1
143.001	2	0	40	99	0	1		3	8	11	8	7	3	2	7	3	2	1		1
143.002	2	0	01	99	0	3		3	6	2	6	8	2	2	6	2	3	1		1
144.001	8	0	43	99	0	1		3	4	3	4	6	3	2	6	3	2	1		1
144.002	2	1	06	99	11	1		2	4	4	4	4	2	3	4	2	3	1		1
144.003	2	0	24	99	0	1		2	9	4	9	6	3	2	6	3	2	1		1
144.004	4	2	99	99	9	1		1	7	7	7		3	2		9	2	1		2
144.005	2	0	23	99	0	1		2	4	4	4	6	2	2	2	2	2	1		1
145.001	2	1	05a	99	11	1		3	6	12	6		1	2		1	2	1		1
147.001	2	0	17	99	0	1	147.002	3	4	11	4	4	3	2	4	3	2	1		1
147.002	2	0	18	99	0	1	147.001	3	4	11	4	4	3	2	4	3	2	1		1
147.003	2	2	58	99	7	1		3	7	6	2	7	3	2	2	3	2	1		1
147.004	2	1	07	99	11	4		3	12	4	4	8	2	2	8	2	2	1		1

**Table K.2.** Diagnostic ceramics from excavated contexts (variables V-AS: metrics and paste characterizations)

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
039.001	8	82.5	0	0	0	0	0	0	0	0	0	5.2	0	2	2	0	0	3	0	0	2	3	0	0
047.001	3	7.4	0	0	0	0	0	0	0	0	0	5.1	0	2	9	0	0	0	0	1	2	0	0	0
050.001	7	77.4	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	3	0	2	0	0	0	0
057.001	5	14.1	0	22	0	9.3	14	0	0	16.5	5.1	5.4	116	4	10	5	0	0	0	3	0	0	0	25
057.002	4	4.6	0	0	12	0	0	0	0	0	0	0	0	4	5	0	20	0	0	0	0	0	0	0
057.003	4	12	0	17	0	15.1	15.5	0	0	14.5	8.7	5.1	80	4	4	20	0	0	0	0	0	3	0	0
057.004	3	4.7	0	15	0	7.5	0	0	0	15.5	0	0	103	4	5	0	20	0	0	2	0	0	0	0
057.005	2	2.3	0	14	0	8.4	8.8	0	0	10.2	6.4	0	46	4	4	10	0	0	0	3	0	3	0	0
057.006	2	2.5	0	20	0	13.8	14.5	0	0	14.5	7.6	0	109	4	5	0	15	0	0	2	0	2	0	0
057.007	3	8.3	0	0	0	0	0	0	0	5.6	0	5	59	4	4	7	0	0	0	0	0	3	0	0
057.008	2	3.9	0	0	0	6.7	0	0	0	13.9	0	7.6	105	4	4	20	0	0	0	0	0	3	0	0
058.001	3	1.6	0	11	0	0	0	0	0	6.3	0	6.1	46	4	10	0	0	2	0	0	0	0	0	40
058.002	3	3.6	0	13	0	7.5	0	0	0	11.4	0	0	120	4	4	20	0	0	0	0	0	0	0	0
060.001	3	4.3	0	24	0	11.6	9.2	0	0	14.3	7.6	4.1	110	4	10	0	0	0	0	3	0	0	0	15
060.002	5	21.3	0	0	39	0	0	0	0	0	0	9.3	0	4	4	20	0	0	0	0	0	3	0	0
060.003	3	4.3	0	15	0	13.1	15.8	0	0	11	5.3	0	118	4	4	15	0	0	0	3	0	0	0	0
060.004	3	3.7	0	0	0	0	16.1	0	0	5.7	5.8	0	30	4	10	2	0	0	0	3	0	0	0	20
060.005	3	2.6	0	17	0	0	0	0	0	7.9	0	5.9	74	4	4	20	0	0	0	0	0	3	0	0
060.006	4	10	0	18	0	8.9	14.7	0	0	13.4	7.1	6.5	110	4	4	15	0	0	0	1	0	0	0	0
060.007	3	3.8	0	16	0	0	0	0	0	6.9	0	5.1	80	4	4	15	0	0	0	0	0	0	0	0
060.008	1	0.6	0	0	0	6.5	0	0	0	7	0	0	106	2	9	0	0	0	0	0	2	0	0	0
061.001	5	11.5	0	20	0	7.8	0	0	0	11.9	0	3.2	104	2	4	20	0	0	0	0	0	1	0	0
061.002	4	18.6	0	26	0	12.6	0	0	0	16.4	0	0	140	4	5	0	20	0	0	0	0	2	0	0
061.003	4	11.6	0	30	0	13.7	0	0	0	13.4	0	4.3	151	4	2	0	0	25	0	0	0	1	0	0
061.004	5	15.1	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	2	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
061.005	5	10.2	0	31	0	8	0	0	0	11.4	0	7.3	90	4	3	0	0	0	30	0	0	0	0	0
061.006	3	7.3	0	31	0	13.9	0	0	0	12.4	0	6.5	104	4	10	0	0	0	0	5	0	0	0	15
061.007	3	10.7	0	33	0	12.3	0	0	0	20.7	0	0	101	4	10	0	0	0	0	7	0	0	0	10
061.008	3	10.2	0	33	0	12.3	0	0	0	20.7	0	0	101	4	10	0	0	0	0	7	0	0	0	10
061.009	2	6.1	0	21	0	21.5	0	0	0	15.9	0	0	103	4	2	0	0	15	0	0	0	0	0	0
061.010	3	7	0	23	0	9.3	0	0	0	13.2	0	6.1	100	4	2	0	0	15	0	3	0	0	0	0
061.011	4	6.2	0	21	0	8.8	0	0	0	11.5	0	0	99	4	3	0	0	0	25	1	0	1	0	0
061.012	4	6.6	0	24	0	8.2	0	0	0	12.1	0	5.5	90	4	5	0	20	0	0	0	0	1	0	0
061.013	3	5.4	0	16	0	10.8	0	0	0	10	0	5.3	102	4	2	0	0	15	0	0	0	3	0	0
061.014	3	2.8	0	20	0	4.9	0	0	0	11.4	0	3.4	93	4	4	10	0	0	0	1	0	0	0	0
061.015	3	2.1	0	16	0	5.5	0	0	0	11.6	0	4.1	63	4	6	0	0	1	0	7	0	0	0	0
061.016	4	6	0	20	0	10.8	0	0	0	8.9	0	0	54	4	2	0	0	15	0	2	0	0	0	0
061.017	3	5.3	0	20	0	13	0	0	0	14.1	0	0	103	4	2	0	0	10	0	0	0	1	0	0
061.018	3	5.1	0	23	0	13	0	0	0	14.8	0	0	102	4	10	0	0	0	0	3	0	0	0	15
061.019	3	2.8	0	16	0	0	0	0	0	6.1	0	5.6	103	4	10	0	0	2	0	1	0	0	0	5
061.020	3	3.4	0	31	0	0	0	0	0	7.9	0	0	80	4	10	0	0	0	0	2	1	0	0	10
061.021	3	2.7	0	18	0	0	0	0	0	6.2	0	5.7	76	4	10	0	0	0	0	2	1	0	0	20
061.022	3	2.8	0	19	0	0	0	0	0	5.5	0	7.3	107	4	5	0	7	0	0	2	0	0	0	3
061.023	2	2.4	0	21	0	0	0	0	0	7	0	8	87	4	10	1	0	0	0	0	1	0	0	10
061.024	3	5.7	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	3	0	0
061.025	3	4.6	0	0	0	0	0	0	0	5.7	0	4.9	0	4	2	0	0	10	0	0	2	0	0	0
061.026	2	3.3	0	0	0	10.9	0	0	0	9.9	0	0	0	4	6	0	0	1	0	2	1	0	0	0
061.027	2	2.7	0	0	0	6	0	0	0	10.4	0	0	0	4	5	0	10	0	0	1	0	0	0	0
061.028	2	1	0	0	0	6.3	0	0	0	6.6	0	3.5	0	2	6				2	0	0	0	0	0
061.029	2	1.6	0	0	0	8.8	0	0	0	10.5	0	0	0	2	2			2	1	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
061.030	3	2.9	0	0	0	0	0	0	0	0	0	0	0	4	2			5		3	0	0	0	0
061.031	2	2.2	0	0	0	10.3	0	0	0	11.1	0	0	0	4	4	20	0	0	0	2	1	0	0	0
061.032	2	1.3	0	0	0	0	0	0	0	7.4	0	0	0	4	2			7		2	0	0	0	0
061.033	2	1.2	0	0	0	0	0	0	0	6.8	0	0	0	4	10			2		0	3	0	0	15
061.034	2	1.2	0	0	0	0	0	0	0	0	0	0	0	4	4	7				2	0	0	0	0
062.001	6	28.7	0	23	0	14.9	0	0	0	23.4	0	0	60	4	5	0	15	0	0	0	0	0	0	0
062.002	4	14.3	0	28	0	14.7	0	0	0	18.3	0	0	117	4	3	0	0	0	25	2	0	0	0	0
062.003	7	28.9	80	36	0	12.3	0	0	0	13.2	0	0	86	4	3	0	0	0	30	1	0	0	0	0
062.004	5	19.7	0	21	0	10.2	0	0	0	13.7	0	0	103	4	3	0	0	0	25	0	0	0	0	0
062.005	5	16.2	0	20	0	14.5	0	0	0	12.9	0	6.2	111	4	3	0	0	0	30	0	0	0	0	0
062.006	3	5.4	0	21	0	10.7	0	0	0	12.8	0	0	112	4	2	0	0	15	0	1	0	1	0	0
062.007	3	8.9	0	26	0	12	0	0	0	13.8	0	0	65	4	3	0	0	0	10	0	0	1	0	0
062.008	4	8.2	0	44	0	14.2	0	0	0	11.6	0	0	110	4	10	0	0	0	0	5	0	0	0	20
062.009	3	4	0	16	0	4.8	0	0	0	11.6	0	2.6	101	4	4	5	0	0	0	0	0	0	0	0
062.010	4	6.7	0	23	0	7.9	0	0	0	12.4	0	3.8	126	4	4	20	0	0	0	0	0	1	0	0
062.011	3	4.5	0	23	0	5.6	0	0	0	11.1	0	6.4	71	4	2	0	0	15	0	0	0	2	0	0
062.012	3	4.2	0	15	0	0	0	0	0	0	0	0	80	4	2	0	0	7	0	1	0	1	0	0
062.013	3	3.7	0	19	0	0	0	0	0	7.9	0	0	69	4	3	0	0	0	15	0	0	0	0	0
062.014	3	2	0	16	0	5.3	0	0	0	6.6	0	0	92	4	10	0	0	0	0	1	3	0	0	5
062.015	4	8.2	0	25	0	13.1	0	0	0	17.2	0	0	89	4	2	0	0	3	0	3	0	0	0	0
062.016	4	10.9	0	30	0	13.1	0	0	0	13.6	0	6.7	113	4	2	0	0	15	0	0	0	0	0	0
062.017	3	4.6	0	30	0	11	0	0	0	13.7	0	5.4	113	4	2	0	0	15	0	0	0	0	0	0
062.018	3	1.9	0	23	0	6.4	0	0	0	6.7	0	5.1	110	2	6	0	0	1	0	3	0	0	0	0
062.019	3	1.9	0	23	0	6.4	0	0	0	6.7	0	5.1	110	2	6	0	0	1	0	3	0	0	0	0
062.020	2	2.3	0	12	0	7.1	0	0	0	7.8	0	4	90	2	6	0	0	0	0	2	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
062.021	2	1.5	0	20	0	6.5	0	0	0	7	0	0	102	2	6	0	0	0	0	5	0	0	0	0
062.022	3	4.4	0	19	0	0	0	0	0	5.5	8.1	0	60	4	10	0	0	1	0	1	0	0	0	5
062.023	6	22.5	0	18	0	0	0	0	0	6.9	0	6.3	75	4	2	0	0	15	0	3	0	0	0	0
062.024	4	2.3	0	18	0	0	0	0	0	9.2	0	10	67	4	10	0	0	1	0	3	0	0	0	20
062.025	4	7.2	0	27	0	0	0	0	0	7.1	0	5.2	66	4	10	0	0	1	0	5	0	0	0	15
062.026	3	5.4	0	16	0	0	0	0	0	5.7	0	5.4	71	4	10	0	0	0	0	2	0	0	0	10
062.027	3	2.4	0	16	0	0	0	0	0	4.8	0	4.8	87	4	10	0	0	0	0	2	0	0	0	5
062.028	2	0.5	0	13	0	0	0	0	0	3.8	0	3.4	55	4	10	0	0	0	0	0	2	0	0	7
062.029	2	2.2	0	0	0	0	0	0	0	7.6	0	4.5	0	4	2		10		0	0	0	1	0	0
062.030	2	1.7	0	0	0	0	0	0	0	8.2	0	0	0	2	2		7		0	0	0	1	0	0
062.031	2	1.9	0	0	0	0	0	0	0	5.8	0	4.8	0	4	4	20	0	0	0	1	0	1	0	0
062.032	3	2.9	0	0	0	0	0	0	0	0	0	0	0	4	5		10		2	0	0	0	0	0
062.033	1	0.7	0	0	0	0	0	0	0	5.6	0	0	0	4	10				1	0	0	0	0	10
062.034	2	0.8	0	0	0	0	0	0	0	4.7	0	4.9	79	4	10				0	2	0	0	0	5
062.035	2	0.9	0	0	0	0	0	0	0	5.6	0	5.3	0	4	4	15	0	0	0	1	0	0	0	0
062.036	2	1.3	0	25	0	0	0	0	0	5.2	0	5.9	0	4	10				0	3	0	0	0	15
062.037	2	3.1	0	0	0	13.1	0	0	0	13.2	0	0	98	4	3			15	7	0	0	0	0	0
063.001	5	11.7	0	53	0	10.2	0	0	0	11.8	0	6.2	105	4	10	0	0	0	0	5	0	0	0	20
063.002	4	8.5	0	28	0	8.9	0	0	0	10.9	0	0	132	4	3	0	0	0	35	5	0	0	0	0
063.003	3	5.3	0	45	0	8.7	0	0	0	11.7	0	0	131	4	5	0	20	0	0	2	0	0	0	0
063.004	3	4.5	0	21	0	9.5	0	0	0	5.7	0	0	41	4	2	0	0	15	0	1	0	0	0	0
063.005	2	3.5	0	0	0	14.9	0	0	0	14.2	0	0	0	4	10				5	0	0	0	0	10
063.006	2	4.1	0	0	0	13.4	0	0	0	12.6	0	0	0	4	2		15		0	0	0	1	0	0
063.007	5	21.2	0	0	10	0	0	0	0	0	0	5.5	0	4	3	0	0	0	15	1	0	0	0	0
063.008	4	15.8	0	0	10	0	0	0	0	0	0	5.5	0	4	3	0	0	0	15	1	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
063.009	7	34.3	0	21	0	13.3	19	0	0	13.8	5.5	4.6	79	4	3	0	0	0	25	1	0	0	0	0
063.010	6	22.2	0	24	0	13.7	18.9	0	0	12.4	5.3	5	89	4	2	0	0	30	0	0	0	0	0	0
063.011	7	40.1	164	26	0	8.1	0	0	0	10.9	0	8.7	125	4	5	0	20	0	0	3	0	0	0	0
063.012	7	34.3	164	26	0	8.1	0	0	0	10.9	0	8.7	125	4	5	0	20	0	0	3	0	0	0	0
063.013	3	5.3	0	21	0	12.1	0	0	0	12.2	0	0	123	4	5	0	15	0	0	1	0	0	0	0
064.001	6	24.3	0	25	0	10.9	0	0	0	13.5	0	4.3	70	4	5	0	30	0	0	0	0	0	0	0
064.002	7	25.6	0	28	0	12	0	0	0	20.4	0	5.6	83	4	10	0	0	0	0	2	0	0	0	15
064.003	6	44.8	130	19	0	12.2	0	26	48.2	10	0	7.2	88	4	5	0	25	0	0	0	0	0	0	0
064.004	4	8.8	0	23	0	11.8	0	0	0	16.7	0	4	58	4	10	0	0	0	1	0	0	0	0	10
064.005	8	56.8	0	39	0	10.1	0	0	0	13.3	0	6.9	113	4	2	0	0	20	0	0	0	1	0	0
064.006	6	17.5	0	39	0	9.7	0	0	0	13.6	0	0	112	4	3	0	0	0	20	0	0	1	0	0
064.007	5	128.1	0	16	0	0	0	0	0	6.5	0	6	77	4	3	0	0	0	20	5	0	0	0	0
064.008	4	6.5	0	17	0	0	0	0	0	6.9	0	5.2	86	4	3	0	0	0	20	0	0	0	0	0
064.009	5	14.2	0	18	0	0	0	0	0	6.8	0	6.2	84	4	3	0	0	0	15	5	0	1	0	0
064.010	3	5.2	0	18	0	0	0	0	0	7.8	0	5.1	86	4	2	0	0	15	0	0	0	1	0	0
064.011	5	14.7	0	36	0	6.1	0	0	0	14.1	0	5.2	109	4	2	0	0	10	0	2	0	0	0	0
064.012	4	9.2	0	21	0	13.8	0	0	0	15.5	0	4.7	47	4	3	0	0	0	15	0	0	0	0	0
064.013	4	10.2	0	40	0	10.1	0	0	0	13.8	0	0	116	4	2	0	0	20	0	0	0	0	0	0
064.014	4	14	0	27	0	13.6	19.1	0	0	18.2	5.2	6.2	101	4	2	0	0	20	0	0	0	5	0	0
064.015	3	7	0	33	0	0	0	0	0	9.3	0	4.5	56	4	3	0	0	0	25	0.5	0	1	0	0
064.016	3	8.9	0	19	0	13	0	0	0	14.8	0	0	114	4	3	0	0	0	25	1	0	1	0	0
064.017	4	9	0	48	0	12.9	0	0	0	6.1	0	0	117	4	6	0	0	0	0	3	1	0	0	2
064.018	3	6.9	0	23	0	13	0	0	0	13.4	0	0	95	4	3	0	0	0	30	1	0	0	0	0
064.019	3	10.6	0	27	0	12.5	0	0	0	16.1	0	0	119	4	2	0	0	20	0	1	0	0	0	0
064.020	4	7.1	0	23	0	11.1	0	0	0	11.3	0	0	75	4	2	0	0	15	0	0	0	2	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
064.021	3	4.4	0	21	0	8.9	0	0	0	10.6	0	0	112	4	3	0	0	0	10	1	0	0	0	0
064.022	3	3.5	0	17	0	5.7	0	0	0	7.3	0	4	90	2	6	0	0	0	0	5	0	0	0	0
064.023	4	9.6	0	19	0	0	0	0	0	6.6	0	6	61	4	3	0	0	0	20	5	0	1	0	0
064.024	3	5	0	26	0	0	0	0	0	8.8	0	3.5	46	4	4	20	0	0	0	0	0	1	0	0
064.025	3	4	0	28	0	8.8	0	0	0	13.2	0	4.7	29	4	4	15	0	0	0	2	0	0	0	0
064.026	3	2.3	0	22	0	5.7	0	0	0	10.7	0	3.3	100	4	2	0	0	10	0	1	0	0	0	0
064.027	5	23.4	0	0	6	0	0	0	0	0	0	6.3	0	4	5	0	20	0	0	0	0	1	0	0
064.028	2	3.3	0	0	0	0	0	0	0	11.1	0	0	0	4	3			15	0	0	0	0	0	0
064.029	4	4.9	0	0	0	0	0	0	0	0	0	0	0	4	6				5	0	0	0	0	0
064.030	3	5.1	0	0	0	11.8	0	0	0	11.9	0	3.9	0	4	2		15		0	0	0	1	0	0
064.031	2	2.4	0	0	0	0	0	0	0	6.8	0	0	0	4	10				3	0	0	0	5	5
064.032	2	2.4	0	0	0	7.7	0	0	0	8.8	0	0	0	4	10				2	0	0	0	0	5
064.033	2	1.6	0	0	0	5.8	0	0	0	0	0	4.5	0	4	4	5			0	0	0	0	0	0
064.034	2	1	0	0	0	0	0	0	0	5.7	0	0	0	4	10		1		0	0	0	0	0	3
064.035	2	1.7	0	0	0	0	0	0	0	6.4	0	0	0	4	2		5		0	0	0	0	0	0
064.036	2	1.1	0	0	0	5.8	0	0	0	6.3	0	0	0	4	10				1	2	0	0	0	3
064.037	2	2.8	0	0	0	0	0	0	0	12.7	0	0	0	4	3	0	0	0	20	0	0	0	0	0
064.038	2	0.7	0	0	0	0	0	0	0	4.1	0	0	0	4	4	30	0	0	0	0	0	0	0	0
064.039	2	2.2	0	0	0	8.8	0	0	0	11.3	0	0	0	4	2			5	1	0	0	0	0	0
064.040	2	1.9	0	0	0	0	0	0	0	4.1	0	4.8	0	4	4	15			0	0	0	1	0	0
064.041	2	3.1	0	0	0	10.5	0	0	0	12.7	0	0	0	4	5		15		0	0	0	0	0	0
066.001	7	52.8	139	55	0	10.9	0	0	0	13.6	0	9.1	107	4	2	0	0	1	0	0.5	0	0	0	0
066.002	4	5.6	0	19	0	5.5	0	0	0	7.4	0	4	75	2	6	0	0	0	0	5	0	0	0	0
066.003	7	43.5	159	40	0	11.6	0	0	0	13.3	0	8.6	99	4	6	0	0	5	0	10	0	0	0	0
066.004	7	42.5	156	41	0	11.7	0	0	0	13.7	0	9.5	108	4	6	0	0	0	5	10	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
066.005	5	34.7	0	17	0	11.7	14.5	0	0	14.4	11.3	8	64	4	5	0	25	0	0	1	0	0	0	0
066.006	4	12.7	0	21	0	13.1	0	0	0	19.3	0	0	109	4	4	10	0	0	0	0	0	0	0	0
066.007	5	7.5	0	17	0	0	0	0	0	4.5	0	3.7	86	4	5	0	20	0	0	0	0	0	0	0
066.008	4	6.3	0	17	0	0	0	0	0	5.2	0	4.8	85	4	2	0	0	25	0	0	0	0	1	0
066.009	4	8.9	0	16	0	6.9	0	0	0	8.2	0	6	107	2	6	0	0	0.5	0	1	0	0	0	0
066.010	3	3.1	0	19	0	7.8	0	0	0	6.8	0	3.1	76	2	6	0	0	0	0	5	0	0	0	0
066.011	4	9.9	0	20	0	11.9	0	0	0	13.4	0	0	81	4	5	0	15	0	0	0	0	2	0	0
066.012	3	10.7	0	30	0	13.1	0	0	0	16.9	0	0	0	4	2	0	0	25	0	0	0	0	0	0
066.013	3	8.8	0	20	0	11.6	0	0	0	12.4	0	0	76	4	4	20	0	0	0	0	0	0	0	0
066.014	4	10.3	0	24	0	16.6	0	0	0	14.6	0	0	61	4	6	0	0	0	5	10	0	0	0	0
066.015	4	6.6	0	24	0	0	0	0	0	63	0	4.6	86	4	9	0	0	1	0	2	5	0	0	0
066.016	4	8.2	0	20	0	0	0	0	0	6.5	0	6.9	78	4	3	0	0	0	20	0	0	0	0	0
066.017	2	2.1	0	15	0	0	0	0	0	5.5	0	5.4	81	4	4	15	0	0	0	0	0	0	0	0
066.018	3	2.2	0	0	0	0	0	0	0	4.6	0	4.4	0	4	2	0	0	15	0	0	0	0	0	0
066.019	2	2.1	0	9	0	0	0	0	0	0	0	0	51	4	4	10	0	0	0	1	0	0	0	0
066.020	3	2.5	0	17	0	7.7	0	0	0	7.2	0	4	91	2	6	0	0	0	0	2	0	0	0	0
066.021	3	3.2	0	26	0	7.1	0	0	0	9.5	0	4.2	75	2	6	0	0	1	0	2	0	0	0	0
066.022	2	1.5	0	16	0	5.3	0	0	0	7	0	3.4	102	2	6	0	0	0.5	0	3	0	0	0	0
066.023	2	1.9	0	17	0	8.5	0	0	0	7.5	0	3.5	0	2	6	0	0	0	0	1	0	0	0	0
066.024	2	1.6	0	0	0	0	0	0	0	6.1	0	5	0	4	2	0	0	5	0	0	0	0	0	0
066.025	5	12.7	0	0	0	0	0	0	0	0	0	7.1	0	4	3	0	0	0	10	1	0	0	0	0
066.026	3	6.9	0	0	0	0	0	0	0	0	0	7.4	0	4	3	0	0	0	10	1	0	0	0	0
066.027	3	5	0	0	0	0	0	0	0	0	0	4.9	0	4	3	0	0	0	20	1	0	0	0	0
066.028	4	13.3	0	0	0	0	0	0	0	0	0	7.5	0	4	5	0	15	0	0	0	0	0	0	0
066.029	3	6.1	0	0	0	13.9	0	0	0	14.5	0	0	0	4	5	0	20	0	0	1	0	0	0	0

(continued)



Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	
066.030	3	5.3	0	0	0	11.2	0	0	0	11.5	0	0	0	4	5		15			0	0	0	0	0	
066.031	2	1.8	0	0	0	0	0	0	0	0	0	0	0	4	7			1		0	0	0	0	5	0
066.032	2	0.6	0	0	0	0	0	0	0	0	0	0	0	4	7			1		0	0	0	0	5	0
066.033	2	0.5	0	0	0	0	0	0	0	4.8	0	0	0	4	2			5		0	0	0	0	0	0
066.034	13	99	0	23	0	24.9	29.8	0	0	10.3	11	6	60	4	10	0	0	2	0	7	0	0	0	0	30
066.035	7	40	0	52	0	13	0	0	0	14.9	0	10.2	101	4	10	0	0	0	0	5	0	0	0	10	20
066.036	4	14	0	52	0	13	0	0	0	14.9	0	10.2	101	4	10	0	0	0	0	5	0	0	0	10	20
066.037	3	4.9	0	16	0	10.4	0	0	0	12.1	0	0	52	4	2	0	0	25	0	1	0	1	0	0	0
066.038	6	37.4	0	20	0	12.2	0	0	0	13.5	0	7.6	65	4	4	25	0	0	0	3	0	0	0	0	0
066.039	3	5.9	0	24	0	8.8	0	0	0	17.5	0	0	53	4	2	0	0	15	0	1	0	0	0	0	0
066.040	7	25	0	27	0	11.7	0	0	0	14.4	0	4.1	104	4	2	0	0	25	0	0	0	1	0	0	0
066.041	6	19.4	0	26	0	11.1	0	0	0	14.9	0	4.8	107	4	2	0	0	20	0	1	0	1	0	0	0
066.042	5	17.4	0	19	0	13.4	0	0	0	15.1	0	6.2	104	4	2	0	0	20	0	0	0	2	0	0	0
066.043	3	6.8	0	35	0	13	0	0	0	16.3	0	0	112	4	10	0	0	3	0	2	0	0	0	0	10
066.044	5	17.2	0	26	0	0	0	0	0	9.6	0	0	32	4	10	0	0	0	0	3	2	0	0	0	20
066.045	3	12.9	0	0	0	14.9	0	0	0	16.7	0	0	86	4	5	0	25	0	0	1	0	2	0	0	0
066.046	3	10.5	0	23	0	14.5	0	0	0	16.5	0	0	101	4	3	0	0	0	25	1	0	1	0	0	0
066.047	4	11.6	0	28	0	13.4	0	0	0	17.4	0	0	73	4	2	0	0	10	0	1	0	1	0	0	0
066.048	3	6.7	0	37	0	8.3	0	0	0	14.3	0	0	90	4	5	0	20	0	0	1	0	1	0	0	0
066.049	3	6.7	0	37	0	8.3	0	0	0	14.3	0	0	90	4	5	0	20	0	0	1	0	1	0	0	0
066.050	3	3.7	0	14	0	7.3	0	0	0	10	0	0	71	4	2	0	0	7	0	0	0	0	0	0	0
066.051	3	2.2	0	20	0	8.3	0	0	0	7.6	0	2.9	66	2	6	0	0	0	0	3	0	0	0	0	0
066.052	3	2.8	0	16	0	0	0	0	0	10.1	0	9.3	53	4	10	0	0	1	0	1	3	0	0	0	10
066.053	3	4.3	0	18	0	0	0	0	0	4.9	0	4	76	4	2	0	0	15	0	0	1	0	0	0	0
066.054	4	14.6	0	19	0	0	0	0	0	14.4	0	0	31	4	10	0	0	0	0	1	5	0	0	0	15

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
066.055	3	4.6	0	19	0	0	0	0	0	6.9	0	6.3	63	4	3	0	0	0	25	1	0	3	0	0
066.056	7	50	0	0	0	0	0	0	0	0	0	11.7	0	2	3	0	0	0	20	0	0	0	0	0
066.057	2	2.1	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
066.058	2	2.5	0	0	0	9.7	0	0	0	14.2	0	0	73	4	5	0	0	0	0	0	0	0	0	0
066.059	2	2.2	0	18	0	0	0	0	0	5.9	0	4.8	84	4	2	0	0	70	0	0	0	0	0	0
066.060	2	3.6	0	0	0	9	0	0	0	10.6	0	0	102	4	5	0	0	0	0	2	0	0	0	0
066.061	2	0.9	0	0	0	0	0	0	0	4.7	0	0	78	4	4	5	0	0	0	0	0	0	0	0
066.062	2	0.6	0	0	0	0	0	0	0	4.9	0	0	83	4	2	0	0	0	0	1	0	0	0	0
066.063	2	1.2	0	0	0	0	0	0	0	6	0	5.7	75	4	2	0	0	5	0	0	0	0	0	0
066.064	2	1.9	0	0	0	0	0	0	0	6.2	0	5.1	0	4	2	0	0	7	0	2	0	0	0	0
066.065	2	0.8	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	10	0	2	0	0	0	0
066.066	2	2.4	0	0	0	9.2	0	0	0	9.8	0	0	78	4	4	10	0	0	0	0	0	0	0	0
066.067	2	1	0	0	0	0	0	0	0	5.1	0	0	82	4	2	0	0	7	0	0	0	0	0	0
067.001	7	14.7	0	25	0	7.3	0	0	0	7.1	0	4.3	60	2	7	0	0	0	0	0	0	0	1	0
067.002	4	8.1	0	0	0	10.1	0	0	0	13.9	0	5.8	100	4	3	0	0	0	25	1	0	0	0	0
067.003	4	7.7	0	23	0	4.9	0	0	0	4.5	0	4.9	74	2	2	10	0	0	0	1	0	0	2	0
067.004	3	2.4	0	0	0	4.9	0	0	0	5.4	0	5.2	78	2	2	10	0	0	0	1	0	1	1	0
067.005	3	5	0	0	0	9.6	0	0	0	12.5	0	0	0	4	2	0	0	15	0	1	0	0	2	0
067.006	3	5.3	0	0	0	7	0	0	0	8.1	0	5.7	88	2	4	10	0	0	0	0	0	0	5	0
067.007	3	6.3	0	0	0	8.2	0	0	0	9.4	0	8.5	0	4	4	10	0	0	0	0	0	0	0	0
067.008	3	3.9	0	0	0	9	0	0	0	20.8	0	0	0	4	4	10	0	0	0	0	0	0	1	0
067.009	3	5.5	0	0	0	13.3	0	0	0	11.6	0	0	0	4	3	0	0	0	7	0	0	0	0	0
067.010	6	20.4	0	0	0	0	0	0	0	0	0	5.3	0	2	6	0	0	0.5	0	1	0	0	0	0
067.011	9	106.4	0	0	11	0	0	0	0	0	0	7.8	0	4	3	0	0	0	5	1	0	0	0	0
067.012	2	2.2	0	0	0	9.1	0	0	0	10.7	0	0	0	4	5	0	7	0	0	2	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
067.013	2	1.1	0	0	0	5	0	0	0	5.7	0	0	0	2	4	7	0	0	0	0	0	0	1	0
067.014	2	1.2	0	0	0	0	0	0	0	6.1	0	0	0	4	5	0	0	0	0	5	0	0	0	0
068.001	3	3.6	0	20	0	8.1	8.5	0	0	8.3	4.9	3.6	130	4	5	0	15	0	0	0	0	0	0	0
068.002	6	27.7	0	19	0	11.4	13.9	0	0	12.9	9.8	0	80	4	4	15	0	0	0	2	0	2	0	0
068.003	3	6.4	0	20	0	9.5	10.8	0	0	11.8	7.9	4.6	125	4	4	15	0	0	0	0	0	1	0	0
068.004	2	1	0	0	0	0	0	0	0	4.7	0	4.5	0	4	4	10	0	0	0	0	0	0	0	0
068.005	3	4.8	0	13	0	9.3	0	0	0	13.6	0	0	0	4	5	0	20	0	0	0	2	0	0	0
068.006	2	2.8	0	13	0	9.1	10.4	0	0	12.2	8	0	134	4	4	10	0	0	0	0	0	1	0	0
068.007	3	7.5	0	11	0	13.9	11.3	0	0	16.3	11.3	7.3	145	4	5	0	15	0	0	0	0	0	0	0
068.008	2	2	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	0	0	0	0	0
068.009	5	21	0	0	0	0	0	0	0	0	0	7.8	0	2	4	7	0	0	0	1	0	0	0	0
068.010	2	1.8	0	14	0	5.2	6.4	10.8	0	6.2	4.4	3.7	102	2	9	0	0	0	0	0	5	0	0	0
068.011	2	1.6	0	16	0	6.6	0	0	0	9.4	0	0	114	4	3	0	0	0	3	0	0	0	0	0
068.012	4	7.8	0	17	0	8.4	12.4	0	0	11.6	5.2	4.5	123	4	4	10	0	0	0	2	0	3	0	0
068.013	2	1.2	0	0	0	0	0	0	0	4.9	0	4.4	90	4	10	5	0	0	0	0	0	2	0	7
068.014	2	1.8	0	13	0	0	0	0	0	7.3	0	6.8	74	4	4	7	0	0	0	1	0	0	0	0
068.015	3	5.3	0	21	0	10.8	0	0	0	14.3	0	0	130	4	4	20	0	0	0	1	0	1	0	0
068.016	3	4.4	0	20	0	11.2	0	0	0	16.7	0	0	70	4	4	7	0	0	0	0	0	0	0	0
068.017	3	3.3	0	18	0	7.9	0	0	0	13.9	0	0	0	4	4	15	0	0	0	1	0	0	0	0
068.018	3	4.1	0	20	0	8.4	0	0	0	11.7	0	0	117	4	5	0	10	0	0	0	0	3	0	0
069.001	2	1.3	0	12	12	0	0	0	13.8	3.1	0	3.2	82	2	9	0	0	0	0	0	5	0	0	0
079.001	3	8.2	0	29	0	12.1	0	0	0	11.6	0	7.7	82	4	5	0	7	0	0	2	0	0	0	0
079.002	3	9	0	29	0	13.8	13.8	0	0	12.2	7.8	0	71	4	5	0	7	0	0	2	0	0	0	0
079.003	5	9.1	0	0	12	0	0	0	0	0	0	0	0	4	4	7	0	0	0	3	0	0	0	0
079.004	2	1.3	0	0	0	6.7	0	0	0	9.5	0	0	65	4	4	7	0	0	0	1	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
089.001	2	0.8	0	0	0	0	0	0	0	5.6	0	0	0	4	4	10	0	0	0	0	0	0	0	0
089.002	4	5.2	0	25	0	7.1	0	0	0	8.9	0	3.2	116	2	6	0	0	0	0	7	0	0	0	0
089.003	2	1.3	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	0	0	0	0	0
089.004	2	1.8	0	12	0	8.6	10	0	0	10.3	6.1	0	125	4	4	10	0	0	0	0	0	0	0	0
089.005	2	0.6	0	0	0	0	0	0	0	6.2	0	4.4	72	4	10	1	0	0	0	0	1	0	0	15
089.006	3	4.3	0	14	0	10.9	15.7	0	0	10.2	8.6	0	73	4	4	10	0	0	0	2	0	2	0	0
089.007	3	4.4	0	14	0	10.9	15.7	0	0	10.2	8.6	5.3	73	4	4	10	0	0	0	2	0	2	0	0
089.008	3	4	0	30	0	10	0	0	0	12.8	0	5	120	4	4	15	0	0	0	0	0	2	0	0
089.009	2	3.3	0	26	0	10.2	0	0	0	13.2	0	6.9	120	4	5	0	10	0	0	1	0	1	0	0
089.010	2	1.1	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	0	0	0	0	0
090.001	4	7.2	0	20	0	6	7.4	0	0	5.2	4.1	5.4	117	2	9	0	0	0	0	0	3	0	0	0
090.002	6	20	0	18	0	0	0	0	0	6.5	0	6.4	112	4	4	15	0	0	0	0	0	3	0	0
090.003	3	3	0	18	0	9.8	11.4	0	0	9.9	7		110	4	4	10	0	0	0	0	0	2	0	0
090.004	3	2.7	0	21	0	7.6	10.1	0	0	6.8	4.9	4.4	110	2	6	0	0	0	0	5	0	0	0	0
090.005	2	1.4	0	0	0	0	0	0	0	0	0	0	0	4	10	1	0	0	0	5	0	0	0	15
090.006	3	2.1	0	20	0	8.8	0	0	0	11.1	0	0	64	4	3	0	0	0	5	2	0	0	0	0
090.007	2	1.5	0	19	0	0	0	0	0	6.2	0	6.2	78	4	4	10	0	0	0	0	0	0	0	0
090.008	3	6.5	0	27	0	12.1	0	0	0	13.7	0	0	58	4	4	15	0	0	0	1	0	0	0	0
090.009	4	5.9	0	23	0	6.9	0	0	0	9.9	0	5.5	70	4	2	0	0	15	0	0	0	0	0	0
091.001	4	10.1	0	27	0	15.8	16.3	0	0	14.5	7.8	6.9	107	4	4	15	0	0	0	0	0	2	0	0
091.002	3	6.7	0	0	0	0	0	0	0	0	0	0	0	4	10	2	0	0	0	2	0	0	0	15
091.003	5	13.4	0	23	0	10	0	0	0	11.9	0	9	40	4	5	0	20	0	0	0	0	5	0	0
091.004	3	3.8	0	27	0	0	0	0	0	6.2	0	6.4	109	4	10	0	0	0	0	5	0	0	0	15
091.005	3	7.3	0	0	10	0	0	0	0	0	0	0	0	2	9	0	0	0	0	1	7	0	0	0
091.006	3	2.5	0	17	0	7.1	0	0	0	7.2	0	5.2	107	2	9	0	0	0	0	0	5	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
091.007	4	9.7	0	0	0	0	0	0	0	0	0	7.7	0	2	9	0	0	0	0	0	5	0	0	0
091.008	2	2.5	0	0	0	9.7	0	0	0	10.3	0	7.3	60	4	4	10	0	0	0	3	0	2	0	0
091.009	2	1.4	0	17	0	0	0	0	0	5.7	0	5.2	79	4	4	10	0	0	0	0	0	2	0	0
091.010	4	13.1	0	49	0	14.2	0	0	0	16.7	0	8.9	150	4	4	15	0	0	0	0	0	2	0	0
091.011	3	3.7	0	29	0	9.4	0	0	0	9.6	0	7.7	28	4	4	20	0	0	0	0	0	2	0	0
091.012	4	10.7	0	16	0	13.7	0	0	0	13.9	0	6.1	104	4	5	0	10	0	0	2	0	0	0	0
091.013	2	1.8	0	18	0	8.5	7.6	0	0	7.4	4.7	4.3	103	2	6	0	0	0	0	2	0	0	0	0
091.014	3	3.3	0	16	0	72	0	0	0	6	0	5.9	0	4	2	0	0	5	0	0	3	0	0	0
091.015	2	0.9	0	0	0	4.8	0	0	0	6.2	0	4.3	71	4	4	7	0	0	0	0	0	2	0	0
091.016	2	1.1	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	0	0	0	0	0
091.017	3	5.8	0	18	0	10.4	0	0	0	16.3	0	6.4	111	4	4	15	0	0	0	0	3	0	0	0
091.018	3	10.7	0	28	0	15.6	0	0	0	14.6	0	7.4	53	4	4	15	0	0	0	2	0	2	0	0
091.019	3	3.4	0	0	0	5.9	0	0	0	10.3	0	6.7	37	4	4	15	0	0	0	0	0	2	0	0
091.020	3	4.7	0	26	0	9.3	0	0	0	15.1	0	8	109	4	2	0	0	7	0	2	0	0	0	0
091.021	3	5	0	16	0	11.5	11.2	0	0	13.8	9.1	7.8	111	4	5	0	20	0	0	2	0	0	0	0
091.022	3	3.7	0	15	0	8.2	0	0	0	10.9	0	6.3	35	4	4	15	0	0	0	2	0	2	0	0
091.023	2	3.3	0	0	0	7.9	0	0	0	13.5	0	6.9	48	4	4	7	0	0	0	5	0	1	0	0
091.024	2	1.9	0	14	0	0	0	0	0	5.8	0	5.6	63	4	4	20	0	0	0	0	0	1	0	0
091.025	2	1.8	0	13	0	0	0	0	0	5.4	0	4	70	4	4	5	0	0	0	0	0	5	0	0
092.001	3	7.7	0	0	0	15.5	0	0	0	13.2	0	7.6	55	4	4	15	0	0	0	0	0	0	0	0
092.002	3	2.5	0	13	0	4.4	0	0	0	6.6	0	3.2	56	2	9	0	0	0	0	0	7	0	0	0
092.003	4	6.8	0	0	0	0	0	0	0	0	0	0	94	4	4	15	0	0	0	0	0	0	0	0
092.004	5	11.9	0	23	0	13.6	0	0	0	12.6	0	6.8	125	4	4	10	0	0	0	5	0	2	0	0
092.005	6	27.6	0	28	0	15.9	0	0	0	13.8	0	6.1	79	4	5	0	15	0	0	3	0	1	0	0
092.006	5	10.8	0	26	0	14.7	0	0	0	6.9	0	5.4	65	4	4	15	0	0	0	2	0	2	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
092.007	3	6.4	0	0	0	0	0	0	0	14.2	0	0	87	4	5	0	15	0	0	0	0	2	0	0
092.008	3	3.5	0	0	0	6.7	0	0	0	7.6	0	3.6	90	4	4	15	0	0	0	0	0	3	0	0
092.009	3	5	0	19	0	7.5	0	0	0	7.8	0	7.8	103	4	4	10	0	0	0	0	1	0	0	0
092.010	3	3.9	0	15	0	6.7	0	0	0	5.2	0	4.3	75	4	4	7	0	0	0	5	0	2	0	0
092.011	4	14.8	180	30	0	16.4	0	0	0	13.4	0	10.9	75	4	4	15	0	0	0	0	0	2	0	0
092.012	5	8.9	0	30	0	0	0	0	0	5.5	0	4.6	85	4	4	15	0	0	0	5	0	3	0	0
092.013	4	14.5	0	23	0	13.7	0	0	0	12.9	0	5.5	78	4	4	15	0	0	0	0	0	2	0	0
092.014	4	10.2	0	23	0	11.6	0	0	0	12.7	0	5.7	64	4	4	15	0	0	0	3	0	2	0	0
092.015	3	8.4	0	0	0	13.4	0	0	0	13.1	0	6.8	0	4	4	15	0	0	0	0	0	1	0	0
092.016	4	10.5	0	25	0	11.3	0	0	0	13.6	0	6.6	121	4	5	0	20	0	0	1	0	1	0	0
092.017	4	13.5	0	34	0	5.9	0	0	0	10.7	0	7.8	74	4	5	0	15	0	0	0	0	0	0	0
092.018	3	7.5	0	19	0	10.7	0	0	0	14	0	6.8	129	4	4	15	0	0	0	0	0	1	0	0
092.019	4	5.6	0	0	0	5.9	0	0	0	5.8	0	3.6	91	4	4	10	0	0	0	0	0	2	0	0
092.020	5	14	0	30	0	8.1	0	0	0	9	0	7.9	55	4	4	10	0	0	0	0	0	3	0	0
092.021	3	6.6	0	26	0	12.1	0	0	0	13.2	0	6.7	123	4	4	15	0	0	0	0	0	2	0	0
092.022	3	9.9	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	0	0	1	0	0
092.023	3	4.2	0	0	0	0	0	0	0	0	0	0	60	4	4	15	0	0	0	0	0	1	0	0
092.024	4	6.4	0	0	0	0	0	0	0	6.8	0	6.4	79	4	4	15	0	0	0	0	0	0	0	0
092.025	4	9.5	0	18	0	0	0	0	0	0	0	0	118	4	4	15	0	0	0	0	0	0	0	0
092.026	3	5.9	0	24	0	7.8	0	0	0	12	0	3.3	131	4	4	15	0	0	0	0	0	0	0	0
092.027	4	7.2	0	16	0	9.2	0	0	0	12.4	0	8.5	67	4	5	0	20	0	0	0	0	0	0	0
092.028	2	5.1	0	0	0	15.1	0	0	0	9.6	0	0	60	4	4	15	0	0	0	0	0	0	0	0
092.029	3	4.9	0	0	0	0	0	0	0	5.5	0	0	43	4	5	0	15	0	0	0	0	0	0	0
092.030	3	10.8	0	20	0	0	0	0	0	13.8	0	0	97	4	4	15	0	0	0	1	0	0	0	0
092.031	4	5.3	0	22	0	6.5	0	0	0	6.4	0	4	105	4	4	7	0	0	0	0	0	1	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
092.032	4	5.7	0	17	0	6.3	0	0	0	0	0	0	0	4	4	15	0	0	0	0	0	1	0	0
093.001	6	21.5	0	37	0	9.8	16	0	0	12.7	8.9	6.5	61	4	2	0	0	25	0	1	0	2	0	0
093.002	4	15	0	19	0	16	18.2	0	0	15.5	6.7	6.4	61	4	4	15	0	0	0	3	0	2	0	0
093.003	5	19.4	0	21	0	18.2	18.7	0	0	15.2	8.4	5.8	78	4	4	15	0	0	0	2	0	2	0	0
093.004	7	32.1	0	36	0	8.7	0	0	0	11.3	0	6	64	4	4	10	0	0	0	0	1	1	0	0
093.005	4	11.5	0	25	0	11.6	11.4	0	0	13.3	7.9	7.2	104	4	3	0	0	0	15	4	0	2	0	0
093.006	5	18.4	0	28	0	13.9	10.9	0	0	13.7	9.6	7.8	135	4	5	0	25	0	0	2	0	0	0	0
093.007	5	18.4	0	42	0	16.6	17.6	0	0	17.1	7.7	6.3	67	4	4	20	0	0	0	0	0	0	0	0
093.008	4	12.3	0	24	0	10.2	0	0	0	11.2	0	6.8	36	4	4	10	0	0	0	1	2	0	0	0
093.009	4	7.6	0	27	0	14.2	21.4	0	0	15.2	5.9	6.8	62	4	4	15	0	0	0	0	0	3	0	0
093.010	3	7.3	0	23	0	13.9	0	0	0	14.4	0	5.7	107	4	4	10	0	0	0	0	6	0	0	0
093.011	4	11.4	0	24	0	11	14.2	0	0	13.3	7.3	5.8	110	4	3	0	0	0	20	1	0	2	0	0
093.012	3	4.4	0	16	0	8.8	0	0	0	10.3	0	0	80	4	5	0	15	0	0	2	0	0	0	0
093.013	3	3.8	0	0	0	10.1	0	0	0	9.6	0	6.7	0	4	4	15	0	0	0	0	2	2	0	0
093.014	3	6.7	0	28	0	11.6	0	0	0	14.5	0	6.2	115	4	4	15	0	0	0	0	0	0	0	0
093.015	3	7.7	0	18	0	14.9	0	0	0	15.5	0	0	63	4	4	7	0	0	0	2	3	0	0	0
093.016	3	9.3	0	25	0	13.1	14.6	0	0	14.9	7	7.3	108	4	5	0	15	0	0	3	0	2	0	0
093.017	3	2.6	0	20	0	6.5	0	0	0	8.7	0	6.1	120	4	10	0	0	0	0	0	0	0	0	40
093.018	3	5.7	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	10	0	0	0	2	0	0
093.019	4	4	0	21	0	6	16.5	0	0	9.3	3.7	3.8	56	4	2	0	0	20	0	0	3	0	0	0
093.020	4	8.9	0	18	0	13.5	0	0	0	13.1	0	7.3	97	4	5	0	25	0	0	0	3	2	0	0
093.021	3	2.7	0	15	0	7.1	0	0	0	10.5	0	4	86	4	5	0	20	0	0	0	2	0	0	0
093.022	3	2.4	0	17	0	5.5	0	0	0	8.3	0	3.7	55	4	2	0	0	20	0	0	0	0	0	0
093.023	3	4.2	0	18	0	10.4	0	0	0	17.9	0	4.9	29	2	9	0	0	0	0	0	3	0	0	0
093.024	3	3.5	0	16	0	7.3	0	0	0	6.9	0	3.2	112	2	9	0	0	0	0	0	5	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
093.025	3	4.3	0	20	0	9.6	0	0	0	6.3	0	4.3	110	2	9	0	0	0	0	0	7	0	0	0
093.026	2	1.5	0	18	0	7.5	0	0	0	5.4	0	4.2	99	2	9	0	0	0	0	0	3	0	0	0
093.027	6	17.5	0	18	0	5.4	0	0	0	6.3	0	5.9	78	4	4	15	0	0	0	0	0	5	0	0
093.028	4	8.8	0	12	0	9.4	10.9	0	0	11.2	9.5	6.2	54	4	5	0	15	0	0	3	0	0	0	0
093.029	4	5.2	0	17	0	5.2	0	0	0	6	0	5.2	85	4	4	7	0	0	0	0	3	2	0	0
093.030	3	6.4	0	24	0	4.5	0	0	0	12.1	0	7.4	53	4	4	10	0	0	0	1	0	1	0	0
093.031	3	4.4	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	1	0	3	0	0
093.032	3	4.2	0	43	0	9.8	0	0	0	10.9	0	0	84	4	10	0	0	2	0	1	0	0	0	15
093.033	3	4.4	0	28	0	0	0	0	0	6.2	0	8	95	4	4	10	0	0	0	0	3	0	0	0
093.034	3	2.1	0	17	0	0	0	0	0	5.3	0	4.5	85	4	5	0	10	0	0	7	0	0	0	0
093.035	3	3.3	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	10	1	0	0	0	0
093.036	2	1.5	0	18	0	0	0	0	0	5.5	0	4.8	79	4	4	10	0	0	0	0	0	0	0	0
093.037	3	1.8	0	17	0	5.1	0	0	0	5.5	0	4.5	87	4	4	10	0	0	0	0	2	0	0	0
093.038	3	3.4	0	21	0	7.9	0	0	0	10.3	0	0	72	2	2	0	0	1	0	0	1	0	0	0
093.039	2	2.1	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	15	0	2	0	0	0	0
093.040	2	1.6	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	2	0	0	0	0
093.041	2	1.4	0	14	0	0	0	0	0	5.2	0	6.2	80	4	10	0	0	0	0	3	0	0	0	15
093.042	2	1.9	0	0	0	6.1	0	0	0	12.5	0	4.3	0	4	4	10	0	0	0	2	0	0	0	0
093.043	2	2	0	0	0	0	0	0	0	4.1	0	5.1	0	4	5	0	15	0	0	0	0	2	0	0
093.044	2	1.9	0	0	0	0	0	0	0	0	0	4.9	0	4	4	15	0	0	0	0	2	0	0	0
093.045	2	0.7	0	0	0	0	0	0	0	5	0	4.6	0	4	4	15	0	0	0	0	0	0	0	0
093.046	2	1	0	0	0	4.6	0	0	0	5.8	0	4.4	82	4	4	10	0	0	0	0	3	0	0	0
093.047	2	1.5	0	0	0	0	0	0	0	5	0	4.7	0	4	2	0	0	7	0	1	2	0	0	0
093.048	7	34.5	0	0	8	0	0	0	0	0	0	4.9	0	2	6	0	0	1	0	7	0	0	0	0
093.049	9	72.8	141	38	0	18.5	17	25.3	0	15.5	8	6.4	86	4	5	0	25	0	0	1	0	5	0	0

(continued)



Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
093.050	6	25	141	38	0	18.5	17	25.3	0	15.5	8	6.4	86	4	5	0	25	0	0	1	0	5	0	0
093.051	6	12.9	0	19	0	0	0	0	0	4.5	0	4.5	94	4	4	15	0	0	0	1	0	2	0	0
093.052	5	17.3	0	25	0	10.6	16.2	0	0	16	6.5	6	65	4	4	25	0	0	0	3	0	2	0	0
093.053	5	21	0	20	0	0	0	0	0	6	0	6.9	69	4	4	20	0	0	0	0	0	2	0	0
093.054	8	37.5	0	20	0	0	0	0	0	6	0	6.9	69	4	4	20	0	0	0	0	0	2	0	0
093.055	6	27.3	0	0	0	0	0	0	0	0	0	2.2	0	4	5	0	15	0	0	1	0	2	0	0
093.056	4	14	0	26	0	5.1	7.7	0	0	6.9	4.8	1.1	110	4	4	25	0	0	0	1	0	2	0	0
093.057	5	17.8	0	22	0	0	0	0	0	2.6	0	3.1	64	4	4	15	0	0	0	0	0	3	0	0
093.058	6	23.5	0	24	0	11.6	19.5	0	0	14.5	6.1	6.8	70	4	4	20	0	0	0	1	0	2	0	0
093.059	3	4.1	0	20	0	7.9	0	0	0	9.4	0	5.2	113	4	5	0	15	0	0	0	0	0	0	0
093.060	6	33.3	180	36	0	107	16.3	0	0	15.3	8.3	7.5	112	4	4	15	0	0	0	3	0	0	0	0
093.061	3	9.2	0	24	0	10.2	16.1	0	0	14.2	10.4	4.5	96	4	5	0	15	0	0	3	0	3	0	0
093.062	4	9.9	0	17	0	17.3	13	0	0	13.6	10.9	7.3	68	4	4	15	0	0	0	2	0	0	0	0
093.063	7	60.8	0	0	12	0	0	0	0	0	0	0	0	4	4	15	0	0	0	2	0	1	0	0
093.064	4	9.2	0	16	0	14.7	15.5	0	0	14.6	8	5.1	52	4	4	15	0	0	0	2	0	1	0	0
093.065	2	0.9	0	0	0	0	0	0	0	5.7	0	5.3	0	4	2	0	0	7	0	0	0	1	0	0
093.066	4	11.2	0	22	0	7.2	10.1	0	0	13.6	10.4	5.3	123	4	4	15	0	0	0	0	0	2	0	0
093.067	5	18.2	0	23	0	6.2	0	0	0	9.5	0	8.6	91	4	5	0	20	0	0	0	0	3	0	0
093.068	4	7.1	0	0	4	0	0	0	0	0	0	5	0	4	9	0	0	0	0	0	10	0	0	0
093.069	5	17.3	0	26	0	8.6	0	0	0	10.3	0	4.9	110	2	6	0	0	1	0	2	5	0	0	0
093.070	2	2.8	0	0	0	8.3	0	0	0	9.8	0	7.3	119	4	5	0	15	0	0	0	0	1	0	0
093.071	2	0.6	0	0	0	0	0	0	0	5.3	0	5.4	0	4	4	10	0	0	0	0	0	0	0	0
093.072	5	11.1	0	0	8	0	0	0	0	0	0	4.6	0	4	5	0	5	0	0	3	0	0	0	7
093.073	3	4.2	0	0	0	8.9	12.8	0	0	9.7	5.4	6	32	4	4	15	0	0	0	2	0	0	0	0
093.074	4	13	0	22	0	14.1	15.4	0	0	14.9	7.5	0	125	4	5	0	20	0	0	1	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
093.075	5	17.9	0	23	0	13.9	13.8	0	0	14.6	7	4	113	4	4	20	0	0	0	0	0	2	0	0
093.076	3	5.1	180	13	0	6.9	6.4	0	0	8.3	5.8	4.6	125	4	9	2	0	0	0	0	5	0	0	0
093.077	3	2.4	0	19	0	0	0	0	0	6.5	0	6.3	76	4	10	0	0	0	0	3	0	0	0	15
093.078	4	7.1	0	19	0	5.8	9.4	0	0	9.9	6.6	7	82	2	9	2	0	0	0	0	5	0	0	0
093.079	1	0.5	0	0	0	0	0	0	0	5.2	0	4.6	0	4	4	7	0	0	0	0	0	0	0	0
093.080	4	12.4	0	20	0	12.6	0	0	0	13.3	0	5.2	138	4	4	5	0	0	0	5	0	5	0	0
093.081	3	3.3	0	0	0	7.3	12.7	0	0	10.8	7.1	4.4	70	4	4	10	0	0	0	3	0	2	0	0
093.082	3	2.4	0	9	0	0	14	0	0	5.7	4.1	3.8	53	4	4	10	0	0	0	3	0	0	0	0
093.083	3	6.1	0	22	0	11	11.7	0	0	13.1	6.1	4.8	111	4	5	0	10	0	0	3	0	0	0	0
093.084	3	3.2	0	20	0	9.1	7.4	0	0	11.7	8.5	6.7	42	4	4	5	0	0	0	1	0	3	0	0
093.085	2	1	0	19	0	7.4	0	0	0	9.8	0	5	15	4	4	10	0	0	0	3	0	3	0	0
093.086	2	0.9	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	0	2	0	0	0
093.087	2	0.5	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	0	0	2	0	0
093.088	3	3.5	0	0	0	0	0	0	0	0	0	5.1	0	4	4	10	0	0	0	2	0	2	0	0
093.089	2	0.8	0	17	0	0	8.1	0	0	4.9	4.5	0	56	4	4	10	0	0	0	2	0	0	0	0
093.090	2	1.3	0	0	0	0	0	0	0	6	0	0	0	4	4	15	0	0	0	1	0	0	0	0
093.091	2	0.7	0	18	0	7.7	0	0	0	6.6	0	0	94	2	6	0	0	0	0	2	0	0	0	0
093.092	2	1.1	0	17	0	6.8	7.4	0	0	7.9	5.8	4.2	108	4	9	0	0	0	0	1	5	0	0	0
093.093	3	3.7	0	0	13	0	0	0	0	0	0	0	0	2	6	0	0	0	0	2	0	0	0	0
093.094	2	0.5	0	8	0	2.9	0	0	0	5.5	0	3.4	104	4	6	1	0	0	0	1	0	0	0	0
093.095	3	9.8	0	22	0	10.8	15.5	0	0	13.1	6.1	5.3	114	4	5	0	7	0	0	0	0	2	0	0
093.096	3	8.3	0	18	0	15.7	17	0	0	14.4	9.3	6.4	76	4	4	15	0	0	0	1	0	2	0	0
093.097	3	2.8	0	18	0	0	0	0	0	5.7	0	6.8	58	4	4	15	0	0	0	0	0	2	0	0
093.098	4	13	0	32	0	13.2	14.6	0	0	13.2	7.8	7.6	100	4	4	10	0	0	0	2	0	2	0	0
093.099	4	6	0	13	0	7.6	11.5	0	0	10.2	5.4	4.4	78	4	4	10	0	0	0	0	3	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
093.100	3	1.9	0	15	0	0	0	0	0	5.5	0	4.5	73	4	4	15	0	0	0	0	0	0	0	0
093.101	3	4	0	24	0	0	0	0	0	11	0	7	20	4	4	20	0	0	0	0	0	1	0	0
093.102	3	6.3	0	19	0	15.9	0	0	0	16.1	0	6.1	52	4	4	15	0	0	0	0	2	0	0	0
093.103	2	3.3	0	19	0	7.8	0	0	0	12.3	0	6.5	103	4	4	15	0	0	0	0	0	0	0	0
093.104	2	3.1	0	22	0	0	0	0	0	8.1	0	7.8	42	4	4	10	0	0	0	0	0	0	0	0
093.105	2	1.2	0	0	0	0	0	0	0	6.3	0	6	0	4	4	15	0	0	0	0	0	0	0	0
093.106	2	0.6	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	1	0	0	0	0
093.107	2	1	0	19	0	6.7	0	0	0	5.9	0	0	0	4	4	10	0	0	0	1	0	0	0	0
093.108	3	6	0	26	0	9.9	0	0	0	13.5	0	0	115	4	4	15	0	0	0	1	0	0	0	0
093.109	3	3.6	0	18	0	6.5	0	0	0	13.3	0	4.1	109	4	5	0	15	0	0	1	0	0	0	0
093.110	3	5.2	0	18	0	6.6	0	0	0	12.9	0	6.6	62	4	4	10	0	0	0	0	0	2	0	0
093.111	2	0.9	0	9	0	4.8	0	0	0	6.4	0	4.6	62	4	4	10	0	0	0	0	0	0	0	0
093.112	6	32.8	148	31	0	11.6	14	0	0	13.4	6.8	3.4	89	4	4	20	0	0	0	7	0	3	0	0
094.001	7	32.6	148	31	0	11.3	14	0	0	13.5	6.8	4.4	89	4	4	20	0	0	0	7	0	3	0	0
094.002	8	39.6	148	31	0	11.1	14	0	0	13.2	6.8	3.2	89	4	4	20	0	0	0	7	0	3	0	0
094.003	5	4.3	0	0	0	0	0	0	0	0	0	3.4	0	4	4	20	0	0	0	7	0	3	0	0
094.004	4	6.5	0	16	0	0	0	0	0	6.4	0	6.5	77	4	10	1	0	0	0	5	0	0	0	15
094.005	6	19.1	0	0	0	0	0	0	0	0	0	0	0	2	6	2	0	0	0	7	0	0	0	0
094.006	5	20	0	0	8	0	0	0	0	0	0	5.6	0	4	10	0	0	0	3	5	0	0	0	15
094.007	4	11.8	0	28	0	14.1	14	0	0	9.8	8.8	5	60	4	4	15	0	0	0	2	0	2	0	0
094.008	3	6	0	28	0	14.1	0	0	0	9.8	0	5	60	4	4	15	0	0	0	2	0	2	0	0
094.009	6	19.9	0	36	0	16.2	15.7	0	0	11.2	7.4	5.8	111	4	5	0	25	0	0	2	0	0	0	0
094.010	3	4.2	0	22	0	0	7	0	0	11.3	8	0	0	4	4	20	0	0	0	3	0	0	0	0
094.011	10	90.1	0	35	0	16.1	16.2	0	0	16.9	11	6.5	122	4	10	0	0	0	0	7	0	0	0	25
094.012	6	21.5	0	15	0	14.8	25.1	0	0	13.2	8	7.6	62	4	4	25	0	0	0	0	0	1	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
094.013	5	17.6	0	53	0	17.2	16.7	0	0	16.2	7.2	0	141	4	4	20	0	0	0	2	0	0	0	0
094.014	9	85.2	131	25	0	9.1	12.2	22.7	0	10.8	5.1	4.9	121	4	5	0	20	0	0	0	0	3	0	0
094.015	3	4.8	0	0	0	0	0	0	0	0	0	0	0	4	5	0	20	0	0	0	0	1	0	0
094.016	2	2.2	0	18	0	8.2	8	0	0	10.2	6.7	0	108	2	6	0	0	1	0	2	0	0	0	0
094.017	3	3.9	0	19	0	7.2	0	0	0	10.7	0	6.7	26	4	4	5	0	0	0	3	0	0	0	0
094.018	2	1.3	0	20	0	0	0	0	0	6.7	0	5.5	76	2	9	0	0	0	0	0	3	0	0	0
094.019	3	2.1	0	0	10	0	0	0	0	0	0	3.5	0	2	6	0	0	1	0	2	0	0	0	0
094.020	3	1.6	0	19	0	7.1	0	0	0	7.1	0	4.9	82	2	6	0	0	0	1	2	0	0	0	0
094.021	2	1.1	0	10	0	0	0	0	0	6.8	0	5.4	76	4	5	0	15	0	0	0	0	0	0	0
094.022	2	2.2	0	10	0	0	0	0	0	6.7	0	4.6	76	4	5	0	15	0	0	0	0	0	0	0
094.023	3	10.1	0	21	0	9.3	11.7	0	0	17.5	9.4	7.6	119	4	5	0	15	0	0	2	0	2	0	0
094.024	2	1.3	0	10	0	0	0	0	0	6.6	0	4.9	69	4	4	10	0	0	0	0	3	0	0	0
094.025	4	8.8	0	23	0	11.4	0	0	0	11.9	0	6.7	32	4	4	10	0	0	0	0	0	0	0	0
094.026	7	31.6	0	30	0	9.2	8.5	0	0	14.4	10.4	10.7	105	4	10	0	1	0	0	7	0	0	0	30
095.001	7	21.8	0	31	0	11.1	0	0	0	12.9	0	5	98	4	2	0	0	20	0	5	0	0	0	0
095.002	6	23.2	0	21	0	17.9	0	0	0	16	0	0	77	4	5	0	15	0	0	0	0	1	0	0
095.003	4	14.8	0	22	0	14.8	0	0	0	16.1	0	5.3	49	4	5	0	20	0	0	1	0	0	0	0
095.004	4	13.6	0	19	0	14.5	0	0	0	15.6	0	4.7	64	4	4	20	0	0	0	3	0	1	0	0
095.005	4	11.2	0	25	0	11.9	0	0	0	12.6	0	6.1	130	4	5	0	20	0	0	4	0	0	0	0
095.006	4	12.4	0	24	0	0	0	0	0	14.8	0	6.1	138	4	3	0	0	0	15	3	0	0	0	0
095.007	5	27.4	155	47	0	15.6	0	0	0	14.9	0	12	110	4	10	0	0	0	0	7	0	0	0	30
095.008	5	17.4	0	31	0	16.3	0	0	0	17.8	0	0	0	4	2	0	0	20	0	1	0	2	0	0
095.009	4	11.7	0	45	0	15.3	0	0	0	13.7	0	5	122	4	3	0	0	0	20	0	0	1	0	0
095.010	5	15.5	0	24	0	12.1	0	0	0	15.2	0	6.4	124	4	3	0	0	0	20	3	0	0	0	0
095.011	4	14	0	22	0	12	0	0	0	14.7	0	6.4	112	4	4	15	0	0	0	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
095.012	3	8.5	0	21	0	7.9	0	0	0	14.5	0	5.3	109	4	3	0	0	0	15	1	0	1	0	0
095.013	3	7.7	0	21	0	7.9	0	0	0	14.5	0	5.3	109	4	3	0	0	0	15	1	0	1	0	0
095.014	4	13.5	0	24	0	12.5	0	0	0	14.7	0	6.4	130	4	4	20	0	0	0	4	0	1	0	0
095.015	4	10.4	0	18	0	15.1	0	0	0	16.3	0	0	65	4	4	20	0	0	0	2	0	2	0	0
095.016	4	7.2	0	20	0	6.6	0	0	0	9.9	0	4.5	115	4	3	0	0	0	15	5	0	0	0	0
095.017	4	6.9	0	23	0	12.7	0	0	0	13.3	0	0	120	4	2	0	0	5	0	2	0	0	0	0
095.018	3	5.5	0	22	0	7.6	0	0	0	10.1	0	3.1	102	4	5	0	20	0	0	0	0	2	0	0
095.019	4	7.2	0	23	0	12.8	0	0	0	12.6	0	0	116	4	2	0	0	20	0	0	0	1	0	0
095.020	3	5.5	0	23	0	8.8	0	0	0	13.2	0	4	124	4	4	15	0	0	0	1	0	1	0	0
095.021	3	3.4	0	13	0	6.2	0	0	0	6.5	0	4.9	50	4	10	7	0	0	0	7	0	0	0	15
095.022	5	10.5	0	19	0	6.6	0	0	0	7.3	0	4.2	116	2	6	0	0	0	2	10	0	0	0	0
095.023	5	13.1	0	19	0	606	0	0	0	7.3	0	4.2	116	2	6	0	0	0	2	10	0	0	0	0
095.024	5	10.6	0	19	0	8.5	0	0	0	7.5	0	4.8	105	2	6	0	0	0	1	15	0	0	0	0
095.025	5	6.3	0	28	0	7.5	0	0	0	8.5	0	2.8	108	2	6	0	0	0	0	15	0	0	0	0
095.026	4	9.9	0	27	0	10.4	0	0	0	10.2	0	4.9	101	2	6	0	0	1	0	5	0	0	0	0
095.027	5	10.5	0	25	0	9.6	0	0	0	6.7	0	4.9	84	2	6	0	0	0	0	15	0	0	0	0
095.028	2	2.2	0	14	0	8.8	0	0	0	6.3	0	5.2	57	2	6	0	0	0	0	5	0	0	0	0
095.029	3	2.6	0	23	0	6.3	0	0	0	6	0	4	123	2	6	0	0	0	0	10	0	0	0	0
095.030	4	4.7	0	25	0	9.2	0	0	0	8.9	0	3.7	90	2	6	0	0	0	0	7	0	0	0	0
095.031	4	9	0	25	0	14.6	0	0	0	11.2	0	5.5	107	2	6	0	0	1	0	7	0	0	0	0
095.032	3	2.9	0	16	0	8.5	0	0	0	5.4	0	5.6	59	2	6	0	0	0	0	3	0	0	0	0
095.033	3	2	0	23	0	5.2	0	0	0	7.2	0	4.7	92	2	6	0	0	0	0	10	0	0	0	0
095.034	2	1.1	0	12	0	3.5	0	0	0	6.1	0	2.2	90	2	6	0	0	0	0	7	0	0	0	0
095.035	3	1.7	0	15	0	4.1	0	0	0	5.7	0	4.1	91	2	6	0	0	0	0	2	0	0	0	0
095.036	3	1.4	0	9	0	4.5	0	0	0	6.1	0	2.8	0	2	6	0	0	0	0	15	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
095.037	7	21.7	0	17	0	10.1	0	0	0	6	0	4.8	0	4	4	20	0	0	0	0	0	0	0	0
095.038	6	21.3	0	>57	0	0	0	0	0	12.7	0	10.1	0	4	10	0	0	0	0	2	0	0	0	40
095.039	3	2.4	0	12	0	0	0	0	0	5	0	5.2	67	4	10	0	0	0	0	0	0	0	0	40
095.040	5	17.6	0	20	0	0	0	0	0	8	0	7.2	84	4	4	20	0	0	0	0	0	2	0	0
095.041	3	5.4	0	22	0	9.5	0	0	0	14.1	0	0	50	4	4	20	0	0	0	0	0	0	0	0
095.042	3	4.8	0	14	0	0	0	0	0	5.9	0	5.5	90	4	5	0	15	0	0	2	0	0	0	0
095.043	3	3.4	0	19	0	0	0	0	0	4.6	0	6.1	75	4	2	0	0	15	1	0	0	0	0	0
095.044	3	4.2	0	17	0	6.3	0	0	0	6.4	0	5.9	92	4	2	0	0	15	0	0	0	0	0	0
095.045	3	2.6	0	20	0	6.4	0	0	0	14.1	0	6.3	26	4	10	0	0	0	0	1	0	0	0	40
095.046	3	3.5	0	18	0	0	0	0	0	6.5	0	5.3	0	4	4	15	0	0	0	3	0	1	0	0
095.047	3	2.7	0	15	0	0	0	0	0	6.2	0	4.8	95	4	4	15	0	0	0	0	0	0	0	0
095.048	8	83.3	0	0	11	0	0	0	0	0	0	7.6	0	2	5	0	15	0	0	2	0	0	0	0
095.049	6	25.3	0	0	8	0	0	0	0	0	0	6	0	4	6	0	0	0	0	3	0	0	0	0
095.050	5	10.9	0	0	8	0	0	0	0	0	0	4.6	0	4	6	0	0	0	0	10	0	0	0	0
095.051	4	8.2	0	0	8	0	0	0	0	0	0	4.2	0	4	6	0	0	0	0	5	0	0	0	0
095.052	4	8.2	0	0	5	0	0	0	0	0	0	7.5	0	4	9	0	0	0	0	0	3	0	0	0
095.053	3	5.9	0	0	8	0	0	0	0	0	0	0	0	2	9	0	0	0	0	0	2	0	0	0
095.054	4	6.6	0	0	9	0	0	0	0	0	0	0	0	2	6	0	0	0	0	4	0	0	0	0
095.055	4	8.5	0	0	0	0	0	0	0	0	0	4.9	0	4	9	0	0	0	0	0	3	0	0	0
095.056	5	9.4	0	0	0	0	0	0	0	0	0	5.7	0	4	5	0	20	0	0	0	0	2	0	0
095.057	2	2.1	0	0	0	0	0	0	0	7	0	5.8	0	4	2	0	0	5	0	0	0	0	0	0
095.058	3	5.7	0	22	0	8.7	0	0	0	17.1	0	0	0	4	4	20	0	0	2	0	0	0	0	0
095.059	2	4.1	0	0	0	0	0	0	0	12.9	0	0	0	4	4	15	0	0	0	1	0	0	0	0
095.060	2	1.6	0	0	0	0	0	0	0	6.3	0	5.7	0	4	4	15	0	0	0	0	0	0	0	0
095.061	2	2.6	0	0	0	0	0	0	0	8.3	0	6.6	0	4	4	15	0	0	1	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
095.062	2	2	0	0	0	0	0	0	0	0	0	0	0	4	4	5	0	0	0	0	0	0	0	0
095.063	2	1.4	0	0	0	0	0	0	0	5.7	0	5.5	0	4	4	10	0	0	0	3	0	0	0	0
095.064	2	0.8	0	0	0	0	0	0	0	6.2	0	0	0	4	4	10	0	0	0	0	0	0	0	0
095.065	2	1	0	0	0	0	0	0	0	5.8	0	0	0	4	4	15	0	0	0	0	0	0	0	0
095.066	2	0.7	0	0	0	0	0	0	0	6.7	0	0	0	4	4	20	0	0	0	0	1	0	0	0
095.067	2	0.4	0	0	0	0	0	0	0	6.7	0	0	0	4	4	20	0	0	0	0	1	0	0	0
095.068	2	1.8	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	3	0	0	2	0	0	0
095.069	2	1.9	0	19	0	8.3	0	0	0	7.3	0	4	91	2	9	0	0	0	0	0	2	0	0	0
095.070	2	0.5	0	0	0	0	0	0	0	0	0	0	0	2	9	0	0	0	0	0	3	0	0	0
095.071	2	1.8	0	18	0	0	0	0	0	6.3	0	0	0	2	9	0	0	0	0	0	5	0	0	0
095.072	2	0.8	0	0	0	0	0	0	0	0	0	0	0	2	9	0	0	0	0	2	3	0	0	0
095.073	2	1	0	0	0	5.8	0	0	0	6	0	3	0	2	9	0	0	0	0	0	2	0	0	0
095.074	3	3.9	0	25	0	5.4	0	0	0	12.4	0	0	31	4	5	0	10	0	0	0	0	0	0	0
095.075	3	5	0	0	0	12.1	7.3	0	0	14.2	11.2	0	120	4	4	15	0	0	0	0	2	0	0	0
095.076	4	11	0	20	0	14	14	0	0	15.2	10.6	3.3	99	4	5	0	15	0	0	0	0	2	0	0
095.077	4	5.7	0	24	0	6.6	11.5	0	0	10.4	7.6	4.5	71	4	4	10	0	0	0	3	0	0	0	0
095.078	3	4.2	0	17	0	0	0	0	0	5.3	0	5.6	63	4	4	15	0	0	0	2	0	0	0	0
095.079	2	3.1	0	19	0	6	8.7	0	0	10.7	7.9	5.9	130	4	3	0	0	0	20	0	0	2	0	0
095.080	3	7	0	21	0	12.1	0	0	0	14.4	0	6.8	145	4	4	15	0	0	0	1	0	0	0	0
095.081	3	2.8	0	18	0	0	0	0	0	6.2	0	6.2	67	4	4	20	0	0	0	0	0	0	0	0
095.082	2	2.1	0	0	0	0	0	0	0	0	0	0	0	4	5	0	10	0	0	0	3	0	0	0
095.083	3	2.3	0	16	0	0	0	0	0	4.8	0	4.1	61	4	5	0	15	0	0	0	0	0	0	0
095.084	2	1.6	0	18	0	0	0	0	0	7.3	0	5.3	111	4	4	7	0	0	0	0	0	2	0	0
095.085	3	5.1	0	32	0	8	0	0	0	12.4	0	6.4	123	4	5	0	20	0	0	0	2	0	0	0
095.086	2	1.3	0	0	0	0	0	0	0	0	0	0	0	4	4	7	0	0	0	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
095.087	3	4.5	0	23	0	0	0	0	0	8.3	0	8.6	103	4	10	0	0	2	0	2	0	0	0	15
095.088	5	12.5	0	0	0	0	0	0	0	0	0	5.6	0	4	10	0	0	2	0	5	0	0	0	30
095.089	3	2.8	0	18	0	7.5	7.5	0	0	7.3	4.8	4.1	102	2	9	0	0	0	0	0	5	0	0	0
095.090	3	3	0	19	0	5.6	6.7	0	0	7.1	3.6	4.7	109	4	9	0	0	0	0	2	7	0	0	0
095.091	2	1.1	0	0	0	6.4	5.7	0	0	6.3	4.1	4.3	113	2	9	0	0	0	0	0	5	0	0	0
095.092	2	0.6	0	0	0	4.7	0	0	0	6.4	0	0	0	2	6	0	0	0	0	7	0	0	0	0
095.093	3	4.5	0	17	0	10.3	7	0	0	13.8	8.1	0	123	4	5	0	15	0	0	0	0	2	0	0
095.094	4	7.6	0	28	0	7.9	0	0	0	12	0	6.4	22	4	3	0	0	0	15	0	0	0	0	0
095.095	2	0.6	0	0	0	0	0	0	0	5.2	0	0	0	4	4	10	0	0	0	0	0	2	0	0
095.096	2	1.9	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	3	0	0	0	0
095.097	4	13.2	0	28	0	16.8	0	0	0	14.4	0	5.7	64	4	4	15	0	0	0	0	0	5	0	5
095.098	3	2.5	0	0	0	0	0	0	0	5.9	0	6	0	4	4	10	0	0	0	0	0	3	0	0
095.099	2	3.2	0	16	0	10.6	0	0	0	12.5	0	4.6	123	4	4	10	0	0	0	3	0	0	0	0
095.100	3	2.3	0	17	0	0	0	0	0	4.8	0	5.3	87	4	4	15	0	0	0	0	0	3	0	0
095.101	2	1	0	17	0	0	0	0	0	4.9	0	5.2	77	4	4	10	0	0	0	0	0	3	0	0
096.001	6	33.2	0	44	0	15.9	0	0	0	15.8	0	4.1	151	4	5	0	30	0	0	2	0	3	0	0
096.002	2	6.3	0	17	0	7.3	0	0	0	6.2	0	4.6	74	2	9	0	0	0	0	0	3	0	0	0
096.003	8	30.2	0	0	14	0	0	0	0	0	0	8.2	0	2	6	0	0	1	0	2	0	0	0	0
096.004	3	4.5	0	20	0	5.6	0	0	0	5.6	0	5.3	144	4	5	0	10	0	0	2	0	0	0	0
096.005	3	5.7	0	18	0	6.2	0	0	0	9.8	0	7.6	27	4	5	0	20	0	0	2	0	0	0	0
096.006	3	4.6	0	15	0	8.6	11.2	0	0	10.3	10.1	7.2	43	4	5	0	2	0	0	2	0	0	0	0
096.007	3	4.7	0	13	0	9.7	0	0	0	11.8	0	4.9	56	4	5	0	25	0	0	2	0	3	0	0
096.008	3	3.5	0	21	0	7.6	0	0	0	6.8	0	4.8	47	4	2	0	0	10	0	0	0	1	0	0
096.009	2	2.7	0	0	0	9.1	0	0	0	12.5	0	0	70	4	5	0	15	0	0	1	0	0	0	0
096.010	3	6.4	0	22	0	11.8	0	0	0	11.7	0	0	30	4	5	0	10	0	0	0	0	2	0	0

(continued)



Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
096.011	2	1.3	0	15	0	5.6	0	0	0	5.6	0	0	98	4	4	7	0	0	0	0	0	0	0	0
096.012	5	8	0	17	0	6.9	0	0	0	7.2	0	5.4	56	4	5	0	7	0	0	1	0	1	0	0
096.013	2	0.7	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	0	0	0	0	0
096.014	2	1.6	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	0	0	1	0	0
096.015	3	6.3	0	23	0	10.1	0	0	0	17.4	0	5.6	121	4	4	15	0	0	0	0	0	3	0	0
099.001	4	10.7	180	17	0	14	0	0	0	13.7	0	9.7	139	4	10	0	0	5	0	7	0	0	0	20
099.002	3	5.2	0	16	0	10.7	11	0	0	10.6	7.6	7.5	108	4	5	0	40	0	0	0	0	0	0	0
099.003	3	2.5	0	0	0	0	0	0	0	0	0	7.1	0	4	5	0	25	0	0	2	0	0	0	0
099.004	5	9.7	0	0	0	0	0	0	0	7.5	0	5.7	73	4	4	15	0	0	0	0	0	2	0	0
099.005	5	27	0	17	0	24.4	25.6	0	0	16.2	12	4.9	62	4	4	7	0	0	0	2	0	0	0	0
099.006	3	4.5	0	0	10	0	0	0	0	0	0	4.6	0	2	9	0	0	0	0	0	7	0	0	0
099.007	5	12.1	0	26	0	9.8	0	0	0	11.9	0	5.7	44	4	5	0	15	0	0	3	0	0	0	0
099.008	3	3.6	0	23	0	10	0	0	0	11.7	0	0	51	4	4	15	0	0	0	2	0	0	0	0
099.009	3	7.3	0	28	0	14	0	0	0	14.1	0	5.8	79	4	4	10	0	0	0	0	0	3	0	0
099.010	3	1.5	0	0	0	0	0	0	0	11	0	0	84	4	2	0	0	10	0	0	0	0	0	0
099.011	2	1.6	0	16	0	6.9	0	0	0	5.8	0	5.4	82	4	4	15	0	0	0	0	0	3	0	0
100.001	4	9.6	0	18	0	17.4	0	0	0	10.3	0	5.8	83	4	10	0	0	0	0	5	0	0	0	15
100.002	4	7	0	21	0	0	0	0	0	10.9	0	6.8	122	4	5	0	30	0	0	5	0	0	0	0
100.003	4	5	0	22	0	0	0	0	0	5.3	0	6.1	74	4	10	0	0	5	0	3	0	0	0	20
100.004	4	11.4	0	31	0	13.2	0	0	0	13.1	0	6.9	125	4	5	0	15	0	0	0	0	0	0	0
100.005	3	3.4	0	17	0	0	0	0	0	4.5	0	5.8	81	4	4	15	0	0	0	0	0	0	0	0
103.001	3	4.1	0	23	0	13.9	0	0	0	14.5	0	0	0	4	4	20	0	0	0	0	0	1	0	0
109.001	4	12.3	0	31	0	10.4	15.2	0	0	14.2	4.8	5	127	4	5	0	20	0	0	1	0	0	0	0
109.002	3	2.9	0	0	0	0	0	0	0	7	0	5.3	0	4	10	0	0	0	0	7	0	0	0	15
115.001	4	5.5	0	26	0	9.5	0	0	0	10.6	0	0	21	4	5	0	7	0	0	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
119.001	2	1.3	0	0	0	6.7	12.4	0	0	7.2	6.7	0	55	4	4	10	0	0	0	0	0	0	0	0
119.002	2	0.8	0	24	0	0	0	0	0	6.7	0	0	81	4	4	5	0	0	0	0	0	0	0	0
119.003	3	3.2	0	23	0	9.9	0	0	0	12.6	0	0	43	4	4	15	0	0	0	0	0	0	0	0
119.004	3	3.5	0	26	0	0	0	0	0	5.6	0	6	80	4	4	5	0	0	0	0	0	0	0	0
120.001	4	5.7	0	0	7	0	0	0	0	0	0	4.8	0	4	4	15	0	0	0	0	0	2	0	0
120.002	6	16.4	0	0	7	0	0	0	0	0	0	4.8	0	4	4	15	0	0	0	0	0	2	0	0
120.003	5	12.2	0	0	7	0	0	0	0	0	0	4.8	0	4	4	15	0	0	0	0	0	2	0	0
120.004	6	14.9	0	0	7	0	0	0	0	0	0	4.8	0	4	4	15	0	0	0	0	0	2	0	0
121.001	3	3	0	12	0	7.1	9.4	0	0	11.5	7.3	3.8	66	4	5	0	15	0	0	1	0	1	0	0
121.002	3	4.5	0	19	0	12.2	0	0	0	15.2	0	0	23	4	10	0	0	0	1	5	0	0	0	15
121.003	2	2.2	0	15	0	0	0	0	0	5.6	0	5.8	82	4	4	5	0	0	0	0	0	2	0	0
121.004	2	0.8	0	0	0	0	0	0	0	6.5	0	0	87	4	4	10	0	0	0	0	0	1	0	0
121.005	2	1.7	0	17	0	0	0	0	0	6	0	5.6	79	4	4	7	0	0	0	2	0	0	0	0
121.006	3	2.9	0	25	0	8.4	12.8	0	0	16.7	3.9	0	51	4	4	10	0	0	0	2	0	2	0	0
121.007	4	15.3	0	26	0	11.4	15.3	0	0	15.5	6.3	6.9	129	4	5	0	15	0	0	0	0	3	0	0
121.008	3	3.9	0	19	0	0	0	0	0	6.4	0	5.4	90	4	4	15	0	0	0	0	0	2	0	0
121.009	3	4.2	0	27	0	8.2	0	0	0	8.9	0	4.7	100	4	4	10	0	0	0	3	0	3	0	0
121.010	2	1.3	0	8	0	0	0	0	0	4.6	0	4.2	83	4	4	10	0	0	0	2	0	25	0	0
123.001	4	8.1	0	25	0	7.1	0	0	0	11.3	0	4.4	55	4	4	10	0	0	0	0	0	0	0	0
123.002	4	10.9	0	32	0	13.3	0	0	0	14.8	0	5.8	138	4	3	0	0	0	15	0	0	0	0	0
123.003	3	4.4	0	19	0	9.1	0	0	0	16.2	0	0	104	4	2	0	0	20	0	0	0	0	0	0
123.004	2	4.1	0	16	0	9	0	0	0	16.3	0	0	118	4	2	0	0	15	0	0	0	0	0	0
123.005	2	4.1	0	25	0	0	0	0	0	11.2	0	7.1	90	4	2	0	0	15	0	0	0	0	0	0
123.006	4	10.5	0	21	0	0	0	0	0	9.9	0	6.2	110	4	2	0	0	10	0	0	0	0	0	0
123.007	3	4.6	0	23	0	0	0	0	0	10.4	0	6.6	113	4	2	0	0	10	0	2	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
123.008	2	2.6	0	26	0	0	0	0	0	8.2	0	0	87	4	2	0	0	10	0	0	0	0	0	0
123.009	4	7.7	0	24	0	0	0	10.5	10.5	7.1	0	7.4	17	4	10	0	0	0	0	2	0	0	0	15
123.010	4	8.4	0	22	0	0	0	0	0	7.2	0	8.4	76	4	10	0	0	0	0	5	0	0	0	10
123.011	3	2.7	0	22	0	8.1	0	0	0	7.6	0	2.4	111	4	4	15	0	0	0	0	0	0	0	0
123.012	3	4.1	0	12	0	0	0	0	0	5.9	0	5.3	67	4	2	0	0	5	0	0	0	0	0	0
123.013	3	3.9	0	13	0	0	0	0	0	5.9	0	4.8	68	4	2	0	0	5	0	2	0	0	0	0
123.014	4	6.3	0	26	0	0	0	0	0	7.2	0	6.4	95	4	3	0	0	0	15	0	0	0	0	0
123.015	3	4	0	21	0	0	0	0	0	6.8	0	7.7	72	4	3	0	0	0	10	0	0	0	0	0
123.016	3	2.5	0	21	0	0	0	0	0	6.8	0	7.7	72	4	3	0	0	0	10	0	0	0	0	0
123.017	2	1.7	0	16	0	0	0	0	0	5.8	0	5.2	83	4	2	0	0	10	0	0	0	0	0	0
123.018	2	1.7	0	11	0	0	0	0	0	0	0	5.4	78	4	2	0	0	1	0	0	0	0	0	0
123.019	4	16.1	0	0	9	0	0	0	0	0	0	6.6	0	4	6	0	0	0	7	0	0	0	0	0
123.020	3	1.7	0	0	0	0	0	0	0	0	0	0	0	4	6				5	0	0	0	2	
123.021	2	1.4	0	0	0	0	0	0	0	5.6	0	0	0	4	2			7		0	0	0	0	0
123.022	2	1.3	0	0	0	0	0	0	0	0	0	0	0	4	2			7		2	0	0	0	0
123.023	2	1.4	0	0	0	0	0	0	0	8.7	0	0	0	4	2			3		0	0	0	0	0
123.024	2	0.7	0	0	0	0	0	0	0	3.6	0	0	0	4	2			5		0	0	0	0	0
123.025	2	1.3	0	0	0	0	0	0	0	5.4	0	0	0	4	2			10		0	0	0	0	0
123.026	2	0.8	0	0	0	0	0	0	0	6.5	0	0	0	4	2			10		0	0	0	0	0
123.027	2	0.6	0	0	0	0	0	0	0	4.4	0	0	0	4	2			7		0	0	0	0	0
125.001	7	21	0	20	0	8.6	9.3	0	0	13.7	8.7	4.4	118	4	4	20	0	0	3	0	1	0	0	0
125.002	5	17.3	0	20	0	8.6	9.3	0	0	13.7	8.7	4.4	118	4	4	20	0	0	3	0	1	0	0	0
125.003	6	16.6	0	20	0	8.6	9.3	0	0	13.7	8.7	4.4	118	4	4	20	0	0	3	0	1	0	0	0
125.004	3	4.4	0	0	0	0	0	0	0	0	0	6.4	0	4	4	10	0	0	2	0	0	0	0	0
125.005	5	18.9	0	0	0	0	0	0	0	0	0	7.3	0	4	5	0	15	0	3	0	2	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
125.006	5	12.9	0	27	0	9.2	0	0	0	10.2	0	6.9	24	4	4	15	0	0	0	0	0	2	0	0
125.007	5	19.9	0	29	0	12.3	11.7	0	0	15.4	11	7	132	4	3	0	0	0	10	2	0	0	0	0
125.008	5	13.5	0	37	0	7.8	0	0	0	13.2	0	3.6	105	4	4	15	0	0	0	2	0	2	0	0
125.009	3	3.5	0	23	0	0	0	0	0	6.4	0	7.3	55	4	2	0	0	5	0	0	1	0	0	0
125.010	3	5	0	12	0	0	0	0	0	5.4	0	4.9	69	4	5	0	15	0	0	2	0	2	0	0
125.011	4	10.4	0	18	0	11.8	13.5	0	0	14.9	9.1	5.4	122	4	4	10	0	0	0	3	0	2	0	0
125.012	4	12.1	0	23	0	11.5	10.9	0	0	12.8	9.7	5.8	140	4	5	0	20	0	0	0	0	0	0	0
125.013	3	7	0	20	0	8.4	13.6	0	0	9.9	8.7	6.8	116	4	4	15	0	0	0	0	0	0	0	0
125.014	5	20.2	0	33	0	6.8	9.9	0	0	8.6	9.6	11.2	114	4	10	2	0	0	0	2	0	0	0	20
125.015	6	21.3	0	36	0	9.7	13.8	0	0	15.3	8.7	7.9	135	4	4	15	0	0	0	2	0	3	0	0
125.016	5	21.4	0	32	0	9.4	0	0	0	13.2	0	8.2	104	4	4	10	0	0	0	2	0	0	0	0
125.017	4	10.7	0	26	0	8.6	0	0	0	10.4	0	5.7	30	4	4	10	0	0	0	1	0	3	0	0
125.018	4	11.8	0	27	0	8.4	0	0	0	9.7	0	6	38	4	4	15	0	0	0	1	0	0	0	0
125.019	6	35.9	0	44	0	7.2	0	0	0	13.5	0	6.4	110	4	4	10	0	0	0	0	0	3	0	0
125.020	4	7.4	0	18	0	0	0	0	0	5.5	0	5.2	82	4	2	0	0	10	0	0	0	1	0	0
125.021	4	11	0	22	0	9.6	0	0	0	16.6	0	5.9	114	4	5	0	15	0	0	0	0	5	0	0
125.022	3	5.9	0	27	0	11	0	0	0	15.8	0	4.8	37	4	2	0	0	7	0	0	0	2	0	0
125.023	4	5.1	0	16	0	0	0	0	0	6.3	0	6.1	69	4	4	15	0	0	0	0	0	0	0	0
125.024	7	33.2	0	0	22	0	0	0	0	0	0	8.2	0	4	5	0	10	0	0	0	0	3	0	0
125.025	4	18.8	0	24	0	9.8	14.4	0	0	13.5	6.7	8.3	129	4	3	0	0	0	20	0	0	0	0	0
125.026	6	44.4	0	0	24	0	0	0	0	0	0	6.7	0	4	5	0	10	0	0	0	0	3	0	0
125.027	6	15.5	0	20	0	0	17.6	0	0	8.1	5.5	0	33	4	10	1	0	0	0	0	0	0	0	20
125.028	5	13	0	19	0	0	17.7	0	0	8.9	9.4	0	30	4	10	0	0	0	0	2	0	0	0	20
126.001	4	10.9	0	28	0	6.9	0	0	0	10.3	0	6.6	93	4	4	15	0	0	0	0	0	2	0	0
126.002	4	11.9	0	28	0	5	0	0	0	10.2	0	6.7	93	4	4	15	0	0	0	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
126.003	8	49.6	0	27	0	5.5	0	0	0	9.7	0	5.1	84	4	2	0	0	10	0	1	0	0	0	0
126.004	10	131.4	129	47	0	13.5	16.5	25.8	0	13.3	7.9	6.6	130	4	4	15	0	0	0	0	0	3	0	0
126.005	7	53.3	129	0	0	0	0	0	0	0	0	8.3	0	4	4	15	0	0	0	0	0	3	0	0
126.006	5	11.1	0	19	0	0	0	0	0	6	0	5.7	87	4	4	10	0	0	0	0	0	2	0	0
126.007	3	4.5	0	20	0	6.6	0	0	0	6.1	0	4.8	107	4	4	10	0	0	0	0	0	2	0	0
126.008	3	2.7	0	20	0	6.1	0	0	0	6	0	4.4	105	4	2	0	0	15	0	0	0	0	0	0
126.009	4	5.9	0	20	0	5.9	0	0	0	5.9	0	4.5	105	4	2	0	0	15	0	0	0	0	0	0
126.010	5	13	0	26	0	6.8	0	0	0	9.2	0	5.8	35	4	4	15	0	0	0	0	0	2	0	0
126.011	5	22	0	0	0	0	0	0	0	0	0	7.3	0	4	10	1	0	0	0	0	0	0	0	10
126.012	3	6.4	0	18	0	10.3	14.4	0	0	13.9	7.7	0	115	4	3	0	0	0	15	0	0	0	0	0
126.013	4	10.5	0	24	0	6.9	0	0	0	10	0	6.8	23	4	4	15	0	0	0	0	0	2	0	0
126.014	7	37.5	0	21	0	14.1	15.9	0	0	16.9	9.6	0	116	4	4	15	0	0	0	0	0	2	0	0
126.015	6	22.1	0	22	0	11.8	0	0	0	17.7	0	10.4	37	4	4	15	0	0	0	1	0	2	0	0
126.016	2	2.1	0	18	0	0	0	0	0	7.2	0	5.2	56	4	4	15	0	0	0	0	0	1	0	0
126.017	2	1.7	0	23	0	0	0	0	0	7	0	5.5	70	4	4	10	0	0	0	0	0	1	0	0
127.001	4	8.2	0	20	0	4.7	0	0	0	10.9	0	7	19	4	4	15	0	0	0	1	0	1	0	0
127.002	3	5.1	0	23	0	7.3	0	0	0	8.5	0	3.9	70	4	4	10	0	0	0	2	0	2	0	0
127.003	2	2.4	0	15	0	5.3	0	0	0	9.1	0	7.2	30	4	4	15	0	0	0	0	0	1	0	0
127.004	3	4.6	0	25	0	7.1	0	0	0	10.2	0	4.8	48	4	4	15	0	0	0	0	0	1	0	0
127.005	2	1.6	0	21	0	6.7	0	0	0	9.7	0	7.1	35	4	4	15	0	0	0	0	0	0	0	0
127.006	2	1	0	12	0	0	0	0	0	5.4	0	5.2	77	4	4	10	0	0	0	0	0	0	0	0
127.007	2	2.4	0	21	0	0	0	0	0	5.5	0	5.1	80	4	4	15	0	0	0	0	0	0	0	0
127.008	2	1.7	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	0	0	0	0	0
127.009	3	8.6	0	22	0	11.6	13.4	0	0	15.8	9.6	7.4	119	4	5	0	20	0	0	1	0	0	0	0
127.010	3	5.3	0	28	0	11.6	9.2	0	0	12	9.6	6.8	124	4	4	20	0	0	0	1	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
127.011	5	14.2	0	21	0	0	0	0	0	5	0	5.7	77	4	4	10	0	0	0	2	0	2	0	0
127.012	6	20.9	0	21	0	0	0	0	0	7.2	0	5.9	30	4	4	15	0	0	0	2	0	5	0	0
128.001	2	0.9	0	0	0	0	0	0	0	5.5	0	5	75	4	4	15	0	0	0	0	0	2	0	0
129.001	8	30.7	0	24	0	9	0	0	0	11.3	0	6.2	70	4	4	20	0	0	0	2	0	0	0	0
129.002	8	73.6	141	27	0	11.3	16.3	52.9	0	13.9	8.1	10	110	4	5	0	20	0	0	0	0	0	0	0
129.003	4	13.6	180	22	0	7.5	9.8	0	0	12.3	7.3	6.2	111	4	4	20	0	0	0	0	0	1	0	0
129.004	4	10.8	0	25	0	6.8	0	0	0	10.9	0	6.2	94	4	5	0	15	0	0	0	0	3	3	0
129.005	4	10.3	0	18	0	10.3	0	0	0	16	0	7.4	120	4	3	0	0	0	15	2	0	0	0	0
129.006	4	6.5	0	25	0	7.8	0	0	0	10.7	0	6.4	101	4	2	0	0	7	1	0	0	0	0	0
129.007	3	7.7	0	17	0	10	16.5	0	0	14.1	4.3	0	110	4	5	0	15	0	0	0	1	0	0	0
129.008	3	6.9	0	22	0	5.1	0	0	0	11.8	0	6.4	90	4	4	15	0	0	0	0	0	0	0	0
129.009	3	5.9	0	26	0	12.5	0	0	0	13.8	0	4.5	130	4	3	0	0	0	20	0	0	0	0	0
129.010	3	3.6	0	16	0	5.9	0	0	0	12.8	0	4.2	97	4	2	0	0	20	0	0	0	0	0	0
129.011	3	7.2	0	25	0	4.7	0	0	0	11.3	0	7	91	4	4	20	0	0	0	0	0	0	0	0
129.012	3	4.7	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	2	0	2	0	0
129.013	3	5.5	0	13	0	8.5	12.8	0	0	10.1	5.6	7.4	104	4	4	10	0	0	0	0	0	0	0	0
129.014	3	5.5	0	37	0	13.1	0	0	0	12.5	0	0	117	4	3	0	0	0	15	1	0	2	0	0
129.015	3	6.8	0	16	0	11.1	0	0	0	12.2	0	5.6	122	4	5	0	25	0	0	0	0	2	0	0
129.016	2	4.6	0	37	0	13.6	0	0	0	13.8	0	0	76	4	4	15	0	0	0	1	0	0	0	0
129.017	2	3.9	0	0	0	11.3	0	0	0	13.8	0	6.2	81	4	5	0	10	0	0	0	0	0	0	0
129.018	4	7.4	0	13	0	0	0	0	0	5.2	0	4.3	69	4	4	7	0	0	0	0	0	0	0	0
129.019	5	11.1	0	15	0	0	0	0	0	5.5	0	4.2	80	4	4	10	0	0	0	0	0	0	0	0
129.020	3	4.4	0	16	0	0	0	0	0	5.4	0	6.1	73	4	4	7	0	0	0	0	0	0	0	0
129.021	4	13.6	0	24	0	0	0	0	0	9.6	0	3.2	120	4	4	20	0	0	0	0	0	0	0	0
129.022	3	3.7	0	15	0	0	0	0	0	5.6	0	4.5	0	4	4	20	0	0	0	0	0	0	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
129.023	3	3.2	0	22	0	0	0	0	0	8.3	0	0	72	4	4	15	0	0	0	0	0	0	0	0
129.024	3	3	0	12	0	0	0	0	0	4.9	0	4.9	86	4	2	0	0	15	0	0	0	0	0	0
129.025	2	2.7	0	21	0	8.8	0	0	0	8.8	0	4	47	4	2	0	0	15	0	0	0	0	0	0
129.026	3	2.4	0	21	0	8.5	0	0	0	8.5	0	4.2	50	4	2	0	0	15	0	0	0	0	0	0
129.027	2	2.9	0	0	0	0	0	0	0	5.5	0	6.3	85	4	4	10	0	0	0	0	0	0	0	0
129.028	3	3.9	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	10	0	0	0	0	0	0
129.029	2	1.5	0	0	0	0	0	0	0	5.3	0	0	0	4	4	10	0	0	0	0	0	0	0	0
129.030	2	2.6	0	0	0	0	0	0	0	5.4	0	5.9	0	4	4	10	1	0	0	0	0	0	0	0
129.031	2	1.8	0	0	0	0	0	0	0	5.2	0	5.5	0	4	2	0	0	5	0	0	0	0	0	0
129.032	2	1.5	0	19	0	0	0	0	0	5.5	0	0	81	4	4	15	0	0	0	0	0	0	0	0
129.033	2	1.6	0	18	0	0	0	0	0	8	0	0	71	4	4	5	0	0	0	2	0	0	0	0
129.034	2	1.1	0	16	0	0	0	0	0	5	0	0	85	4	3	0	0	0	10	3	0	0	0	0
129.035	2	1.4	0	0	0	0	0	0	0	5	0	5.6	0	4	4	15	0	0	0	1	0	0	0	0
129.036	2	1.1	0	14	0	0	0	0	0	5.2	0	0	69	4	4	15	0	0	0	3	0	0	0	0
129.037	2	1.3	0	0	0	0	0	0	0	5.8	0	5.5	0	4	5	0	20	0	0	1	0	1	0	0
129.038	2	0.7	0	0	0	0	0	0	0	5.8	0	5.1	96	4	2	0	0	20	0	0	0	0	0	0
129.039	2	0.7	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	5	0	0	0	0	0	0
129.040	7	32.7	0	27	0	10.6	13.1	0	0	13.9	5.6	0	140	4	3	0	0	0	15	0	0	3	0	0
129.041	10	76.9	0	30	0	8.6	0	0	0	12	0	4.1	24	4	4	20	0	0	0	1	0	2	0	0
129.042	7	29.5	0	30	0	8.6	0	0	0	11.8	0	4.1	24	4	4	20	0	0	0	1	0	2	0	0
129.043	5	20.8	0	37	0	12.3	12	0	0	15	7.7	6.2	137	4	5	0	15	0	0	3	0	2	0	0
129.044	9	40.8	0	18	0	0	0	0	0	6.6	0	4.9	80	4	4	15	0	0	0	0	0	3	0	0
129.045	2	2.3	0	13	0	0	0	0	0	6.2	0	6.1	65	4	4	15	0	0	0	1	0	0	0	0
129.046	7	29.5	0	30	0	10.4	10.7	0	0	14.3	8.7	6.1	139	4	5	0	25	0	0	2	0	2	0	0
129.047	10	102.1	0	0	0	0	0	0	0	0	0	7.4	0	4	4	15	0	0	0	3	0	2	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
129.048	3	7.6	0	30	0	3.8	0	0	0	11.2	0	7.1	60	4	4	15	0	0	0	1	0	2	2	0
129.049	4	10	0	34	0	8.8	11.8	0	0	14	7.1	4.5	124	4	3	0	0	0	15	0	0	0	0	0
129.050	6	20.1	0	22	0	11.9	0	0	0	11	0	6.3	81	4	3	0	0	0	10	0	0	0	0	0
129.051	6	25.3	0	16	0	6.6	17.9	0	0	10.5	5.8	6.5	63	4	5	0	15	0	0	3	0	0	0	0
129.052	4	7.2	0	28	0	5.9	0	0	0	9.4	0	7.2	83	4	4	15	0	0	0	0	0	0	0	0
129.053	5	23.4	0	41	0	18.7	0	0	0	18.2	0	7.9	117	4	10	0	0	7	0	0	0	0	0	10
129.054	5	16.1	0	19	0	0	0	0	0	6.4	0	5.1	74	4	4	10	0	0	0	0	0	3	0	0
129.055	8	33.8	0	26	0	11.3	11.1	0	0	16.6	9	6	58	4	2	0	0	7	0	0	0	0	0	0
129.056	4	10.7	0	27	0	11.1	13.3	0	0	14.4	6.7	5.2	133	4	5	0	15	0	0	0	0	0	0	0
129.057	4	11.8	0	19	0	15.5	17.6	0	0	21.3	13.5	0	40	2	6	0	0	0	0	5	0	0	0	0
129.058	9	63.6	0	24	0	10.1	13.1	0	0	17.2	9.1	7.9	129	4	4	15	0	0	0	2	0	3	0	0
129.059	2	2	0	15	0	0	0	0	0	5.4	0	4.7	75	4	5	0	15	0	0	0	0	2	0	0
129.060	2	1.1	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	1	0	0	0	0
129.061	3	3.2	0	21	0	0	0	0	0	5.1	0	4.7	90	4	4	15	0	0	0	0	0	2	0	0
129.062	4	8.4	0	21	0	6.2	0	0	0	8.6	0	6	24	4	4	20	0	0	0	1	0	1	0	0
129.063	7	35.2	0	32	0	8.8	0	0	0	13.6	0	5.9	117	4	4	10	0	0	0	1	0	2	0	0
129.064	5	12.4	0	18	0	0	0	0	0	6.2	0	5.1	77	4	4	15	0	0	0	0	0	3	0	0
129.065	5	16.2	0	21	0	8.1	0	0	0	10.4	0	5.6	26	4	4	20	0	0	0	1	0	1	0	0
129.066	4	6.9	0	16	0	0	0	0	0	5.7	0	4.8	85	4	4	15	0	0	0	2	0	2	0	0
129.067	2	1.3	0	0	0	0	0	0	0	0	0	0	0	4	4	15	0	0	0	2	0	0	0	0
129.068	4	6.1	0	18	0	0	0	0	0	5.5	0	4.9	80	4	4	15	0	0	0	2	0	1	0	0
129.069	4	9.1	0	20	0	8.7	0	0	0	11.8	0	6.7	26	4	4	15	0	0	0	0	0	2	0	0
129.070	5	11.9	0	26	0	0	0	0	0	8.5	0	6.7	22	4	4	10	0	0	0	0	0	1	0	0
129.071	5	14.2	0	22	0	0	0	0	0	5.4	0	5.7	82	4	4	7	0	0	0	0	0	3	0	3
129.072	4	6.8	0	18	0	0	0	0	0	5.1	0	4.5	81	4	4	15	0	0	0	2	0	1	0	0

(continued)



Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
129.073	4	10.1	0	24	0	0	0	0	0	9.7	0	5.8	24	4	4	15	0	0	0	0	0	2	0	0
129.074	4	6.6	0	26	0	6.2	8.1	0	0	10.2	6.8	3.7	52	4	4	5	0	0	0	2	0	0	0	0
129.075	5	14	0	24	0	7.7	10.3	0	0	11.6	8.3	4.2	75	4	4	15	0	0	0	2	0	1	0	0
129.076	2	3.5	0	22	0	9.4	0	0	0	10.5	0	6.6	37	4	4	10	0	0	0	1	0	0	0	0
129.077	4	9.9	0	18	0	9.2	10.4	0	0	14.4	7.6	5.2	36	4	4	7	0	0	0	1	0	1	0	0
129.078	3	3.5	0	19	0	0	0	0	0	5.9	0	4.4	77	4	4	10	0	0	0	0	0	1	0	0
129.079	4	6.3	0	19	0	0	0	0	0	6.9	0	6.2	141	4	2	0	0	7	0	0	0	2	0	0
129.080	2	3.6	0	0	0	10.2	12.5	0	0	11.9	6.5	4.9	40	4	4	15	0	0	0	0	0	1	0	0
129.081	3	5	0	20	0	0	0	0	0	6.4	0	5.5	64	4	4	20	0	0	0	0	0	2	0	0
129.082	3	3.2	0	0	0	0	0	0	0	0	0	6	0	4	4	15	0	0	0	0	0	3	0	0
129.083	4	7.9	0	21	0	8.2	9.9	0	0	11.8	7	3.9	120	4	4	15	0	0	0	2	0	1	0	0
129.084	3	2.6	0	22	0	6.1	7.1	0	0	7.7	4.5	3.6	115	4	4	15	0	0	0	0	0	2	0	0
129.085	3	2.7	0	0	0	0	0	0	0	5.9	0	4.4	74	4	4	7	0	0	0	0	0	0	0	0
129.086	3	4.5	0	25	0	0	0	0	0	8.4	0	7.6	114	4	4	20	0	0	0	0	0	1	0	0
129.087	2	1.1	0	11	0	0	0	0	0	5.3	0	5.9	74	4	2	0	0	10	0	0	0	1	0	0
129.088	2	2.4	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	0	0	1	1	0
129.089	3	4.5	0	20	0	7.5	8.8	0	0	10.9	5.9	3.8	41	4	4	15	0	0	0	1	2	0	0	0
129.090	3	3.1	0	23	0	5.3	0	0	0	8.5	0	6	73	4	4	10	0	0	0	0	0	1	0	0
129.091	2	1	0	18	0	0	0	0	0	5.1	0	4.7	58	4	4	5	0	0	0	3	0	0	0	0
129.092	6	18.4	0	29	0	9.9	12.6	0	0	14	6.4	4.8	115	4	4	15	0	0	0	0	0	0	0	0
129.093	4	8	0	24	0	10.2	0	0	0	13.6	0	6.4	114	4	5	0	10	0	0	0	0	0	0	0
129.094	7	43.4	0	0	0	0	0	0	0	0	0	7.4	0	4	5	0	15	0	0	1	0	1	0	0
129.095	5	15.8	0	16	0	6.5	16.8	0	0	10.6	5.9	7.5	80	4	4	15	0	0	0	3	0	0	0	0
129.096	4	9.3	0	17	0	12.1	0	0	0	16.6	0	0	60	4	4	10	0	0	0	0	0	0	0	3
129.097	2	4.7	0	16	0	7.7	11.4	0	0	12.7	6.8	5.7	116	4	4	15	0	0	0	1	0	2	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
129.098	4	9.4	0	27	0	8.4	13	0	0	13.2	7.1	6.7	82	4	4	15	0	0	0	0	0	2	0	0
129.099	10	166	0	0	19	0	0	0	0	0	0	10.3	0	4	10	0	0	5	0	2	0	0	2	10
129.100	6	39.7	0	0	19	0	0	0	0	0	0	10.3	0	4	10	0	0	5	0	2	0	0	2	10
129.101	6	39.7	0	0	0	0	0	0	0	0	0	11.2	0	4	10	0	0	5	0	2	0	0	2	10
129.102	4	7.7	0	0	0	0	0	0	0	0	0	10.3	0	4	10	0	0	5	0	2	0	0	2	10
129.103	4	15	0	0	0	0	0	0	0	0	0	10.3	0	4	10	0	0	5	0	2	0	0	2	10
129.104	2	2	0	0	0	0	0	0	0	0	0	10.4	0	4	10	0	0	5	0	2	0	0	2	10
129.105	2	0.9	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0	5	0	2	0	0	2	10
131.001	6	35.4	0	0	9	0	0	0	0	0	0	12.2	0	2	2	0	0	5	0	1	0	2	0	0
131.002	8	49.5	0	21	0	8.9	14.1	0	0	14.6	7.1	9.4	129	4	4	20	0	5	0	3	0	5	0	0
131.003	8	25.9	0	30	0	8	10.5	0	0	14.2	7.9	5.4	133	4	4	15	0	0	0	0	0	3	0	0
131.004	5	14.3	0	41	0	8.1	0	0	0	12.3	0	4.9	106	4	4	20	0	0	0	5	0	0	0	0
131.005	2	1.3	0	0	0	0	0	0	0	5.5	0	5.2	0	4	4	15	0	0	0	0	0	0	0	0
131.006	2	2.7	0	33	0	10.4	0	0	0	12.3	0	7.3	47	4	5	0	20	0	0	2	0	0	0	0
131.007	4	8.5	0	21	0	4.5	0	0	0	6.9	0	5.6	82	4	4	15	0	0	0	0	0	2	0	0
131.008	4	4.6	0	16	0	0	0	0	0	5.7	0	5.3	84	4	4	10	0	0	0	2	0	2	0	0
131.009	3	6.1	0	33	0	10.4	0	0	0	12.3	0	7.3	47	4	5	0	20	0	0	2	0	0	0	0
131.010	3	6.1	0	24	0	6.2	0	0	0	9.4	0	6.2	26	4	4	15	0	0	0	0	0	0	0	0
131.011	6	12.4	0	19	0	0	0	0	0	5.4	0	5	84	4	4	10	0	0	0	0	0	0	0	0
131.012	2	1.8	0	20	0	6	0	0	0	10.6	0	0	12	4	4	15	0	0	0	0	0	0	0	0
131.013	2	1.8	0	19	0	0	0	0	0	5.8	0	5.5	80	4	4	5	0	0	0	1	0	0	0	0
131.014	4	5.3	0	15	0	0	0	0	0	5.5	0	5.4	71	4	5	0	15	0	0	1	0	2	0	0
131.015	3	2.6	0	22	0	0	0	0	0	4.2	0	5.5	77	4	4	10	0	0	0	0	0	1	0	0
131.016	5	13.2	0	26	0	6.3	0	0	0	8.5	0	6	39	4	4	15	0	0	0	1	0	3	0	0
131.017	5	10.9	0	0	0	0	0	0	0	5.9	0	5.6	86	4	4	15	0	0	0	0	0	1	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
131.018	5	10.9	0	19	0	0	0	0	0	5.7	0	5	86	4	4	15	0	0	0	1	0	1	0	0
133.001	8	55.4	0	15	0	11.5	17.4	0	0	14.3	5.4	6.3	46	4	5	0	25	0	0	0	0	3	0	0
133.002	10	63.3	125	22	0	8	0	23.6	0	11.8	0	3.3	39	4	4	15	0	0	0	0	0	2	0	0
133.003	5	11.5	0	22	0	7.3	0	0	0	11.9	0	3	39	4	4	15	0	0	0	0	0	2	0	0
133.004	4	5.3	0	15	0	0	0	0	0	4.8	0	5.5	79	4	4	25	0	0	0	2	0	0	0	0
133.005	3	4.7	0	15	0	0	0	0	0	4.8	0	5.6	79	4	4	25	0	0	0	2	0	0	0	0
133.006	8	62.7	0	0	9	0	0	0	0	0	0	4.4	0	4	2	0	0	5	0	2	0	0	0	0
133.007	5	24.4	0	0	0	0	0	0	0	0	0	8.7	0	4	4	7	0	0	0	3	0	2	0	0
135.001	3	1.3	0	16	0	0	0	0	0	5.9	0	0	82	4	4	7	0	0	0	2	0	0	0	0
135.002	3	3.5	0	0	0	0	0	0	0	6.4	0	5.5	0	4	4	15	0	0	0	0	0	0	0	0
135.003	5	17.9	0	25	0	14.6	0	0	0	15	0	6.4	70	4	4	10	0	0	0	0	0	1	0	0
135.004	5	19.6	0	35	0	7.3	0	0	0	10.9	0	6.3	26	4	4	15	0	0	0	0	0	0	0	0
135.005	7	23.6	0	21	0	15.6	0	0	0	15.4	0	5.7	75	4	4	10	0	0	0	0	0	1	1	0
135.006	4	6.7	0	0	0	0	0	0	0	0	0	6.1	0	4	10	0	0	0	0	5	0	0	1	15
135.007	4	3.8	0	16	0	75	0	0	0	5.1	0	4.8	0	4	4	10	0	0	0	2	0	0	0	0
135.008	3	2.8	0	19	0	0	0	0	0	5.2	0	5.1	75	4	5	0	15	0	0	0	0	0	0	3
136.001	6	19.8	0	17	0	7	6.6	0	0	5	4.6	5.9	83	4	4	10	0	0	0	0	0	0	0	0
136.002	4	6.6	0	15	0	0	0	0	0	6.2	0	5.2	68	4	4	20	0	0	0	0	0	0	0	0
136.003	3	5.4	0	2.5	0	0	0	0	0	3.5	0	8.8	0	4	6	0	0	2	0	3	0	0	0	0
137.001	7	24.4	0	27	0	8.4	0	0	0	10.1	0	5	36	4	4	15	0	0	0	1	0	1	0	0
137.002	7	19.1	0	27	0	8.4	0	0	0	10.3	0	7.2	36	4	4	15	0	0	0	1	0	1	0	0
137.003	5	19.9	0	42	0	10.4	15.9	0	0	12.9	6.5	8.7	116	4	3	0	0	0	10	2	0	0	0	0
137.004	3	4	0	15	0	7.2	0	0	0	11.1	0	4.9	129	4	4	7	0	0	0	0	0	0	0	0
139.001	12	116.5	131	27	0	9	13.5	21.2	0	12.5	5.3	4.8	67	4	4	15	0	0	0	3	0	5	0	0
139.002	13	106	126	22	0	8.9	12.3	20	0	8.4	4.3	3.6	41	4	4	15	0	0	0	3	0	2	0	0

(continued)

Table K.2. continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
139.003	8	41.4	0	23	0	14.6	16	0	0	14.7	9.9	6	116	4	2	0	0	20	0	3	0	0	0	0
139.004	4	6.3	0	21	0	8.2	9.7	0	0	12.1	5.9	4.2	48	4	4	7	0	0	0	3	0	2	0	0
139.005	9	40.2	0	18	0	0	0	0	0	5.9	0	5	66	4	4	15	0	0	0	1	0	2	0	0
139.006	7	31.6	0	18	0	0	0	0	0	5.9	0	5	66	4	4	15	0	0	0	1	0	2	0	0
139.007	6	13.3	0	18	0	0	0	0	0	5.9	0	5	66	4	4	15	0	0	0	1	0	2	0	0
139.008	9	41.4	0	0	6	0	0	0	0	0	0	4.4	0	4	4	15	0	0	0	1	0	2	0	0
139.009	7	19.2	0	0	0	0	0	0	0	0	0	4.8	0	4	4	15	0	0	0	1	0	2	0	0
139.010	4	4.2	0	0	0	0	0	0	0	0	0	4.5	0	4	4	15	0	0	0	1	0	2	0	0
139.011	4	6.4	0	0	0	0	0	0	0	0	0	4.5	0	4	4	15	0	0	0	1	0	2	0	0
140.001	7	62.9	126	22	0	8.9	12.3	20	0	8.4	4.3	3.6	41	4	4	15	0	0	0	3	0	2	0	0
140.002	9	33.1	0	43	0	7.1	0	0	0	19.1	0	0	72	4	3	0	0	0	2	1	0	0	0	0
140.003	5	8.8	0	22	0	8.9	12.3	0	0	8.4	4.3	0	41	4	4	15	0	0	0	3	0	2	0	0
140.004	6	13.1	0	0	0	0	0	0	12.5	3.9	0	4.2	40	4	4	15	0	0	0	2	0	0	0	0
140.005	5	15.2	0	17	0	0	0	0	0	6.2	0	5.4	80	4	4	15	0	0	0	0	0	2	0	0
140.006	6	16.3	0	21	0	10.9	9.6	0	0	11.5	7.2	4.9	47	4	4	15	0	0	0	3	0	2	0	0
140.007	4	11.4	0	17	0	0	0	0	0	6.9	0	5.7	76	4	4	10	0	0	0	0	0	1	0	0
141.001	4	8.8	0	25	0	7.8	0	0	0	14.6	0	8.7	114	4	5	0	15	0	0	0	0	0	0	1
141.002	3	4.5	0	25	0	7.6	0	0	0	11.4	0	0	115	4	5	0	5	0	0	0	0	0	0	0
143.001	4	10.4	0	27	0	10.8	0	0	0	12.7	0	6.2	118	4	4	10	0	0	0	0	0	0	0	0
143.002	4	7.5	0	0	0	0	0	0	0	0	0	0	0	4	4	10	0	0	0	5	0	3	0	0
144.001	7	74.2	118	28	0	10.5	17.3	30.7	0	13.9	5.1	4.2	54	4	5	0	15	0	0	1	0	2	0	5
144.002	4	9.7	0	18	0	0	0	0	0	6.7	0	5.6	110	4	4	10	0	0	0	3	0	0	0	0
144.003	4	10.8	180	23	0	0	13.3	0	0	12.6	6.8	0	113	4	4	15	0	0	0	0	0	0	0	0
144.004	10	91.5	0	0	0	0	0	0	0	0	0	6.8	0	4	6	0	0	5	0	7	0	0	0	5
144.005	4	9.9	0	19	0	10.1	0	0	0	16	0	5.6	117	4	5	0	15	0	0	3	0	0	0	0

(continued)

**Table K.2.** continued

A	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
145.001	2	1.7	0	21	0	5.5	0	0	0	9.3	0	7.4	69	4	4	15	0	0	0	3	0	0	0	0
147.001	6	23.1	0	42	0	17.7	18.7	0	0	17.4	7.3	9	40	4	10	5	0	0	0	3	0	0	0	10
147.002	6	23.9	0	42	0	17.7	18.7	0	0	17.4	7.3	9	40	4	10	5	0	0	0	3	0	0	0	10
147.003	5	14	0	15	0	7.7	14.3	0	0	14.5	5.8	8.4	34	4	2	0	0	10	0	0	0	3	0	0
147.004	3	6.9	0	23	0	7.2	0	0	0	9	0	6.6	74	4	5	0	20	0	0	0	0	2	0	0

(continued)

## APPENDIX L

### Non-Diagnostic Ceramics from the Excavated Contexts

See Appendix J for descriptions of the codes for each variable.

**Table L.1.** Non-Diagnostic ceramics from excavated contexts

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
33	2	2.6	3	2	2	1	1	3	99	1	3	99	1		
33	1	5	3	2	2	1	2	1	98	2	3	99	1		
33	37	24.6	2	2	2	1	1	3	99	1	3	99	1		
33	1	3.2	2	2	2	1	1	3	99	1	3	99	1	120	1
33	1	0.4	2	2	2	3	1	3	99	1	3	99	1		
33	2	2.1	2	2	2	2	1	3	99	1	3	99	1		
33	2	4.1	2	2	2	4	1	3	99	1	3	99	1		
33	1	0.5	2	2	2	1	4	2	8	2	2	6	2		
33	1	2.1	2	2	2	1	3	3	99	1	2	7	2		
33	20	22.3	2	2	3	1	1	3	99	1	3	99	1		
33	1	1	2	2	3	2	1	3	99	1	3	99	1		
33	4	23.2	2	1	2	1	1	3	99	1	3	99	1		
33	3	3.4	2	1	4	1	1	3	99	1	3	99	1		
33	5	3.2	1	2	2	1	1	3	99	1	3	99	1		
34	5	5.7	3	2	2	1	1	3	99	1	3	99	1		
34	1	1.8	3	2	2	3	1	3	99	1	3	99	1		
34	1	2.4	3	2	2	1	2	1	98	1	3	99	1		
34	86	168	2	2	2	1	1	3	99	1	3	99	1		
34	2	6.1	2	2	2	3	1	3	99	1	3	99	1		
34	17	24.9	2	2	2	2	1	3	99	1	3	99	1		
34	10	15.5	2	2	2	4	1	3	99	1	3	99	1		
34	1	1.9	2	2	2	1	4	2	6	2	2	6	2		
34	1	1.4	2	2	2	1	4	1	8	2	1	8	2		
34	2	6.1	2	2	2	1	2	1	98	2	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
34	2	7.2	2	2	2	1	2	2	8	2	3	99	1		
34	1	0.5	2	2	2	1	4	2	1	5	2	1	5		
34	1	0.5	2	2	2	1	4	2	9	5	0	0	0		
34	1	2.5	2	2	5	1	1	3	99	1	3	99	1		
34	57	60.2	2	2	3	1	1	3	99	1	3	99	1		
34	2	5.8	2	2	3	3	1	3	99	1	3	99	1		
34	5	5.1	2	2	3	2	1	3	99	1	3	99	1		
34	8	44.5	2	1	2	1	1	3	99	1	3	99	1		
34	18	30.8	2	1	4	1	1	3	99	1	3	99	1		
34	13	22.5	1	2	2	1	1	3	99	1	3	99	1		
34	4	3.8	1	2	2	2	1	3	99	1	3	99	1		
34	1	0.6	1	2	2	4	1	3	99	1	3	99	1		
34	1	2.1	1	2	2	1	4	1	8	2	1	8	2		
35	4	10.3	3	2	2	1	1	3	99	1	3	99	1		
35	1	1.7	3	2	2	1	2	1	98	1	3	99	1		
35	7	8.7	2	2	2	1	1	3	99	1	3	99	1		
35	1	13.4	2	2	2	1	1	3	99	1	3	99	1	160	1
35	1	1.4	2	2	2	3	1	3	99	1	3	99	1		
35	15	17	2	2	2	2	1	3	99	1	3	99	1		
35	11	27.8	2	2	2	4	1	3	99	1	3	99	1		
35	1	2.9	2	2	2	1	4	2	4	0	2	1	0		
35	1	1.8	2	2	2	1	4	2	6	0	1	2	0		
35	1	5.2	2	2	2	1	4	2	2	0	2	4	0		
35	1	0.9	2	2	2	1	4	2	4	2	2	4	2		
35	1	1	2	2	2	1	4	2	8	0	2	8	0		
35	1	0.9	2	2	2	1	4	1	98	1	1	98	1		
35	1	8.5	2	2	2	1	4	2	8	2	2	8	2	113	1
35	2	2.1	2	2	2	1	2	1	98	1	3	99	1		
35	1	8.1	2	2	2	1	2	1	6	2	3	99	1		
35	1	3.5	2	2	2	1	2	1	5	2	3	99	1	98	0
35	135	214.8	2	2	3	1	1	3	99	1	3	99	1		
35	2	2.3	2	2	3	3	1	3	99	1	3	99	1		
35	8	12.2	2	2	3	2	1	3	99	1	3	99	1		
35	7	20.4	2	1	2	1	1	3	99	1	3	99	1		
35	16	32.3	2	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
35	32	41.1	1	2	2	1	1	3	99	1	3	99	1		
35	3	2.4	1	2	2	2	1	3	99	1	3	99	1		
35	2	1.4	1	2	2	4	1	3	99	1	3	99	1		
35	1	1.54	1	2	2	1	2	1	5	2	3	99	1		
35	3	13.4	1	1	2	1	1	3	99	1	3	99	1		
35	2	1.8	1	1	4	1	1	3	99	1	3	99	1		
36	5	4.4	3	2	2	1	1	3	99	1	3	99	1		
36	94	163.5	2	2	2	1	1	3	99	1	3	99	1		
36	1	4.4	2	2	2	1	1	3	99	1	3	99	1	158	1
36	1	11.7	2	2	2	1	1	3	99	1	3	99	1	150	2
36	1	2.6	2	2	2	1	1	3	99	1	3	99	1	190	1
36	1	5.5	2	2	2	1	1	3	99	1	3	99	1	147	1
36	2	4.7	2	2	2	3	1	3	99	1	3	99	1		
36	10	16.5	2	2	2	2	1	3	99	1	3	99	1		
36	3	6.9	2	2	2	4	1	3	99	1	3	99	1		
36	1	0.6	2	2	2	1	4	2	4	2	2	4	2		
36	2	3	2	2	2	1	4	2	1	2	1	4	2		
36	1	0.7	2	2	2	1	4	2	4	2	2	8	2		
36	1	1.4	2	2	2	1	2	2	1	2	3	99	1		
36	1	1.2	2	2	2	1	2	2	4	2	3	99	1		
36	1	1.4	2	2	2	1	2	1	6	2	3	99	1		
36	1	24.9	2	2	2	1	2	1	6	2	3	99	1	108	1
36	1	0.5	2	2	2	1	4	2	1	5	2	2	5		
36	1	0.8	2	2	2	1	3	3	99	1	2	9	5		
36	1	1.9	2	2	5	1	1	3	99	1	3	99	1		
36	48	66.5	2	2	3	1	1	3	99	1	3	99	1		
36	3	4.8	2	2	3	2	1	3	99	1	3	99	1		
36	4	40.4	2	1	2	1	1	3	99	1	3	99	1		
36	5	6.9	2	1	4	1	1	3	99	1	3	99	1		
36	24	34.3	1	2	2	1	1	3	99	1	3	99	1		
36	3	1.4	1	2	2	3	1	3	99	1	3	99	1		
36	7	6.7	1	2	2	2	1	3	99	1	3	99	1		
36	1	0.8	1	2	2	4	1	3	99	1	3	99	1		
36	2	1.7	1	1	4	1	1	3	99	1	3	99	1		
37	2	2.2	3	2	2	1	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
37	1	0.5	3	2	2	2	1	3	99	1	3	99	1		
37	1	2.4	3	2	2	1	2	2	2	2	3	99	1		
37	1	1.3	3	2	2	1	2	2	2	5	3	99	1		
37	70	64.1	2	2	2	1	1	3	99	1	3	99	1		
37	11	13.7	2	2	2	2	1	3	99	1	3	99	1		
37	12	17.5	2	2	2	4	1	3	99	1	3	99	1		
37	1	1.3	2	2	2	1	4	2	1	2	2	6	0		
37	1	0.9	2	2	2	1	4	2	6	2	2	6	2		
37	1	0.2	2	2	2	1	2	2	8	0	3	99	1		
37	2	17.6	2	2	2	1	2	2	6	2	3	99	1		
37	1	3	2	2	2	1	2	2	8	0	3	99	1		
37	1	2	2	2	2	1	2	2	2	2	3	99	1		
37	1	9.7	2	2	2	1	2	2	9	2	3	99	1	107	0
37	1	2.4	2	2	5	1	1	3	99	1	3	99	1		
37	55	56.4	2	2	3	1	1	3	99	1	3	99	1		
37	2	1.4	2	1	4	1	1	3	99	1	3	99	1		
37	24	20	1	2	2	1	1	3	99	1	3	99	1		
37	1	0.9	1	2	2	3	1	3	99	1	3	99	1		
37	5	4.1	1	2	2	2	1	3	99	1	3	99	1		
37	1	0.7	1	2	2	4	1	3	99	1	3	99	1		
38	1	4.4	3	2	2	1	4	1	98	1	1	98	1		
38	2	10.8	3	2	2	1	4	1	98	1	1	98	1		
38	2	4.5	3	2	3	1	1	3	99	1	3	99	1		
38	751	2318.2	2	2	2	1	1	3	99	1	3	99	1		
38	26	46.2	2	2	2	3	1	3	99	1	3	99	1		
38	41	87.8	2	2	2	2	1	3	99	1	3	99	1		
38	21	35.1	2	2	2	4	1	3	99	1	3	99	1		
38	10	27.6	2	2	2	1	4	1	98	1	1	98	1		
38	11	104.1	2	2	2	1	2	1	98	1	3	99	1		
38	4	21	2	2	2	1	3	3	99	1	1	98	1		
38	3	8.3	2	2	2	1	4	1	98	1	1	98	1		
38	4	22	2	2	2	1	2	1	98	1	3	99	1		
38	8	22.2	2	2	2	1	3	3	99	1	1	98	1		
38	4	14.1	2	2	5	1	1	3	99	1	3	99	1		
38	1189	2847	2	2	3	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
38	5	14.1	2	2	3	3	1	3	99	1	3	99	1		
38	78	240.6	2	2	3	2	1	3	99	1	3	99	1		
38	238	334.7	1	2	2	1	1	3	99	1	3	99	1		
38	12	20.1	1	2	2	3	1	3	99	1	3	99	1		
38	22	42.8	1	2	2	2	1	3	99	1	3	99	1		
38	5	9.7	1	2	2	4	1	3	99	1	3	99	1		
38	1	1.2	1	2	2	1	4	1	98	1	1	98	1		
38	3	7.5	1	2	2	1	2	1	98	1	3	99	1		
38	11	20.7	1	2	3	1	1	3	99	1	3	99	1		
38	9	30.3	1	1	0	0	0	0	0	0	0	0	0		
38	105	566.3	2	1	0	0	0	0	0	0	0	0	0		
38	9	29.9	3	1	0	0	0	0	0	0	0	0	0		
39	2	7	3	2	2	2	1	3	99	1	3	99	1		
39	4	29.2	3	2	2	1	4	1	98	1	1	98	1		
39	1	1.4	3	2	2	1	2	1	98	1	3	99	1		
39	2	5.4	3	2	2	1	3	3	99	1	1	98	1		
39	2	3.8	3	2	3	1	1	3	99	1	3	99	1		
39	948	2411	2	2	2	1	1	3	99	1	3	99	1		
39	22	68	2	2	2	3	1	3	99	1	3	99	1		
39	183	473	2	2	2	2	1	3	99	1	3	99	1		
39	154	446.7	2	2	2	4	1	3	99	1	3	99	1		
39	184	918.6	2	2	2	1	4	1	98	1	1	98	1		
39	122	735.8	2	2	2	1	2	1	98	1	3	99	1		
39	16	104.1	2	2	2	1	3	3	99	1	1	98	1		
39	15	134	2	2	2	1	4	1	98	1	1	98	1		
39	16	96.5	2	2	2	1	2	1	98	1	3	99	1		
39	10	24.9	2	2	2	1	3	3	99	1	1	98	1		
39	518	1078.7	2	2	3	1	1	3	99	1	3	99	1		
39	6	43.2	2	2	3	3	1	3	99	1	3	99	1		
39	72	199.6	2	2	3	2	1	3	99	1	3	99	1		
39	69	97.5	1	2	2	1	1	3	99	1	3	99	1		
39	1	14.3	1	2	2	3	1	3	99	1	3	99	1		
39	11	31.1	1	2	2	2	1	3	99	1	3	99	1		
39	22	75.3	1	2	2	4	1	3	99	1	3	99	1		
39	13	63.9	1	2	2	1	4	1	98	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
39	2	27.8	1	2	2	1	4	1	98	1	1	98	1		
39	1	4.8	1	2	2	1	2	1	98	1	3	99	1		
39	8	37.7	1	1	0	0	0	0	0	0	0	0	0		
39	5	6.8	3	1	0	0	0	0	0	0	0	0	0		
39	184	1499.5	2	1	0	0	0	0	0	0	0	0	0		
40	1	1.4	3	2	2	1	1	3	99	1	3	99	1		
40	1	1.8	3	2	2	1	2	1	98	1	3	99	1		
40	214	357.8	2	2	2	1	1	3	99	1	3	99	1		
40	1	10.2	2	2	2	1	1	3	99	1	3	99	1	130	1
40	1	4.8	2	2	2	1	1	3	99	1	3	99	1	138	0
40	1	4.7	2	2	2	1	1	3	99	1	3	99	1	131	0
40	1	3.7	2	2	2	1	1	3	99	1	3	99	1	103	1
40	1	7.9	2	2	2	3	1	3	99	1	3	99	1		
40	26	32.8	2	2	2	2	1	3	99	1	3	99	1		
40	50	50	2	2	2	4	1	3	99	1	3	99	1		
40	1	3.1	2	2	2	1	4	2	4	2	2	4	2		
40	2	9.6	2	2	2	1	4	2	8	2	2	8	2		
40	1	1.2	2	2	2	1	4	2	6	2	2	6	2		
40	2	1.7	2	2	2	1	4	2	4	2	2	8	2		
40	1	11.8	2	2	2	1	4	2	2	2	2	2	2		
40	1	6.4	2	2	2	1	4	2	8	2	2	8	2	107	1
40	1	5.8	2	2	2	1	4	2	6	2	2	8	2	157	1
40	1	1.2	2	2	2	1	2	2	6	2	3	99	1		
40	1	2.4	2	2	2	1	2	1	98	1	3	99	1		
40	2	2.7	2	2	2	1	2	2	1	2	3	99	1		
40	1	7	2	2	2	1	2	2	8	2	3	99	1		
40	1	4.7	2	2	2	1	3	3	99	1	2	8	2		
40	180	210.4	2	2	3	1	1	3	99	1	3	99	1		
40	2	5.8	2	2	3	3	1	3	99	1	3	99	1		
40	2	2.3	2	2	3	2	1	3	99	1	3	99	1		
40	1	1.1	2	2	3	4	1	3	99	1	3	99	1		
40	19	195.3	2	1	2	1	1	3	99	1	3	99	1		
40	17	21	2	1	4	1	1	3	99	1	3	99	1		
40	33	43.1	1	2	2	1	1	3	99	1	3	99	1		
40	1	0.8	1	2	2	2	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
40	1	1.3	1	2	2	4	1	3	99	1	3	99	1		
40	2	2.5	1	2	2	1	4	1	98	1	1	98	1		
40	3	4	1	2	3	1	1	3	99	1	3	99	1		
40	3	8.4	1	1	2	1	1	3	99	1	3	99	1		
40	2	16.7	1	1	4	1	1	3	99	1	3	99	1		
41	1	1.2	3	2	2	1	4	2	1	5	2	1	5		
41	1	10.2	3	2	2	1	4	2	1	5	2	1	5	98	1
41	21	34.2	2	2	2	1	1	3	99	1	3	99	1		
41	2	3.8	2	2	2	4	1	3	99	1	3	99	1		
41	1	1.3	2	2	2	1	4	2	9	2	2	9	2		
41	2	3.3	2	2	2	1	2	2	2	2	3	99	1		
41	1	1.5	2	2	2	1	2	2	2	5	3	99	1		
41	4	22.9	2	1	2	1	1	3	99	1	3	99	1		
41	7	6.5	1	2	2	1	1	3	99	1	3	99	1		
42	2	0.9	3	2	2	1	1	3	99	1	3	99	1		
42	1	6	3	2	2	1	2	1	98	1	3	99	1		
42	16	32	2	2	2	1	1	3	99	1	3	99	1		
42	2	1.8	2	2	2	3	1	3	99	1	3	99	1		
42	2	3.9	2	2	2	2	1	3	99	1	3	99	1		
42	1	1.4	2	2	2	4	1	3	99	1	3	99	1		
42	11	19.8	2	2	3	1	1	3	99	1	3	99	1		
42	3	16.1	2	1	2	1	1	3	99	1	3	99	1		
42	1	1.6	2	1	4	1	1	3	99	1	3	99	1		
42	4	3.2	1	2	2	1	1	3	99	1	3	99	1		
43	15	14.8	2	2	2	1	1	3	99	1	3	99	1		
43	2	1.3	2	2	2	2	1	3	99	1	3	99	1		
43	3	6.9	2	2	2	4	1	3	99	1	3	99	1		
43	2	3.8	2	2	3	1	1	3	99	1	3	99	1		
43	1	1.3	2	2	3	2	1	3	99	1	3	99	1		
43	2	6.9	2	1	2	1	1	3	99	1	3	99	1		
44	5	11.4	2	2	2	1	1	3	99	1	3	99	1		
44	3	6.9	2	2	3	1	1	3	99	1	3	99	1		
44	2	6.9	1	2	2	1	1	3	99	1	3	99	1		
44	1	1	1	2	2	2	1	3	99	1	3	99	1		
45	25	38.9	2	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
45	1	7.9	2	2	2	1	1	3	99	1	3	99	1		
45	1	7.2	2	2	2	1	1	3	99	1	3	99	1	118	1
45	1	2.7	2	2	2	3	1	3	99	1	3	99	1		
45	5	5.3	2	2	2	2	1	3	99	1	3	99	1		
45	1	6.8	2	2	2	4	1	3	99	1	3	99	1	127	1
45	1	1.7	2	2	2	1	2	1	98	1	3	99	1		
45	10	10.6	2	2	3	1	1	3	99	1	3	99	1		
45	1	1.1	2	1	2	1	1	3	99	1	3	99	1		
45	2	2.4	1	2	2	1	1	3	99	1	3	99	1		
46	58	69.2	2	2	2	1	1	3	99	1	3	99	1		
46	1	2.7	2	2	2	1	1	3	99	1	3	99	1	109	1
46	3	6.2	2	2	2	2	1	3	99	1	3	99	1		
46	3	3.9	2	2	2	4	1	3	99	1	3	99	1		
46	1	1.3	2	2	2	1	4	1	98	1	1	98	1		
46	1	2	2	2	2	1	4	2	1	2	2	6	2		
46	1	3.5	2	2	2	1	2	1	98	1	3	99	1		
46	1	1.8	2	2	2	1	2	2	1	2	3	99	1		
46	1	3.3	2	2	2	1	4	2	1	5	2	8	2		
46	23	37.2	2	2	3	1	1	3	99	1	3	99	1		
46	1	0.9	2	2	3	4	1	3	99	1	3	99	1		
46	5	19.2	2	1	2	1	1	3	99	1	3	99	1		
46	14	10.5	1	2	2	1	1	3	99	1	3	99	1		
46	1	8.8	1	2	2	1	1	3	99	1	3	99	1	110	0
46	2	0.9	1	2	2	2	1	3	99	1	3	99	1		
46	1	0.8	1	2	2	1	2	1	98	1	3	99	1		
46	1	0.8	1	1	4	1	1	3	99	1	3	99	1		
47	6	8.7	3	2	2	1	1	3	99	1	3	99	1		
47	6	5.2	3	2	2	1	1	3	99	1	3	99	1		
47	2	1.6	3	2	2	2	1	3	99	1	3	99	1		
47	2	5.4	3	2	2	1	4	1	98	1	1	98	1		
47	329	654.4	2	2	2	1	1	3	99	1	3	99	1		
47	1	25.9	2	2	2	1	1	3	99	1	3	99	1	154	1
47	1	12.1	2	2	2	1	1	3	99	1	3	99	1	190	1
47	1	17.8	2	2	2	1	1	3	99	1	3	99	1	138	2
47	1	17	2	2	2	1	1	3	99	1	3	99	1	131	2

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
47	1	6.9	2	2	2	1	1	3	99	1	3	99	1	134	1
47	1	4.9	2	2	2	1	1	3	99	1	3	99	1	120	1
47	420	721.2	2	2	2	1	1	3	99	1	3	99	1		
47	1	43.3	2	2	2	1	1	3	99	1	3	99	1	135	1
47	1	13.4	2	2	2	1	1	3	99	1	3	99	1	112	1
47	1	13.8	2	2	2	1	1	3	99	1	3	99	1	88	1
47	1	7.6	2	2	2	1	1	3	99	1	3	99	1	104	2
47	1	7.8	2	2	2	1	1	3	99	1	3	99	1	122	1
47	1	7.4	2	2	2	1	1	3	99	1	3	99	1	111	1
47	1	15.1	2	2	2	1	1	3	99	1	3	99	1	170	2
47	1	7.4	2	2	2	1	1	3	99	1	3	99	1	161	1
47	1	6.1	2	2	2	1	1	3	99	1	3	99	1	114	0
47	1	8	2	2	2	1	1	3	99	1	3	99	1	164	1
47	1	4.6	2	2	2	1	1	3	99	1	3	99	1	150	1
47	1	3.8	2	2	2	1	1	3	99	1	3	99	1	124	1
47	1	3.2	2	2	2	1	1	3	99	1	3	99	1	127	1
47	1	2.2	2	2	2	1	1	3	99	1	3	99	1	135	1
47	523	888.9	2	2	2	1	1	3	99	1	3	99	1		
47	1	14.9	2	2	2	1	1	3	99	1	3	99	1	124	1
47	1	14.8	2	2	2	1	1	3	99	1	3	99	1	180	3
47	1	15.7	2	2	2	1	1	3	99	1	3	99	1	180	1
47	1	8.5	2	2	2	1	1	3	99	1	3	99	1	162	1
47	1	5.4	2	2	2	1	1	3	99	1	3	99	1	135	1
47	1	6.1	2	2	2	1	1	3	99	1	3	99	1	143	1
47	1	2.2	2	2	2	3	1	3	99	1	3	99	1		
47	2	11.6	2	2	2	3	1	3	99	1	3	99	1		
47	28	34.3	2	2	2	2	1	3	99	1	3	99	1		
47	33	42.9	2	2	2	2	1	3	99	1	3	99	1		
47	29	51.8	2	2	2	2	1	3	99	1	3	99	1		
47	1	8.3	2	2	2	2	1	3	99	1	3	99	1	129	1
47	24	44.7	2	2	2	4	1	3	99	1	3	99	1		
47	34	54.9	2	2	2	4	1	3	99	1	3	99	1		
47	24	32.9	2	2	2	4	1	3	99	1	3	99	1		
47	1	50.8	2	2	2	4	1	3	99	1	3	99	1	146	3
47	4	22.7	2	2	2	1	4	1	98	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
47	1	2.5	2	2	2	1	4	2	1	2	1	4	2		
47	1	7.9	2	2	2	1	4	1	7	0	1	7	0	115	1
47	1	1.2	2	2	2	1	4	1	98	1	1	98	1		
47	2	5	2	2	2	1	4	2	8	2	2	8	2		
47	1	3.2	2	2	2	1	4	2	2	2	2	2	2	119	1
47	3	9.2	2	2	2	1	4	1	98	1	1	98	1		
47	1	4.5	2	2	2	1	4	2	9	0	2	9	0		
47	4	20.3	2	2	2	1	2	1	98	1	3	99	1		
47	4	9.2	2	2	2	1	2	1	98	1	3	99	1		
47	1	7.5	2	2	2	1	2	1	6	0	3	99	1	97	1
47	1	8.6	2	2	2	1	2	1	8	0	3	99	1	152	2
47	1	10.3	2	2	2	1	2	1	6	2	3	99	1	119	2
47	1	4.2	2	2	2	1	2	2	2	2	3	99	1	107	1
47	3	28.5	2	2	2	1	2	1	98	1	3	99	1		
47	1	11.6	2	2	2	1	2	2	9	2	3	99	1	86	1
47	1	9.7	2	2	2	1	2	1	8	0	3	99	1	165	1
47	1	8.3	2	2	2	1	2	1	4	2	3	99	1	165	1
47	5	20.2	2	2	2	1	3	3	99	1	1	98	1		
47	2	7.8	2	2	2	1	3	3	99	1	2	4	2		
47	1	3.7	2	2	2	1	4	1	7	5	1	7	5		
47	1	4.5	2	2	2	1	4	2	1	5	1	4	5		
47	2	7.1	2	2	2	1	3	3	99	1	1	4	5		
47	1	5.7	2	2	2	1	3	0	0	0	2	9	5		
47	1	5.6	2	2	5	1	1	3	99	1	3	99	1		
47	1	5.2	2	2	5	1	1	3	99	1	3	99	1		
47	1	3.1	2	2	5	1	1	3	99	1	3	99	1		
47	382	308.4	2	2	3	1	1	3	99	1	3	99	1		
47	259	366.8	2	2	3	1	1	3	99	1	3	99	1		
47	190	334.2	2	2	3	1	1	3	99	1	3	99	1		
47	4	22.8	2	2	3	3	1	3	99	1	3	99	1		
47	6	17.4	2	2	3	3	1	3	99	1	3	99	1		
47	3	10.2	2	2	3	3	1	3	99	1	3	99	1		
47	6	7.8	2	2	3	2	1	3	99	1	3	99	1		
47	12	17.4	2	2	3	2	1	3	99	1	3	99	1		
47	12	16.9	2	2	3	2	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
47	9	9.3	2	2	3	2	1	3	99	1	3	99	1		
47	3	4.4	2	2	3	4	1	3	99	1	3	99	1		
47	11	15.3	2	2	3	4	1	3	99	1	3	99	1		
47	2	2.3	2	2	3	4	1	3	99	1	3	99	1		
47	1	79.5	2	1	2	1	1	3	99	1	3	99	1		
47	11	219.7	2	1	2	1	1	3	99	1	3	99	1		
47	1	15.4	2	1	2	1	1	3	99	1	3	99	1		
47	2	84.1	2	1	2	1	2	1	7	2	3	99	1		
47	17	15.6	2	1	4	1	1	3	99	1	3	99	1		
47	23	28.2	2	1	4	1	1	3	99	1	3	99	1		
47	14	34.6	2	1	4	1	1	3	99	1	3	99	1		
47	2	4.2	2	1	4	1	4	2	8	2	2	8	2		
47	3	6.2	2	1	4	1	4	2	8	2	2	8	2		
47	21	38.5	1	2	2	1	1	3	99	1	3	99	1		
47	51	42.7	1	2	2	1	1	3	99	1	3	99	1		
47	41	37.8	1	2	2	1	1	3	99	1	3	99	1		
47	1	6.3	1	2	2	1	1	3	99	1	3	99	1	138	1
47	1	13.2	1	2	2	2	1	3	99	1	3	99	1	155	1
47	11	6.3	1	2	2	2	1	3	99	1	3	99	1		
47	5	4.1	1	2	2	2	1	3	99	1	3	99	1		
47	4	7.6	1	2	2	4	1	3	99	1	3	99	1		
47	2	1.1	1	2	2	4	1	3	99	1	3	99	1		
47	1	0.5	1	2	2	4	1	3	99	1	3	99	1		
47	1	14.6	1	2	2	1	2	1	9	2	3	99	1	115	1
47	1	1.1	1	2	5	1	1	3	99	1	3	99	1		
47	3	2.5	1	2	3	1	1	3	99	1	3	99	1		
47	1	1.1	1	2	3	1	1	3	99	1	3	99	1		
47	1	8.5	1	1	2	1	1	3	99	1	3	99	1		
47	3	6.6	1	1	4	1	1	3	99	1	3	99	1		
47	13	34.6	1	1	4	1	1	3	99	1	3	99	1		
47	1	3.2	1	1	4	1	1	3	99	1	3	99	1		
47	1	11.3	2	2	2	2	2	2	4	2	3	99	1	127	1
48	30	40.2	3	2	2	1	1	3	99	1	3	99	1		
48	17	20.5	3	2	2	1	1	3	99	1	3	99	1		
48	6	10.6	3	2	2	1	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
48	3	4.6	3	2	2	1	1	3	99	1	3	99	1		
48	1	0.8	3	2	2	2	1	3	99	1	3	99	1		
48	3	5.8	3	2	2	2	1	3	99	1	3	99	1		
48	1	1.6	3	2	2	2	1	3	99	1	3	99	1		
48	1	1.2	3	2	2	4	1	3	99	1	3	99	1		
48	1	1.3	3	2	2	1	2	1	98	1	3	99	1		
48	2	9.7	3	2	2	1	2	1	98	2	3	99	1		
48	1	7.1	3	2	2	1	2	1	98	1	3	99	1	92	1
48	1	1.6	3	2	2	1	2	1	2	2	3	99	1	120	1
48	1	2.6	3	2	2	1	4	1	1	0	1	1	5	107	1
48	14	20.2	3	2	3	1	1	3	99	1	3	99	1		
48	5	3.9	3	2	3	1	1	3	99	1	3	99	1		
48	3	9.8	3	2	3	1	1	3	99	1	3	99	1		
48	491	852.9	2	2	2	1	1	3	99	1	3	99	1		
48	1	15.1	2	2	2	1	1	3	99	1	3	99	1	180	2
48	1	14.6	2	2	2	1	1	3	99	1	3	99	1	155	1
48	1	12.1	2	2	2	1	1	3	99	1	3	99	1	141	1
48	1	4.5	2	2	2	1	1	3	99	1	3	99	1	135	1
48	1	1.4	2	2	2	1	1	3	99	1	3	99	1	160	1
48	330	701.5	2	2	2	1	1	3	99	1	3	99	1		
48	1	21.5	2	2	2	1	1	3	99	1	3	99	1	80	0
48	1	14.7	2	2	2	1	1	3	99	1	3	99	1	145	1
48	1	15.5	2	2	2	1	1	3	99	1	3	99	1	149	2
48	1	8.5	2	2	2	1	1	3	99	1	3	99	1	153	1
48	1	6.8	2	2	2	1	1	3	99	1	3	99	1	141	1
48	500	787.7	2	2	2	1	1	3	99	1	3	99	1		
48	1	21	2	2	2	1	1	3	99	1	3	99	1	115	1
48	1	10.7	2	2	2	1	1	3	99	1	3	99	1	111	1
48	1	15.8	2	2	2	1	1	3	99	1	3	99	1	117	2
48	1	5.6	2	2	2	1	1	3	99	1	3	99	1	126	1
48	1	8.3	2	2	2	1	1	3	99	1	3	99	1	168	1
48	648	1011.2	2	2	2	1	1	3	99	1	3	99	1		
48	1	28.2	2	2	2	1	1	3	99	1	3	99	1	160	3
48	1	12	2	2	2	1	1	3	99	1	3	99	1	136	1
48	1	9.7	2	2	2	1	1	3	99	1	3	99	1	123	2

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
48	1	4	2	2	2	1	1	3	99	1	3	99	1	140	1
48	1	3.3	2	2	2	1	1	3	99	1	3	99	1	170	1
48	1	5.2	2	2	2	1	1	3	99	1	3	99	1	160	2
48	1	4.1	2	2	2	1	1	3	99	1	3	99	1	138	1
48	1	3.2	2	2	2	1	1	3	99	1	3	99	1	132	1
48	3	4.9	2	2	2	3	1	3	99	1	3	99	1		
48	3	9.8	2	2	2	3	1	3	99	1	3	99	1		
48	1	0.3	2	2	2	3	1	3	99	1	3	99	1		
48	1	4.7	2	2	2	3	1	3	99	1	3	99	1		
48	42	81.8	2	2	2	2	1	3	99	1	3	99	1		
48	1	38.6	2	2	2	2	1	3	99	1	3	99	1	143	2
48	34	81.4	2	2	2	2	1	3	99	1	3	99	1		
48	40	79.1	2	2	2	2	1	3	99	1	3	99	1		
48	1	44.1	2	2	2	2	1	3	99	1	3	99	1	133	2
48	1	12	2	2	2	2	1	3	99	1	3	99	1	136	2
48	24	44.2	2	2	2	2	1	3	99	1	3	99	1		
48	1	9.8	2	2	2	2	1	3	99	1	3	99	1	107	1
48	31	65.7	2	2	2	4	1	3	99	1	3	99	1		
48	13	35.6	2	2	2	4	1	3	99	1	3	99	1		
48	1	13.7	2	2	2	4	1	3	99	1	3	99	1	110	1
48	28	49.4	2	2	2	4	1	3	99	1	3	99	1		
48	1	27	2	2	2	4	1	3	99	1	3	99	1	148	3
48	34	86.1	2	2	2	4	1	3	99	1	3	99	1		
48	1	2.9	2	2	2	1	4	1	4	0	1	8	0	140	1
48	2	18.6	2	2	2	1	4	1	98	1	1	98	1		
48	1	4.7	2	2	2	1	2	2	2	2	3	99	1		
48	1	2.9	2	2	2	1	2	1	6	0	0	0	0		
48	1	7.4	2	2	2	1	2	2	4	2	3	99	1	159	1
48	3	8.2	2	2	2	1	2	1	98	1	3	99	1		
48	1	6.8	2	2	2	1	2	1	1	2	3	99	1	146	1
48	1	3.6	2	2	2	1	2	2	9	2	3	99	1	107	1
48	1	2	2	2	2	1	2	1	98	2	3	99	1		
48	1	88.4	2	2	2	1	2	1	4	0	3	99	1	137	3
48	1	8	2	2	2	1	2	1	4	2	3	99	1	142	2
48	1	6	2	2	2	1	3	3	99	1	2	4	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
48	1	8.1	2	2	2	1	4	2	2	5	2	2	5		
48	1	3.8	2	2	2	1	4	1	2	5	1	2	5		
48	2	28.2	2	2	2	1	2	1	1	5	3	99	1		
48	1	2.1	2	2	2	1	4	2	9	5	2	9	0		
48	3	14.6	2	2	5	1	1	3	99	1	3	99	1		
48	1	5	2	2	5	1	1	3	99	1	3	99	1	161	2
48	1	1.9	2	2	5	1	1	3	99	1	3	99	1		
48	276	414.3	2	2	3	1	1	3	99	1	3	99	1		
48	291	395.3	2	2	3	1	1	3	99	1	3	99	1		
48	232	427	2	2	3	1	1	3	99	1	3	99	1		
48	307	443.2	2	2	3	1	1	3	99	1	3	99	1		
48	7	18.5	2	2	3	3	1	3	99	1	3	99	1		
48	2	12.8	2	2	3	3	1	3	99	1	3	99	1		
48	1	2.8	2	2	3	3	1	3	99	1	3	99	1		
48	2	1.5	2	2	3	3	1	3	99	1	3	99	1		
48	6	4.9	2	2	3	2	1	3	99	1	3	99	1		
48	9	12.3	2	2	3	2	1	3	99	1	3	99	1		
48	8	23.2	2	2	3	2	1	3	99	1	3	99	1		
48	20	32.7	2	2	3	2	1	3	99	1	3	99	1		
48	4	8	2	2	3	4	1	3	99	1	3	99	1		
48	7	7.9	2	2	3	4	1	3	99	1	3	99	1		
48	7	10.7	2	2	3	4	1	3	99	1	3	99	1		
48	7	4.6	2	2	3	4	1	3	99	1	3	99	1		
48	2	43.9	2	1	2	1	1	3	99	1	3	99	1		
48	1	6.9	2	1	2	1	1	3	99	1	3	99	1		
48	6	46.7	2	1	2	1	1	3	99	1	3	99	1		
48	5	47.3	2	1	2	1	1	3	99	1	3	99	1		
48	2	51.6	2	1	2	1	4	2	9	0	2	9	0		
48	1	16.9	2	1	3	1	1	3	99	2	3	99	1		
48	14	41.1	2	1	4	1	1	3	99	1	3	99	1		
48	13	19.5	2	1	4	1	1	3	99	1	3	99	1		
48	16	28.6	2	1	4	1	1	3	99	1	3	99	1		
48	14	23	2	1	4	1	1	3	99	1	3	99	1		
48	2	3.7	2	1	4	1	4	2	8	2	2	8	2		
48	1	0.4	2	1	4	1	2	2	8	2	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
48	1	0.7	2	1	4	1	2	2	8	2	3	99	1		
48	502	503	1	2	2	1	1	3	99	1	3	99	1		
48	1	4.9	1	2	2	1	1	3	99	1	3	99	1	180	2
48	1	2.2	1	2	2	1	1	3	99	1	3	99	1	143	1
48	43	53.9	1	2	2	1	1	3	99	1	3	99	1		
48	50	73	1	2	2	1	1	3	99	1	3	99	1		
48	2	1.2	1	2	2	1	1	3	99	1	3	99	1		
48	1	16.4	1	2	2	1	1	3	99	1	3	99	1	148	0
48	70	64.6	1	2	2	1	1	3	99	1	3	99	1		
48	7	10.1	1	2	2	2	1	3	99	1	3	99	1		
48	2	3	1	2	2	2	1	3	99	1	3	99	1		
48	5	6	1	2	2	2	1	3	99	1	3	99	1		
48	7	9.7	1	2	2	4	1	3	99	1	3	99	1		
48	2	2.8	1	2	2	4	1	3	99	1	3	99	1		
48	1	1.1	1	2	5	1	1	3	99	1	3	99	1		
48	3	3.1	1	2	5	1	1	3	99	1	3	99	1		
48	3	7.3	1	2	3	1	1	3	99	1	3	99	1		
48	1	13	1	2	3	1	1	3	99	1	3	99	1		
48	11	13.6	1	1	4	1	1	3	99	1	3	99	1		
48	1	6	1	1	4	1	1	3	99	1	3	99	1		
48	1	28.3	1	1	4	1	1	3	99	1	3	99	1		
48	4	2.8	1	1	4	1	1	3	99	1	3	99	1		
49	16	6.8	0	0	0	0	0	0	0	0	0	0	0		
49	7	3.7	0	0	0	0	0	0	0	0	0	0	0		
49	22	17.9	0	0	0	0	0	0	0	0	0	0	0		
49	27	33	0	0	0	0	0	0	0	0	0	0	0		
49	8	16.6	3	2	2	1	1	3	99	1	3	99	1		
49	34	56.4	3	2	2	1	1	3	99	1	3	99	1		
49	1	6.7	3	2	2	3	1	3	99	1	3	99	1		
49	1	0.7	3	2	2	2	1	3	99	1	3	99	1		
49	4	4.2	3	2	2	2	1	3	99	1	3	99	1		
49	2	4.6	3	2	2	4	1	3	99	1	3	99	1		
49	4	8.6	3	2	2	4	1	3	99	1	3	99	1		
49	6	16.9	3	2	2	1	4	1	98	1	1	98	1		
49	2	6.6	3	2	2	1	4	1	98	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
49	1	3.6	3	2	2	1	2	1	98	1	3	99	1		
49	1	2.5	3	2	2	1	2	2	4	2	3	99	1		
49	1	8.5	3	2	2	1	2	2	4	0	3	99	1		
49	5	8.9	3	2	3	1	1	3	99	1	3	99	1		
49	18	17.1	3	2	3	1	1	3	99	1	3	99	1		
49	3	14.2	3	1	4	1	1	3	99	1	3	99	1		
49	293	625	2	2	2	1	1	3	99	1	3	99	1		
49	462	663	2	2	2	1	1	3	99	1	3	99	1		
49	2	31.3	2	2	2	3	1	3	99	1	3	99	1		
49	4	17.8	2	2	2	3	1	3	99	1	3	99	1		
49	22	25.2	2	2	2	2	1	3	99	1	3	99	1		
49	38	50.6	2	2	2	2	1	3	99	1	3	99	1		
49	34	56.3	2	2	2	4	1	3	99	1	3	99	1		
49	55	101.5	2	2	2	4	1	3	99	1	3	99	1		
49	13	23.8	2	2	2	1	4	1	98	1	1	98	1		
49	7	39.3	2	2	2	1	4	1	98	1	1	98	1		
49	2	6	2	2	2	1	2	1	98	1	3	99	1		
49	1	6.2	2	2	2	1	2	2	6	2	3	99	1		
49	2	9.4	2	2	2	1	2	1	98	1	3	99	1		
49	3	5.5	2	2	2	1	2	1	98	1	3	99	1		
49	1	8.1	2	2	2	1	4	1	1	5	1	3	5		
49	1	1.4	2	2	2	1	4	1	8	5	1	6	5		
49	3	11.5	2	2	5	1	1	3	99	1	3	99	1		
49	4	15.8	2	2	5	1	1	3	99	1	3	99	1		
49	2	1.5	2	2	5	3	1	3	99	1	3	99	1		
49	236	415.2	2	2	3	1	1	3	99	1	3	99	1		
49	345	578.7	2	2	3	1	1	3	99	1	3	99	1		
49	9	43.1	2	2	3	3	1	3	99	1	3	99	1		
49	10	30.4	2	2	3	3	1	3	99	1	3	99	1		
49	10	16.7	2	2	3	2	1	3	99	1	3	99	1		
49	12	15.6	2	2	3	2	1	3	99	1	3	99	1		
49	19	92.8	2	2	3	4	1	3	99	1	3	99	1		
49	10	28.9	2	2	3	4	1	3	99	1	3	99	1		
49	16	29.3	2	1	4	1	1	3	99	1	3	99	1		
49	27	29.9	2	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
49	24	30.2	1	2	2	1	1	3	99	1	3	99	1		
49	44	58.1	1	2	2	1	1	3	99	1	3	99	1		
49	3	2.3	1	2	2	4	1	3	99	1	3	99	1		
49	6	14.6	1	2	2	4	1	3	99	1	3	99	1		
49	1	2.6	1	2	2	1	4	1	98	1	1	98	1		
49	2	4	1	2	5	1	1	3	99	1	3	99	1		
49	5	4.4	1	2	3	1	1	3	99	1	3	99	1		
49	28	53.1	1	2	3	1	1	3	99	1	3	99	1		
49	4	2.5	1	1	4	1	1	3	99	1	3	99	1		
49	1	20.5	2	2	2	1	1	3	99	1	3	99	1	156	1
49	1	6.4	2	2	2	1	1	3	99	1	3	99	1	97	1
49	1	14.2	2	2	2	2	1	3	99	1	3	99	1	115	1
49	1	4.1	2	2	2	1	2	1	8	2	3	99	1	176	1
49	1	14.6	1	2	2	4	1	3	99	1	3	99	1	143	2
49	1	3.2	1	2	2	2	1	3	99	1	3	99	1	129	2
49	1	11.7	2	2	2	1	2	1	4	0	0	0	0	169	2
49	1	6.9	2	2	2	1	1	3	99	1	3	99	1	170	1
49	1	7	2	2	2	1	1	3	99	1	3	99	1	167	1
49	1	10.8	2	2	2	1	4	1	4	2	1	4	2	163	2
49	1	14.4	2	2	2	1	2	1	4	0	0	0	0	143	2
49	1	7.8	2	2	2	1	0	0	0	0	0	0	0	156	1
49	1	6.1	1	2	2	1	0	0	0	0	0	0	0	142	1
49	1	6.2	2	2	2	1	0	0	0	0	0	0	0	142	1
49	1	3.6	1	2	2	1	0	0	0	0	0	0	0	129	1
49	1	2.4	2	2	2	2	2	1	2	0	0	0	0	119	1
49	1	3.1	2	2	2	1	0	0	0	0	0	0	0	150	1
49	1	2.8	1	2	2	1	0	0	0	0	0	0	0	170	1
49	1	5.4	2	2	2	1	0	0	0	0	0	0	0	138	1
49	1	1.8	2	2	2	0	0	0	0	0	0	0	0	135	1
49	1	3.3	3	2	2	1	0	0	0	0	0	0	0	109	1
49	1	2.5	1	2	2	1	4	1	6	0	2	8	2	135	1
49	1	29.9	1	2	2	1	2	1	6	0	0	0	0	137	1
49	1	28.2	1	2	2	1	2	1	6	0	0	0	0	180	2
49	1	9.9	1	2	2	1	0	0	0	0	0	0	0	150	2
49	1	8.5	2	2	2	1	2	1	6	0	0	0	0	160	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
49	1	5.6	2	2	2	1	4	2	8	2	2	8	2	116	1
49	1	16.8	2	2	2	1	0	0	0	0	0	0	0	146	1
49	1	18.9	2	2	2	1	0	0	0	0	0	0	0	158	1
49	1	15.9	2	2	2	2	2	1	4	0	0	0	0	131	1
49	1	12.6	2	2	2	1	0	0	0	0	0	0	0	140	1
49	1	9.8	2	2	2	1	0	0	0	0	0	0	0	168	1
49	1	5.8	2	2	2	1	0	0	0	0	0	0	0	174	1
49	1	10.2	2	2	2	2	0	0	0	0	0	0	0	146	1
49	1	4.3	1	2	2	1	0	0	0	0	0	0	0	153	1
49	1	13.1	2	2	2	1	0	0	0	0	0	0	0	125	2
49	1	9.7	2	2	2	1	2	1	8	0	0	0	0	133	1
49	1	4.9	2	2	2	1	2	1	6	0	0	0	0	108	1
49	1	5.8	2	2	2	1	0	0	0	0	0	0	0	139	2
49	1	4.2	2	2	2	2	0	0	0	0	0	0	0	115	1
50	13	7.2	0	0	0	0	0	0	0	0	0	0	0		
50	13	11.4	0	0	0	0	0	0	0	0	0	0	0		
50	70	125.4	3	2	2	1	1	3	99	1	3	99	1		
50	2	13.3	3	2	2	3	1	3	99	1	3	99	1		
50	1	1.1	3	2	2	2	1	3	99	1	3	99	1		
50	7	13.9	3	2	2	4	1	3	99	1	3	99	1		
50	19	32.5	3	2	2	1	4	1	98	1	1	98	1		
50	11	24.4	3	2	2	1	2	1	98	1	3	99	1		
50	6	6.8	3	2	2	1	3	3	99	1	1	98	1		
50	22	31.5	3	2	3	1	1	3	99	1	3	99	1		
50	1	5.6	3	2	3	3	1	3	99	1	3	99	1		
50	1	0.6	3	1	4	1	1	3	99	1	3	99	1		
50	300	709.8	2	2	2	1	1	3	99	1	3	99	1		
50	15	19.6	2	2	2	3	1	3	99	1	3	99	1		
50	21	113.7	2	2	2	2	1	3	99	1	3	99	1		
50	60	155.7	2	2	2	4	1	3	99	1	3	99	1		
50	8	13	2	2	2	1	4	1	98	1	1	98	1		
50	3	6.6	2	2	2	1	4	2	1	2	1	8	2		
50	1	2.1	2	2	2	1	4	2	1	2	2	1	2		
50	1	0.6	2	2	2	1	4	2	9	2	2	9	2		
50	13	20.5	2	2	2	1	2	1	98	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
50	1	1.9	2	2	2	1	2	2	1	2	3	99	1		
50	5	15.9	2	2	2	1	3	3	99	1	1	98	1		
50	1	4	2	2	2	1	4	1	4	5	1	6	2		
50	1	2.8	2	2	2	1	4	1	6	5	1	6	5		
50	1	1	2	2	2	1	4	2	2	5	2	2	5		
50	1	4.1	2	2	2	1	2	2	9	5	3	99	1		
50	1	4.7	2	2	2	1	2	1	4	5	3	99	1		
50	11	25.9	2	2	5	1	1	3	99	1	3	99	1		
50	2	17.3	2	2	5	3	1	3	99	1	3	99	1		
50	259	477.2	2	2	3	1	1	3	99	1	3	99	1		
50	22	131.2	2	2	3	3	1	3	99	1	3	99	1		
50	12	64.1	2	2	3	2	1	3	99	1	3	99	1		
50	8	40.3	2	2	3	4	1	3	99	1	3	99	1		
50	38	71.7	2	1	4	1	1	3	99	1	3	99	1		
50	35	81.1	1	2	2	1	1	3	99	1	3	99	1		
50	3	2.8	1	2	2	2	1	3	99	1	3	99	1		
50	2	1.8	1	2	2	4	1	3	99	1	3	99	1		
50	3	4.8	1	2	5	1	1	3	99	1	3	99	1		
50	5	8.5	1	2	3	1	1	3	99	1	3	99	1		
50	8	4.6	1	1	4	1	1	3	99	1	3	99	1		
50	1	18.8	2	2	2	1	2	1	6	0	0	0	0	145	1
50	1	9.5	2	2	2	1	4	2	6	0	2	3	0	139	1
50	1	4.3	2	2	3	1	1	3	99	1	3	99	1	145	1
50	1	15.9	2	2	2	2	4	1	4	2	1	4	2	83	1
50	1	5.1	2	2	2	1	0	0	0	0	0	0	0	115	1
50	1	19.8	1	2	2	1	4	1	4	2	1	4	2	114	2
50	1	7.3	2	2	2	1	4	2	9	0	1	1	0	125	1
50	1	8.6	2	2	2	1	1	3	99	1	3	99	1	150	2
50	1	4.2	1	2	2	1	4	2	9	0	2	2	0	90	1
50	1	4.1	2	2	2	1	2	1	6	0	0	0	0	174	1
50	1	3.9	2	2	2	2	4	2	4	2	2	2	0	120	1
50	1	2.1	2	2	2	1	2	2	9	2	0	0	0	157	1
51	11	4.2	0	0	0	0	0	0	0	0	0	0	0		
51	11	6.8	0	0	0	0	0	0	0	0	0	0	0		
51	25	42.4	3	2	2	1	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
51	5	7.8	3	2	2	2	1	3	99	1	3	99	1		
51	9	10.4	3	2	2	4	1	3	99	1	3	99	1		
51	9	12.5	3	2	2	1	4	1	98	1	1	98	1		
51	5	9.4	3	2	2	1	2	1	98	1	3	99	1		
51	2	4.8	3	2	2	1	4	1	1	5	1	1	5		
51	1	1.2	3	2	2	1	4	1	2	5	1	2	5		
51	4	8.7	3	2	2	1	2	1	2	5	3	99	1		
51	4	8.9	3	2	2	1	2	1	1	5	3	99	1		
51	2	1.6	3	2	2	1	3	3	99	1	1	2	5		
51	2	4.8	3	2	2	1	4	1	2	2	1	1	5		
51	1	0.8	3	2	2	1	3	3	99	1	1	1	5		
51	15	32	3	2	3	1	1	3	99	1	3	99	1		
51	2	3	3	2	3	2	1	3	99	1	3	99	1		
51	1	1.7	3	1	4	1	1	3	99	1	3	99	1		
51	1	0.4	3	1	4	1	4	2	2	5	2	2	5		
51	205	442	2	2	2	1	1	3	99	1	3	99	1		
51	19	99.6	2	2	2	3	1	3	99	1	3	99	1		
51	20	21	2	2	2	2	1	3	99	1	3	99	1		
51	29	82.9	2	2	2	4	1	3	99	1	3	99	1		
51	13	17.3	2	2	2	1	4	1	98	1	1	98	1		
51	1	1	2	2	2	1	4	2	9	2	2	9	2		
51	1	0.6	2	2	2	1	4	2	9	0	1	1	0		
51	12	19.3	2	2	2	1	2	1	98	1	3	99	1		
51	1	2.3	2	2	2	1	2	2	9	0	3	99	1		
51	1	7.7	2	2	2	1	2	2	4	2	3	99	1		
51	1	1.4	2	2	2	1	3	3	99	1	1	1	2		
51	2	2.5	2	2	2	1	4	1	4	5	1	4	5		
51	2	2.9	2	2	2	1	4	1	8	5	1	8	5		
51	1	3.2	2	2	2	1	4	1	6	5	1	3	5		
51	2	1.3	2	2	2	1	4	2	9	4	2	9	4		
51	1	4.6	2	2	2	1	4	1	2	5	1	2	5		
51	6	14.9	2	2	2	1	2	1	4	5	3	99	1		
51	1	4.4	2	2	2	1	2	2	2	5	3	99	1		
51	1	2.1	2	2	2	1	4	1	8	5	1	8	2		
51	1	1.6	2	2	2	1	3	0	0	0	1	5	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
51	1	0.6	2	2	2	1	4	1	2	2	1	2	5		
51	18	40.3	2	2	5	1	1	3	99	1	3	99	1		
51	2	6.1	2	2	5	3	1	3	99	1	3	99	1		
51	78	240.7	2	2	3	1	1	3	99	1	3	99	1		
51	16	85.6	2	2	3	3	1	3	99	1	3	99	1		
51	2	1.8	2	2	3	2	1	3	99	1	3	99	1		
51	18	38.7	2	1	4	1	1	3	99	1	3	99	1		
51	1	1.3	2	1	4	1	4	2	9	2	1	9	2		
51	19	34.1	1	2	2	1	1	3	99	1	3	99	1		
51	2	2.1	1	2	2	2	1	3	99	1	3	99	1		
51	1	1.3	1	2	2	4	1	3	99	1	3	99	1		
51	2	2.5	1	2	2	1	4	1	98	1	1	98	1		
51	1	0.8	1	2	2	1	2	2	4	2	3	99	1		
51	1	2.2	1	2	2	1	4	1	9	5	1	9	5		
51	1	3.1	1	1	4	1	1	3	99	1	3	99	1		
51	1	25.6	2	2	2	1	2	1	4	0	0	0	0	165	1
51	1	31.1	2	2	2	1	2	1	6	0	0	0	0	180	2
51	1	16.5	3	2	2	1	4	1	2	2	1	2	2	130	0
51	1	14.3	2	2	2	1	4	1	3	2	1	3	2	118	1
51	1	9	2	2	2	1	4	1	2	2	1	2	2	109	1
51	1	9.8	2	2	2	1	4	1	8	2	1	8	2	154	2
51	1	1.8	2	2	2	1	0	0	0	0	0	0	0	139	2
51	1	2.9	2	2	2	1	0	0	0	0	0	0	0	129	1
51	1	2.7	2	2	2	1	2	1	9	2	0	0	0	107	1
52	20	37.6	3	2	2	1	1	3	99	1	3	99	1		
52	4	3.9	3	2	2	1	4	1	98	1	1	98	1		
52	2	2.8	3	2	2	1	2	1	98	1	3	99	1		
52	6	9.1	3	2	2	1	2	2	2	2	3	99	1		
52	11	22	3	2	2	1	2	1	98	1	3	99	1		
52	10	18.8	3	2	2	1	4	1	1	5	1	1	5		
52	3	5.9	3	2	2	1	2	1	98	1	3	99	1		
52	2	8.8	3	2	2	1	2	2	2	5	3	99	1		
52	3	3.8	3	2	3	1	1	3	99	1	3	99	1		
52	1176	1230.7	2	2	2	1	1	3	99	1	3	99	1		
52	1	12.1	2	2	2	1	1	3	99	1	3	99	1	173	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
52	1	3.6	2	2	2	1	1	3	99	1	3	99	1	150	1
52	1	5.6	2	2	2	1	1	3	99	1	3	99	1	180	2
52	12	52.8	2	2	2	3	1	3	99	1	3	99	1		
52	85	97.2	2	2	2	2	1	3	99	1	3	99	1		
52	98	96.8	2	2	2	4	1	3	99	1	3	99	1		
52	10	17.8	2	2	2	1	4	1	98	1	1	98	1		
52	2	3.2	2	2	2	1	4	2	8	2	2	8	2		
52	2	2.7	2	2	2	1	4	2	4	2	2	4	2		
52	1	2.5	2	2	2	1	4	1	7	2	2	8	2		
52	1	2.4	2	2	2	1	4	2	4	2	2	8	2		
52	1	3.5	2	2	2	1	4	2	8	2	2	8	2		
52	22	43.8	2	2	2	1	2	1	98	1	3	99	1		
52	1	7.9	2	2	2	1	2	2	2	2	3	99	1		
52	1	1.2	2	2	2	1	2	2	5	2	3	99	1		
52	1	17.8	2	2	2	1	2	2	9	0	3	99	1		
52	1	16	2	2	2	1	2	2	8	2	3	99	1	180	1
52	9	10	2	2	2	1	3	3	99	1	1	98	1		
52	1	1.2	2	2	2	1	3	3	99	1	2	4	2		
52	1	1.2	2	2	2	1	3	3	99	1	2	1	2		
52	1	1.5	2	2	2	1	3	3	99	1	2	8	2		
52	1	0.3	2	2	2	1	3	3	99	1	2	9	2		
52	2	2.1	2	2	2	1	4	2	2	5	2	2	5		
52	2	3.1	2	2	2	1	2	2	5	5	3	99	1		
52	1	1	2	2	2	1	2	2	4	5	3	99	1		
52	1	1.8	2	2	2	1	2	2	4	5	3	99	1		
52	1	1.5	2	2	2	1	4	2	8	2	2	1	5		
52	1	1.3	2	2	2	1	4	2	2	2	2	8	5		
52	1	2.9	2	2	5	1	1	3	99	1	3	99	1		
52	270	268.7	2	2	3	1	1	3	99	1	3	99	1		
52	11	50.8	2	2	3	3	1	3	99	1	3	99	1		
52	16	11.7	2	2	3	2	1	3	99	1	3	99	1		
52	10	14.5	2	2	3	4	1	3	99	1	3	99	1		
52	7	48	2	1	2	1	1	3	99	1	3	99	1		
52	2	10.6	2	1	5	1	1	3	99	1	3	99	1		
52	53	61.2	2	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
52	3	3.8	2	1	4	1	4	2	4	2	2	4	2		
52	1	2.3	2	1	4	1	2	2	9	2	3	99	1		
52	107	71.5	1	2	2	1	1	3	99	1	3	99	1		
52	1	0.3	1	2	2	3	1	3	99	1	3	99	1		
52	14	10.9	1	2	2	2	1	3	99	1	3	99	1		
52	1	0.8	1	2	2	4	1	3	99	1	3	99	1		
52	2	6.5	1	2	2	1	2	2	8	2	3	99	1		
52	2	2.9	1	2	2	1	2	1	98	2	3	99	1		
52	5	20.8	1	1	2	1	1	3	99	1	3	99	1		
52	15	13.2	1	1	4	1	1	3	99	1	3	99	1		
53	6	8.5	3	2	2	1	1	3	99	1	3	99	1		
53	1	1	3	2	2	1	2	1	98	1	3	99	1		
53	5	17.4	3	2	2	1	2	1	98	1	3	99	1		
53	1	1.8	3	2	2	1	4	2	1	5	2	1	5		
53	2	5.2	3	2	2	1	2	2	2	5	3	99	1		
53	2	2.6	3	1	4	1	1	3	99	1	3	99	1		
53	294	442.3	2	2	2	1	1	3	99	1	3	99	1		
53	1	20.1	2	2	2	1	1	3	99	1	3	99	1	180	2
53	1	4.9	2	2	2	1	1	3	99	1	3	99	1	162	1
53	2	5.8	2	2	2	3	1	3	99	1	3	99	1		
53	6	15.6	2	2	2	2	1	3	99	1	3	99	1		
53	19	37.3	2	2	2	4	1	3	99	1	3	99	1		
53	5	11.9	2	2	2	1	4	1	98	1	1	98	1		
53	1	7.6	2	2	2	1	4	2	11	2	1	8	2		
53	1	1.9	2	2	2	1	4	2	11	2	2	11	2		
53	1	1.6	2	2	2	1	4	1	4	2	2	4	2		
53	1	8.9	2	2	2	1	2	2	11	2	3	99	1		
53	2	9.5	2	2	2	1	2	2	4	2	3	99	1		
53	1	3.6	2	2	2	1	2	2	2	2	3	99	1		
53	1	9.5	2	2	2	1	2	1	4	2	3	99	1	167	1
53	1	2.5	2	2	2	1	4	2	4	5	2	8	5		
53	3	4.2	2	2	2	1	2	2	4	5	3	99	1		
53	1	1.3	2	2	5	1	1	3	99	1	3	99	1		
53	87	135.7	2	2	3	1	1	3	99	1	3	99	1		
53	9	52	2	2	3	3	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
53	9	18.2	2	2	3	2	1	3	99	1	3	99	1		
53	1	1	2	2	3	4	1	3	99	1	3	99	1		
53	15	60.2	2	1	2	1	1	3	99	1	3	99	1		
53	14	20.6	2	1	4	1	1	3	99	1	3	99	1		
53	27	64.2	1	2	2	1	1	3	99	1	3	99	1		
53	4	4.4	1	2	2	2	1	3	99	1	3	99	1		
53	1	0.6	1	2	2	4	1	3	99	1	3	99	1		
53	3	13.1	1	1	2	1	1	3	99	1	3	99	1		
53	2	17.8	1	1	2	1	2	1	7	2	3	99	1		
54	12	11.7	3	2	2	1	1	3	99	1	3	99	1		
54	2	3.4	3	2	2	1	4	1	98	1	1	98	1		
54	1	0.7	3	2	2	1	4	2	1	5	2	2	5		
54	53	80.2	2	2	2	1	1	3	99	1	3	99	1		
54	4	7.1	2	2	2	2	1	3	99	1	3	99	1		
54	1	2.2	2	2	2	4	1	3	99	1	3	99	1		
54	1	1.7	2	2	2	1	4	2	4	2	2	4	2		
54	1	1.3	2	2	2	1	4	2	2	2	2	2	2		
54	2	2.2	2	2	2	1	4	2	4	2	2	4	2		
54	1	7.1	2	2	2	1	4	1	4	2	1	1	2		
54	1	11.8	2	2	2	1	2	2	4	2	3	99	1		
54	21	30.1	2	2	3	1	1	3	99	1	3	99	1		
54	3	13.4	2	2	3	3	1	3	99	1	3	99	1		
54	3	4.3	2	1	4	1	1	3	99	1	3	99	1		
54	3	4.6	1	2	2	1	1	3	99	1	3	99	1		
54	1	1	1	2	2	2	1	3	99	1	3	99	1		
54	1	0.8	1	2	2	4	1	3	99	1	3	99	1		
54	16	84	1	1	2	1	1	3	99	1	3	99	1		
54	1	0.7	1	1	4	1	1	3	99	1	3	99	1		
55	1	1.5	3	2	2	2	1	3	99	1	3	99	1		
55	2	1.4	3	2	2	1	2	2	1	5	3	99	1		
55	16	31.8	2	2	2	1	1	3	99	1	3	99	1		
55	11	19.7	2	2	3	1	1	3	99	1	3	99	1		
55	2	5.8	2	1	2	1	1	3	99	1	3	99	1		
55	2	4	1	2	2	1	1	3	99	1	3	99	1		
55	1	3.4	1	2	2	1	4	1	8	2	1	8	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
55	1	2.8	1	2	2	1	4	2	4	2	1	8	2		
55	2	8.6	1	1	2	1	1	3	99	1	3	99	1		
56	3	1	0	0	0	0	0	0	0	0	0	0	0		
56	91	182.9	2	2	2	1	1	3	99	1	3	99	1		
56	41	24.2	2	2	3	1	1	3	99	1	3	99	1		
56	27	9.7	1	2	2	1	1	3	99	1	3	99	1		
56	4	10.7	1	2	2	2	1	3	99	1	3	99	1		
57	1	3.3	3	2	2	1	4	1	98	2	1	98	2		
57	2	2.8	3	2	2	1	2	1	98	1	3	99	1		
57	1	1	3	2	2	1	4	2	1	5	2	1	5		
57	1	0.8	3	2	2	1	4	2	2	2	2	1	5		
57	1	0.8	3	1	4	1	1	3	99	1	3	99	1		
57	96	170.2	2	2	2	1	1	3	99	1	3	99	1		
57	1	23.8	2	2	2	1	1	3	99	1	3	99	1	124	1
57	4	12.1	2	2	2	3	1	3	99	1	3	99	1		
57	12	20	2	2	2	2	1	3	99	1	3	99	1		
57	7	10.5	2	2	2	4	1	3	99	1	3	99	1		
57	1	1.2	2	2	2	1	4	1	4	2	2	1	2		
57	1	5.8	2	2	2	1	4	1	4	2	1	4	2		
57	1	1.3	2	2	2	1	4	1	8	2	2	4	2		
57	2	5.6	2	2	2	1	4	2	8	2	2	8	2		
57	1	5.2	2	2	2	1	4	2	6	2	2	6	2	122	2
57	1	10.7	2	2	2	1	2	2	1	2	3	99	1		
57	2	3.8	2	2	2	1	2	2	4	2	3	99	1		
57	1	1.3	2	2	2	1	2	2	1	2	3	99	1		
57	1	1.9	2	2	2	1	2	1	6	2	3	99	1	160	1
57	5	25.8	2	1	2	1	1	3	99	1	3	99	1		
57	3	15.3	2	1	4	1	1	3	99	1	3	99	1		
57	2	5.2	2	1	4	1	4	2	8	2	2	8	2		
57	11	17.1	1	2	2	1	1	3	99	1	3	99	1		
57	1	0.8	1	2	2	2	1	3	99	1	3	99	1		
57	2	6.5	1	1	2	1	1	3	99	1	3	99	1		
57	2	3	1	1	4	1	1	3	99	1	3	99	1		
58	1	0.3	3	2	2	1	1	3	99	1	3	99	1		
58	1	3.5	3	2	3	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
58	25	62.2	2	2	2	1	1	3	99	1	3	99	1		
58	5	5.7	2	2	2	2	1	3	99	1	3	99	1		
58	2	4.7	2	2	2	1	2	2	4	2	3	99	1		
58	11	13.3	2	2	3	1	1	3	99	1	3	99	1		
58	2	1.6	2	2	3	3	1	3	99	1	3	99	1		
58	1	3.8	2	2	3	2	1	3	99	1	3	99	1		
58	3	8.5	2	1	2	1	1	3	99	1	3	99	1		
58	2	4	2	1	4	1	1	3	99	1	3	99	1		
58	1	0.7	1	2	2	1	1	3	99	1	3	99	1		
58	1	4.5	1	2	5	1	1	3	99	1	3	99	1		
59	1	0.3	3	2	2	1	1	3	99	1	3	99	1		
59	1	0.5	2	2	2	1	1	3	99	1	3	99	1		
59	1	0.7	2	2	3	1	1	3	99	1	3	99	1		
60	1	2	0	0	0	0	0	0	0	0	0	0	0		
60	2	2.5	3	2	2	1	1	3	99	1	3	99	1		
60	64	149.3	2	2	2	1	1	3	99	1	3	99	1		
60	1	4.6	2	2	2	1	1	3	99	1	3	99	1	159	1
60	1	3.9	2	2	2	1	1	3	99	1	3	99	1	148	1
60	5	6.6	2	2	2	2	1	3	99	1	3	99	1		
60	3	3.6	2	2	2	4	1	3	99	1	3	99	1		
60	1	3.7	2	2	2	1	4	2	1	2	2	1	2		
60	1	2.3	2	2	2	1	4	1	4	2	1	4	2		
60	1	3.7	2	2	2	1	2	2	8	2	3	99	1	109	1
60	36	99.1	2	2	3	1	1	3	99	1	3	99	1		
60	5	11	2	2	3	2	1	3	99	1	3	99	1		
60	2	10.1	2	1	2	1	1	3	99	1	3	99	1		
60	5	3.4	2	1	4	1	1	3	99	1	3	99	1		
60	15	17.1	1	2	2	1	1	3	99	1	3	99	1		
60	1	0.5	1	2	2	4	1	3	99	1	3	99	1		
60	4	11.2	1	2	2	1	4	1	98	1	1	98	1		
60	1	8.9	1	2	2	1	2	2	4	2	3	99	1	153	1
61	7	10.4	3	2	2	1	1	3	99	1	3	99	1		
61	16	13	3	2	2	1	1	3	99	1	3	99	1		
61	1	0.9	3	2	2	2	1	3	99	1	3	99	1		
61	1	3	3	2	2	4	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
61	1	3.7	3	2	2	1	4	1	98	1	1	98	1		
61	3	4.7	3	2	2	1	2	2	1	2	3	99	1		
61	1	3.9	3	2	2	1	2	2	1	5	3	99	1		
61	1	1.4	3	2	3	1	1	3	99	1	3	99	1		
61	1	1.5	3	1	4	1	1	3	99	1	3	99	1		
61	297	1535.9	2	2	2	1	1	3	99	1	3	99	1		
61	1	8.3	2	2	2	1	1	3	99	1	3	99	1	133	1
61	1	5	2	2	2	1	1	3	99	1	3	99	1	123	0
61	1	13.4	2	2	2	1	1	3	99	1	3	99	1	130	0
61	1	6.6	2	2	2	1	1	3	99	1	3	99	1	113	1
61	138	183	2	2	2	1	1	3	99	1	3	99	1		
61	1	8.3	2	2	2	1	1	3	99	1	3	99	1		
61	1	7.8	2	2	2	3	1	3	99	1	3	99	1		
61	41	78.6	2	2	2	2	1	3	99	1	3	99	1		
61	12	14.8	2	2	2	2	1	3	99	1	3	99	1		
61	27	49.7	2	2	2	4	1	3	99	1	3	99	1		
61	5	8	2	2	2	4	1	3	99	1	3	99	1		
61	1	8.4	2	2	2	1	4	1	98	1	1	98	1		
61	1	0.8	2	2	2	1	4	2	2	2	2	2	2		
61	1	0.8	2	2	2	1	4	2	1	2	1	4	2		
61	1	21.6	2	2	2	1	4	2	4	2	2	4	2	138	2
61	1	2.9	2	2	2	1	2	2	8	2	3	99	1		
61	1	1	2	2	2	1	2	1	98	1	3	99	1		
61	217	302.5	2	2	3	1	1	3	99	1	3	99	1		
61	1	4.6	2	2	3	1	1	3	99	1	3	99	1	95	0
61	128	132.6	2	2	3	1	1	3	99	1	3	99	1		
61	8	16.9	2	2	3	2	1	3	99	1	3	99	1		
61	8	10.1	2	2	3	2	1	3	99	1	3	99	1		
61	1	3.1	2	2	3	4	1	3	99	1	3	99	1		
61	16	187.4	2	1	2	1	1	3	99	1	3	99	1		
61	3	4.7	2	1	2	1	1	3	99	1	3	99	1		
61	23	45.6	2	1	4	1	1	3	99	1	3	99	1		
61	2	4.1	2	1	4	1	1	3	99	1	3	99	1		
61	66	85.9	1	2	2	1	1	3	99	1	3	99	1		
61	47	49.8	1	2	2	1	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
61	22	25.1	1	2	2	2	1	3	99	1	3	99	1		
61	3	1.3	1	2	2	2	1	3	99	1	3	99	1		
61	5	8	1	2	2	4	1	3	99	1	3	99	1		
61	1	3	1	2	2	4	1	3	99	1	3	99	1		
61	1	0.4	1	2	2	1	4	2	4	2	2	9	2		
61	1	6.9	1	2	2	1	2	2	8	2	3	99	1	156	1
61	7	11	1	2	3	1	1	3	99	1	3	99	1		
61	1	13.7	1	1	2	1	1	3	99	1	3	99	1		
61	8	11.7	1	1	4	1	1	3	99	1	3	99	1		
61	2	1.2	1	1	4	1	1	3	99	1	3	99	1		
62	28	4.9	0	0	0	0	0	0	0	0	0	0	0		
62	21	49.4	3	2	2	1	1	3	99	1	3	99	1		
62	35	36.8	3	2	2	1	1	3	99	1	3	99	1		
62	2	2.7	3	2	2	2	1	3	99	1	3	99	1		
62	4	9.3	3	2	2	1	4	1	98	1	1	98	1		
62	1	0.7	3	2	2	1	4	2	1	5	2	1	5		
62	3	7.5	3	2	3	1	1	3	99	1	3	99	1		
62	1	0.3	3	1	4	1	1	0	0	0	0	0	0		
62	400	580.5	2	2	2	1	1	3	99	1	3	99	1		
62	1	46.5	2	2	2	1	1	3	99	1	3	99	1	135	3
62	1	46.5	2	2	2	1	1	3	99	1	3	99	1	109	0
62	1	14.7	2	2	2	1	1	3	99	1	3	99	1	92	1
62	1	13.6	2	2	2	1	2	2	8	0	3	99	1	128	2
62	1	13.7	2	2	2	1	1	3	99	1	3	99	1	160	2
62	1	5.8	2	2	2	1	1	3	99	1	3	99	1	88	0
62	124	114	2	2	2	1	1	3	99	1	3	99	1		
62	41	68.7	2	2	2	2	1	3	99	1	3	99	1		
62	16	14.4	2	2	2	2	1	3	99	1	3	99	1		
62	21	55.5	2	2	2	4	1	3	99	1	3	99	1		
62	6	15	2	2	2	4	1	3	99	1	3	99	1		
62	2	9.8	2	2	2	1	4	2	8	2	2	8	2		
62	1	12.8	2	2	2	1	4	2	8	0	2	8	0	140	2
62	1	0.4	2	2	2	1	4	1	98	1	1	98	1		
62	1	1	2	2	2	1	2	2	1	2	3	99	1		
62	1	5.9	2	2	2	1	2	2	4	0	3	99	1	123	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
62	2	1.3	2	2	2	1	3	3	99	1	1	98	1		
62	280	410.9	2	2	3	1	1	3	99	1	3	99	1		
62	123	159.6	2	2	3	1	1	3	99	1	3	99	1		
62	5	32	2	2	3	3	1	3	99	1	3	99	1		
62	2	2.3	2	2	3	3	1	3	99	1	3	99	1		
62	13	16.3	2	2	3	2	1	3	99	1	3	99	1		
62	6	12.8	2	2	3	2	1	3	99	1	3	99	1		
62	11	142.6	2	1	2	1	1	3	99	1	3	99	1		
62	1	4.5	2	1	2	1	1	3	99	1	3	99	1		
62	1	2.2	2	1	2	1	4	2	9	0	1	7	2		
62	24	39.8	2	1	4	1	1	3	99	1	3	99	1		
62	7	12.8	2	1	4	1	1	3	99	1	3	99	1		
62	158	191.3	1	2	2	1	1	3	99	1	3	99	1		
62	68	86.6	1	2	2	1	1	3	99	1	3	99	1		
62	2	5.3	1	2	2	1	1	3	99	1	3	99	1		
62	2	4	1	2	2	3	1	3	99	1	3	99	1		
62	29	25.3	1	2	2	2	1	3	99	1	3	99	1		
62	10	5.5	1	2	2	2	1	3	99	1	3	99	1		
62	4	8.1	1	2	2	4	1	3	99	1	3	99	1		
62	3	2.6	1	2	2	4	1	3	99	1	3	99	1		
62	1	6	1	2	5	1	1	3	99	1	3	99	1		
62	2	3.1	1	2	5	1	1	3	99	1	3	99	1		
62	7	10.2	1	2	3	1	1	3	99	1	3	99	1		
62	1	0.5	1	2	3	1	1	3	99	1	3	99	1		
62	1	2.3	1	1	2	1	1	3	99	1	3	99	1		
62	24	23.1	1	1	4	1	1	3	99	1	3	99	1		
62	1	0.8	1	1	4	1	1	3	99	1	3	99	1		
63	2	6.4	3	2	2	1	1	3	99	1	3	99	1		
63	1	0.4	3	2	2	2	1	3	99	1	3	99	1		
63	2	1.7	3	2	2	4	1	3	99	1	3	99	1		
63	1	4.7	3	2	2	1	4	1	1	5	1	1	5		
63	21	57.5	2	2	2	1	1	3	99	1	3	99	1		
63	1	14.1	2	2	2	1	1	3	99	1	3	99	1	108	1
63	7	106.6	2	2	2	1	1	3	99	1	3	99	1		
63	59	29.4	2	2	2	1	1	3	99	1	3	99	1		

(continued)

**Table L.1.** continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
63	1	1.6	2	2	2	3	1	3	99	1	3	99	1		
63	1	1.5	2	2	2	3	1	3	99	1	3	99	1		
63	3	8.5	2	2	2	2	1	3	99	1	3	99	1		
63	1	35.1	2	2	2	2	1	3	99	1	3	99	1	145	3
63	2	7.6	2	2	2	2	1	3	99	1	3	99	1		
63	12	8.1	2	2	2	2	1	3	99	1	3	99	1		
63	7	12.4	2	2	2	4	1	3	99	1	3	99	1		
63	2	43	2	2	2	4	1	3	99	1	3	99	1		
63	2	9.4	2	2	2	4	1	3	99	1	3	99	1		
63	3	2.6	2	2	2	4	1	3	99	1	3	99	1		
63	1	0.3	2	2	2	1	4	1	98	1	1	98	1		
63	1	0.9	2	2	2	1	2	1	98	1	3	99	1		
63	3	12	2	2	2	1	2	2	4	5	3	99	1		
63	1	1.1	2	2	2	1	2	1	98	1	3	99	1		
63	1	3.5	2	2	5	1	1	3	99	1	3	99	1		
63	18	50.3	2	2	3	1	1	3	99	1	3	99	1		
63	45	25.6	2	2	3	1	1	3	99	1	3	99	1		
63	1	1.4	2	2	3	2	1	3	99	1	3	99	1		
63	23	32.5	2	2	3	2	1	3	99	1	3	99	1		
63	2	0.8	2	2	3	2	1	3	99	1	3	99	1		
63	1	6.4	2	2	3	4	1	3	99	1	3	99	1		
63	2	35.6	2	1	2	1	1	3	99	1	3	99	1		
63	3	1.5	2	1	2	1	1	3	99	1	3	99	1		
63	1	0.5	2	1	4	1	1	3	99	1	3	99	1		
63	16	8.8	1	2	2	1	1	3	99	1	3	99	1		
63	1	0.7	1	2	2	3	1	3	99	1	3	99	1		
63	2	2	1	2	2	2	1	3	99	1	3	99	1		
63	6	2.2	1	2	2	2	1	3	99	1	3	99	1		
63	2	2.6	1	2	2	4	1	3	99	1	3	99	1		
63	2	0.9	1	2	2	4	1	3	99	1	3	99	1		
63	2	2.4	1	2	3	1	1	3	99	1	3	99	1		
63	2	9.2	1	1	4	1	1	3	99	1	3	99	1		
63	2	1.9	1	1	4	1	1	3	99	1	3	99	1		
64	13	18.8	3	2	2	1	1	3	99	1	3	99	1		
64	16	10.8	3	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
64	1	0.5	3	2	2	2	1	3	99	1	3	99	1		
64	1	0.4	3	2	2	2	1	3	99	1	3	99	1		
64	1	4.4	3	2	2	1	4	1	98	1	1	98	1		
64	1	3	3	2	2	1	2	2	1	2	3	99	1		
64	6	17.2	3	2	3	1	1	3	99	1	3	99	1		
64	1	0.3	3	1	4	1	1	3	99	1	3	99	1		
64	226	514.2	2	2	2	1	1	3	99	1	3	99	1		
64	1	43.5	2	2	2	1	1	3	99	1	3	99	1	166	1
64	1	32.5	2	2	2	1	1	3	99	1	3	99	1	180	2
64	1	47.8	2	2	2	1	1	3	99	1	3	99	1	150	2
64	1	8.4	2	2	2	1	1	3	99	1	3	99	1	136	1
64	1	7.2	2	2	2	1	1	3	99	1	3	99	1	146	1
64	1	7.3	2	2	2	1	1	0	0	0	0	0	0	122	1
64	1	8.1	2	2	2	1	1	3	99	1	3	99	1	140	2
64	1	171	2	2	2	1	1	3	99	1	3	99	1		
64	125	196.7	2	2	2	1	1	3	99	1	3	99	1		
64	69	112.9	2	2	2	2	1	3	99	1	3	99	1		
64	25	30.8	2	2	2	2	1	3	99	1	3	99	1		
64	39	91.1	2	2	2	4	1	3	99	1	3	99	1		
64	12	19.3	2	2	2	4	1	3	99	1	3	99	1		
64	1	2.5	2	2	2	1	4	2	6	2	2	6	2		
64	1	0.9	2	2	2	1	4	2	1	2	2	1	2		
64	2	3.4	2	2	2	1	2	2	1	2	3	99	1		
64	3	3.5	2	2	2	1	2	1	98	1	3	99	1		
64	3	9.6	2	2	5	1	1	3	99	1	3	99	1		
64	320	578.7	2	2	3	1	1	3	99	1	3	99	1		
64	146	164.1	2	2	3	1	1	3	99	1	3	99	1		
64	6	13.9	2	2	3	3	1	3	99	1	3	99	1		
64	3	2.9	2	2	3	3	1	3	99	1	3	99	1		
64	20	29	2	2	3	2	1	3	99	1	3	99	1		
64	12	20.6	2	2	3	2	1	3	99	1	3	99	1		
64	5	6.4	2	2	3	4	1	3	99	1	3	99	1		
64	25	171.4	2	1	2	1	1	3	99	1	3	99	1		
64	3	4.9	2	1	2	1	1	3	99	1	3	99	1		
64	4	43.9	2	1	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
64	18	20.9	2	1	4	1	1	3	99	1	3	99	1		
64	1	0.6	2	1	4	1	1	3	99	1	3	99	1		
64	78	107.1	1	2	2	1	1	3	99	1	3	99	1		
64	44	49	1	2	2	1	1	3	99	1	3	99	1		
64	1	3.7	1	2	2	1	1	3	99	1	3	99	1		
64	19	20.9	1	2	2	2	1	3	99	1	3	99	1		
64	4	3.5	1	2	2	2	1	3	99	1	3	99	1		
64	8	8	1	2	2	4	1	3	99	1	3	99	1		
64	1	6.1	1	2	2	4	1	3	99	1	3	99	1		
64	1	9.7	1	2	2	1	4	1	98	1	1	98	1		
64	1	5.8	1	2	5	1	1	3	99	1	3	99	1		
64	1	3.1	1	2	5	1	1	3	99	1	3	99	1		
64	12	124.2	1	2	3	1	1	3	99	1	3	99	1		
64	6	7.6	1	2	3	1	1	3	99	1	3	99	1		
64	21	19.7	1	1	4	1	1	3	99	1	3	99	1		
64	1	0.4	1	1	4	1	1	3	99	1	3	99	1		
65	1	6.8	3	2	2	2	1	3	99	1	3	99	1		
65	2	0.5	3	2	2	2	1	3	99	1	3	99	1		
65	1	1.1	3	2	2	1	4	2	1	0	2	1	0		
65	3	1.3	3	2	2	1	2	1	98	1	3	99	1		
65	1	1.4	3	2	3	1	1	3	99	1	3	99	1		
65	6	25.4	2	2	2	1	1	3	99	1	3	99	1		
65	1	16.3	2	2	2	1	1	3	99	1	3	99	1	112	1
65	21	17.9	2	2	2	1	1	3	99	1	3	99	1		
65	3	15.5	2	2	2	2	1	3	99	1	3	99	1		
65	9	8.3	2	2	2	2	1	3	99	1	3	99	1		
65	4	21.5	2	2	2	4	1	3	99	1	3	99	1		
65	3	3.2	2	2	2	4	1	3	99	1	3	99	1		
65	6	35.5	2	2	2	1	2	2	4	2	3	99	1		
65	7	7.1	2	2	2	1	2	1	98	1	3	99	1		
65	3	1.7	2	2	2	1	4	1	98	1	1	98	1		
65	1	0.9	2	2	2	1	2	1	98	1	3	99	1		
65	6	19	2	2	3	1	1	3	99	1	3	99	1		
65	19	23.1	2	2	3	1	1	3	99	1	3	99	1		
65	1	1.6	2	2	3	3	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
65	3	2.3	2	2	3	2	1	3	99	1	3	99	1		
65	1	2.6	2	1	2	1	1	3	99	1	3	99	1		
65	1	0.5	2	1	2	1	1	3	99	1	3	99	1		
65	3	1.3	2	1	4	1	1	3	99	1	3	99	1		
65	2	6.1	1	2	2	1	1	3	99	1	3	99	1		
65	13	6.2	1	2	2	1	1	3	99	1	3	99	1		
65	3	2.2	1	2	2	2	1	3	99	1	3	99	1		
65	1	3.7	1	2	2	4	1	3	99	1	3	99	1		
65	1	2.6	1	2	2	1	4	2	9	2	1	7	2		
65	1	12.9	1	2	2	1	2	1	4	2	3	99	1	162	1
66	17	27.6	3	2	2	1	1	3	99	1	3	99	1		
66	14	28.2	3	2	2	1	1	3	99	1	3	99	1		
66	8	14.6	3	2	2	1	1	3	99	1	3	99	1		
66	1	0.7	3	2	2	4	1	3	99	1	3	99	1		
66	1	0.9	3	2	2	4	1	3	99	1	3	99	1		
66	13	38.3	3	2	2	1	4	1	98	1	1	98	1		
66	1	10	3	2	2	1	4	2	1	5	2	2	2	109	0
66	1	3.7	3	2	2	1	4	1	98	1	1	98	1		
66	1	2	3	2	2	1	4	2	4	2	1	2	2		
66	1	2.3	3	2	2	1	4	2	1	2	2	1	2	180	1
66	5	6.9	3	2	2	1	4	1	98	1	1	98	1		
66	7	11.5	3	2	2	1	2	1	98	1	3	99	1		
66	8	37.4	3	2	2	1	2	2	1	2	3	99	1		
66	1	0.5	3	2	2	1	2	1	98	1	3	99	1		
66	3	3.9	3	2	2	1	2	2	1	2	3	99	1		
66	3	3.8	3	2	2	1	2	1	98	1	3	99	1		
66	1	2.7	3	2	2	1	2	2	4	2	3	99	1	90	12
66	3	1.3	3	2	2	1	2	1	98	1	3	99	1		
66	3	5.9	3	2	2	1	3	3	99	1	2	1	2		
66	3	7.9	3	2	2	1	4	2	1	5	2	1	5		
66	1	1.6	3	2	2	1	4	1	2	5	1	2	5		
66	4	15.2	3	2	2	1	4	2	1	5	1	2	2		
66	1	1	3	2	2	1	3	3	99	1	2	1	5		
66	6	9.9	3	2	3	1	1	3	99	1	3	99	1		
66	1	0.5	3	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
66	2	0.8	3	1	4	1	1	3	99	1	3	99	1		
66	237	545.3	2	2	2	1	1	3	99	1	3	99	1		
66	1	9	2	2	2	1	1	3	99	1	3	99	1	163	1
66	247	423.7	2	2	2	1	1	3	99	1	3	99	1		
66	1	18.5	2	2	2	1	1	3	99	1	3	99	1	91	0
66	1	8.6	2	2	2	1	1	3	99	1	3	99	1	180	1
66	1	4.2	2	2	2	1	1	3	99	1	3	99	1	180	1
66	1	6.1	2	2	2	1	1	3	99	1	3	99	1	154	1
66	1	2.4	2	2	2	1	1	3	99	1	3	99	1	79	0
66	1	3.5	2	2	2	1	1	3	99	1	3	99	1	160	1
66	101	78.5	2	2	2	1	1	3	99	1	3	99	1		
66	4	135	2	2	2	1	1	3	99	1	3	99	1		
66	9	164.5	2	2	2	3	1	3	99	1	3	99	1		
66	1	4.5	2	2	2	3	1	3	99	1	3	99	1		
66	37	87.6	2	2	2	2	1	3	99	1	3	99	1		
66	1	15	2	2	2	2	1	3	99	1	3	99	1	111	1
66	37	82.6	2	2	2	2	1	3	99	1	3	99	1		
66	15	13	2	2	2	2	1	3	99	1	3	99	1		
66	42	106.6	2	2	2	4	1	3	99	1	3	99	1		
66	28	61.4	2	2	2	4	1	3	99	1	3	99	1		
66	4	10.3	2	2	2	4	1	3	99	1	3	99	1		
66	3	25.1	2	2	2	1	4	1	98	1	1	98	1		
66	2	5.8	2	2	2	1	4	2	2	2	2	4	2		
66	1	2	2	2	2	1	4	2	6	2	2	6	2		
66	1	17	2	2	2	1	4	2	4	2	2	2	2	118	0
66	1	5.8	2	2	2	1	4	2	4	2	2	1	2	180	1
66	1	7.7	2	2	2	1	4	2	2	2	2	2	2	126	1
66	1	6	2	2	2	1	4	2	2	2	2	2	2	155	1
66	1	7.4	2	2	2	1	4	2	2	2	2	2	2	140	1
66	4	9.7	2	2	2	1	4	1	98	1	1	98	1		
66	2	2.3	2	2	2	1	4	2	4	2	2	4	2		
66	1	1.3	2	2	2	1	4	2	8	2	2	8	2		
66	1	0.9	2	2	2	1	4	2	4	2	2	8	2		
66	1	1.5	2	2	2	1	4	1	98	1	1	98	1		
66	1	4	2	2	2	1	4	2	4	2	2	4	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
66	1	8.7	2	2	2	1	4	2	1	2	2	2	2	121	0
66	1	23.9	2	2	2	1	4	1	4	2	1	4	2	180	2
66	12	13.7	2	2	2	1	4	1	98	1	1	98	1		
66	1	7.9	2	2	2	1	2	2	9	2	3	99	1		
66	4	22.2	2	2	2	1	2	2	4	2	3	99	1		
66	2	2.5	2	2	2	1	2	2	1	2	3	99	1		
66	1	57.9	2	2	2	1	2	1	98	1	3	99	1	134	3
66	1	29.3	2	2	2	1	2	2	6	2	3	99	1	165	1
66	1	29.8	2	2	2	1	2	2	6	2	3	99	1	143	1
66	1	11.4	2	2	2	1	2	2	4	2	3	99	1	166	1
66	1	4.5	2	2	2	1	2	2	4	5	3	99	1	156	1
66	7	18.3	2	2	2	1	2	1	98	1	3	99	1		
66	1	1.1	2	2	2	1	2	2	4	2	3	99	1		
66	1	0.5	2	2	2	1	2	2	1	2	3	99	1		
66	1	12.1	2	2	2	1	2	2	4	2	3	99	1	95	1
66	4	8.7	2	2	2	1	2	1	98	1	3	99	1		
66	1	5.5	2	2	2	1	3	3	99	1	2	2	2		
66	1	0.8	2	2	2	1	3	3	99	1	2	1	2		
66	1	2.3	2	2	2	1	3	3	99	1	1	98	1		
66	4	10.6	2	2	2	1	2	2	1	5	3	99	1		
66	1	0.8	2	2	2	1	4	2	4	5	2	4	2		
66	1	1.2	2	2	2	1	4	2	1	5	2	4	2		
66	2	5.4	2	2	2	1	4	2	2	0	2	2	5		
66	1	4.7	2	2	2	1	3	3	99	1	1	98	1		
66	1	11	2	2	5	1	1	3	99	1	3	99	1		
66	141	252	2	2	3	1	1	3	99	1	3	99	1		
66	1	4.1	2	2	3	1	1	3	99	1	3	99	1		
66	269	374.9	2	2	3	1	1	3	99	1	3	99	1		
66	66	78	2	2	3	1	1	3	99	1	3	99	1		
66	24	123	2	2	3	3	1	3	99	1	3	99	1		
66	10	77.6	2	2	3	3	1	3	99	1	3	99	1		
66	1	5.6	2	2	3	3	1	3	99	1	3	99	1		
66	36	50.5	2	2	3	2	1	3	99	1	3	99	1		
66	45	86.6	2	2	3	2	1	3	99	1	3	99	1		
66	13	33.4	2	2	3	2	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
66	19	65.9	2	2	3	4	1	3	99	1	3	99	1		
66	1	1.9	2	2	3	1	2	2	9	2	3	99	1		
66	16	184.7	2	1	2	1	1	3	99	1	3	99	1		
66	14	109.9	2	1	2	1	1	3	99	1	3	99	1		
66	6	9.6	2	1	2	1	1	3	99	1	3	99	1		
66	1	7	2	1	2	1	4	2	4	2	2	4	2		
66	1	6.6	2	1	2	1	2	2	4	2	3	99	1		
66	20	101.2	2	1	4	1	1	3	99	1	3	99	1		
66	25	57.8	2	1	4	1	1	3	99	1	3	99	1		
66	6	33.7	2	1	4	1	1	3	99	1	3	99	1		
66	1	1	2	1	4	1	4	2	4	2	3	99	1		
66	42	106.2	1	2	2	1	1	3	99	1	3	99	1		
66	81	145.8	1	2	2	1	1	3	99	1	3	99	1		
66	1	2	1	2	2	1	1	3	99	1	3	99	1	180	1
66	19	70.3	1	2	2	1	1	3	99	1	3	99	1		
66	1	1.7	1	2	2	3	1	3	99	1	3	99	1		
66	16	18.2	1	2	2	2	1	3	99	1	3	99	1		
66	24	25.1	1	2	2	2	1	3	99	1	3	99	1		
66	5	10.6	1	2	2	2	1	3	99	1	3	99	1		
66	10	13.1	1	2	2	4	1	3	99	1	3	99	1		
66	8	9	1	2	2	4	1	3	99	1	3	99	1		
66	2	2.1	1	2	2	1	4	2	8	2	2	8	2		
66	1	1.9	1	2	2	1	4	1	98	1	1	98	1		
66	1	2.4	1	2	2	1	2	1	8	2	3	99	1		
66	1	1.2	1	2	2	1	4	2	9	5	2	9	2		
66	4	13.1	1	2	3	1	1	3	99	1	3	99	1		
66	3	3.5	1	2	3	1	1	3	99	1	3	99	1		
66	6	42.7	1	1	2	1	1	3	99	1	3	99	1		
66	7	13.9	1	1	2	1	1	3	99	1	3	99	1		
66	4	2.8	1	1	4	1	1	3	99	1	3	99	1		
66	8	9.7	1	1	4	1	1	3	99	1	3	99	1		
66	1	1.6	1	1	4	1	1	3	99	1	3	99	1		
66	1	14.3	2	2	2	2	2	1	10	1	3	99	1	123	1
66	1	29.2	2	2	2	2	4	1	98	1	1	98	1	140	2
66	1	4	2	2	3	5	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
66	1	63.4	2	2	2	4	4	1	4	2	1	4	2	133	3
66	1	13.4	2	2	2	2	4	1	4	2	1	4	2	134	1
66	1	7.1	2	2	2	2	2	2	4	2	3	99	1	114	1
67	9	13.8	3	2	2	1	1	3	99	1	3	99	1		
67	1	7.9	3	2	2	1	1	3	99	1	3	99	1	147	1
67	2	3.2	3	2	2	2	1	3	99	1	3	99	1		
67	1	1	3	2	2	1	4	1	98	1	1	98	1		
67	1	9.2	3	2	2	1	4	2	2	2	2	2	2	98	1
67	2	2.1	3	2	2	1	2	1	98	1	3	99	1		
67	2	3.9	3	2	2	1	2	2	1	2	3	99	1		
67	4	10	3	2	2	1	2	2	1	5	3	99	1		
67	2	2.4	3	1	4	1	1	3	99	1	3	99	1		
67	87	182.7	2	2	2	1	1	3	99	1	3	99	1		
67	1	42.5	2	2	2	1	1	3	99	1	3	99	1	180	1
67	1	7.7	2	2	2	3	1	3	99	1	3	99	1		
67	9	16.3	2	2	2	2	1	3	99	1	3	99	1		
67	9	16.6	2	2	2	4	1	3	99	1	3	99	1		
67	2	4.8	2	2	2	1	4	1	98	1	1	98	1		
67	1	13.1	2	2	2	1	4	2	2	2	2	4	2		
67	1	0.9	2	2	2	1	4	2	2	2	2	2	2		
67	1	11	2	2	2	1	4	2	1	5	2	1	5	145	1
67	1	8	2	2	2	1	4	2	9	2	2	8	2	180	1
67	7	13.5	2	2	2	1	2	2	1	2	3	99	1		
67	1	7.4	2	2	2	1	2	2	4	2	3	99	1	127	0
67	1	2.4	2	2	2	1	2	2	8	2	3	99	1		
67	1	7.2	2	2	2	1	2	2	4	3	3	99	1		
67	1	1.3	2	2	2	1	4	1	4	2	2	1	5		
67	64	85	2	2	3	1	1	3	99	1	3	99	1		
67	11	38.9	2	2	3	3	1	3	99	1	3	99	1		
67	7	13.5	2	2	3	2	1	3	99	1	3	99	1		
67	1	13.9	2	2	3	4	1	3	99	1	3	99	1		
67	6	37.6	2	1	2	1	1	3	99	1	3	99	1		
67	4	6.8	2	1	4	1	1	3	99	1	3	99	1		
67	1	1.1	2	1	4	1	4	2	8	2	2	6	2		
67	19	36.9	1	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
67	4	8.6	1	2	2	2	1	3	99	1	3	99	1		
67	4	9.8	1	2	2	4	1	3	99	1	3	99	1		
67	1	0.6	1	2	2	1	4	2	4	2	1	4	2		
67	1	18.2	1	2	3	1	1	3	99	1	3	99	1		
67	1	3.6	1	1	2	1	1	3	99	1	3	99	1		
67	2	4.4	1	1	4	1	1	3	99	1	3	99	1		
68	8	24.2	3	2	2	1	1	3	99	1	3	99	1		
68	9	8.1	3	2	2	1	1	3	99	1	3	99	1		
68	3	14.5	3	2	2	1	4	1	98	1	1	98	1		
68	2	1.2	3	2	2	1	4	1	98	1	1	98	1		
68	2	2.1	3	2	2	1	2	1	98	1	3	99	1		
68	1	3.1	3	2	2	1	2	1	98	1	3	99	1		
68	3	4.4	3	2	2	1	2	2	1	5	3	99	1		
68	280	474.6	2	2	2	1	1	3	99	1	3	99	1		
68	9	7.1	2	2	2	1	1	3	99	1	3	99	1		
68	1	2.3	2	2	2	3	1	3	99	1	3	99	1		
68	13	22.2	2	2	2	2	1	3	99	1	3	99	1		
68	22	45.4	2	2	2	4	1	3	99	1	3	99	1		
68	1	26.3	2	2	2	4	1	3	99	1	3	99	1		
68	1	1.9	2	2	2	1	4	2	4	2	2	4	2		
68	37	6.3	2	2	2	1	4	1	98	1	1	98	1		
68	2	6.5	2	2	2	1	2	1	98	1	3	99	1		
68	5	21.7	2	2	2	1	2	2	4	2	3	99	1		
68	1	1.9	2	2	2	1	2	2	5	2	3	99	1		
68	1	21.3	2	2	2	1	2	2	6	0	3	99	1	109	1
68	1	8.9	2	2	2	1	2	2	4	2	3	99	1	151	1
68	3	2.5	2	2	2	1	2	1	98	1	3	99	1		
68	1	0.4	2	2	2	1	4	1	98	1	1	98	1		
68	1	4.7	2	2	2	1	2	1	1	5	3	99	1		
68	1	0.5	2	2	2	1	2	1	98	1	3	99	1		
68	116	173	2	2	3	1	1	3	99	1	3	99	1		
68	13	7.7	2	2	3	1	1	3	99	1	3	99	1		
68	11	62.4	2	2	3	3	1	3	99	1	3	99	1		
68	3	7.5	2	2	3	3	1	3	99	1	3	99	1		
68	12	18.8	2	2	3	2	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
68	10	147.1	2	1	2	1	1	3	99	1	3	99	1		
68	2	0.5	2	1	2	1	1	3	99	1	3	99	1		
68	15	26	2	1	4	1	1	3	99	1	3	99	1		
68	18	15.2	1	2	2	1	1	3	99	1	3	99	1		
68	5	4.3	1	2	2	1	1	3	99	1	3	99	1		
68	1	0.4	1	2	2	2	1	3	99	1	3	99	1		
68	1	0.6	1	2	2	4	1	3	99	1	3	99	1		
68	1	10.7	1	2	2	1	2	1	98	1	3	99	1		
68	6	12.8	1	1	2	1	1	3	99	1	3	99	1		
69	2	0.4	3	2	2	1	4	1	98	1	1	98	1		
69	1	1.2	3	2	2	1	2	2	1	2	3	99	1		
69	1	1.9	3	2	2	1	4	1	1	5	1	1	5		
69	1	1.3	3	2	2	1	2	2	1	5	3	99	1		
69	18	40	2	2	2	1	1	3	99	1	3	99	1		
69	4	1.7	2	2	2	1	1	3	99	1	3	99	1		
69	1	1	2	2	2	2	1	3	99	1	3	99	1		
69	3	4.3	2	2	2	4	1	3	99	1	3	99	1		
69	1	4	2	2	2	1	4	2	4	2	1	4	2		
69	2	6.8	2	2	2	1	2	1	4	2	3	99	1		
69	1	4.1	2	2	2	1	2	2	5	2	3	99	1		
69	1	3.5	2	2	2	1	2	2	6	2	0	0	0	82	1
69	4	1	2	2	2	1	2	1	98	1	3	99	1		
69	2	4.3	2	2	2	1	3	3	99	1	1	98	2		
69	1	1.5	2	2	2	1	2	1	4	5	3	99	1		
69	4	1.6	2	2	3	1	1	3	99	1	3	99	1		
69	1	3.9	2	1	2	1	1	3	99	1	3	99	1		
69	3	2.4	2	1	4	1	1	3	99	1	3	99	1		
69	2	0.4	2	1	4	1	1	3	99	1	3	99	1		
69	2	23.3	1	2	2	1	1	3	99	1	3	99	1		
69	3	0.9	1	2	2	1	1	3	99	1	3	99	1		
69	4	2.2	1	1	4	1	1	3	99	1	3	99	1		
70	1	0.4	3	2	2	1	1	3	99	1	3	99	1		
70	1	0.2	3	2	2	1	1	3	99	1	3	99	1		
70	1	10.5	3	2	2	1	2	2	1	2	3	99	1		
70	1	0.3	3	2	2	1	4	2	2	5	2	2	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
70	1	1.4	3	2	2	1	4	2	1	5	2	2	2		
70	9	8.1	2	2	2	1	1	3	99	1	3	99	1		
70	2	0.5	2	2	2	1	1	3	99	1	3	99	1		
70	1	0.7	2	2	2	4	1	3	99	1	3	99	1		
70	1	2.2	2	2	2	1	2	2	4	2	3	99	1		
70	1	1.1	2	2	2	1	2	1	98	1	3	99	1		
70	1	2.4	2	2	2	1	4	2	4	5	2	4	5		
70	1	0.8	2	2	2	1	4	1	98	1	1	98	1		
70	2	9.6	2	2	3	3	1	3	99	1	3	99	1		
70	1	0.3	1	1	2	1	1	3	99	1	3	99	1		
71	1	0.8	3	2	2	1	1	3	99	1	3	99	1		
71	2	1.5	3	2	2	1	2	2	1	5	3	99	1		
71	6	7.6	2	2	2	1	1	3	99	1	3	99	1		
71	1	0.2	2	2	2	1	1	3	99	1	3	99	1		
71	1	0.8	2	2	2	2	1	3	99	1	3	99	1		
71	1	2.9	2	2	2	1	2	2	4	2	3	99	1		
71	1	0.5	2	2	2	1	2	2	6	2	3	99	1		
71	1	0.6	2	2	3	1	1	3	99	1	3	99	1		
71	1	0.5	2	2	3	1	1	3	99	1	3	99	1		
72	1	0.1	0	0	0	0	0	0	0	0	0	0	0		
72	1	1.9	2	2	2	1	1	3	99	1	3	99	1		
72	1	0.7	2	2	2	1	2	2	1	2	3	99	1		
72	1	0.1	2	2	2	1	4	2	4	5	2	9	5		
75	1	0.8	2	2	2	1	1	3	99	1	3	99	1		
75	5	12.4	1	2	2	1	1	3	99	1	3	99	1		
75	1	1.7	1	2	5	1	1	3	99	1	3	99	1		
76	1	2.1	2	2	2	1	1	3	99	1	3	99	1		
76	1	0.8	1	2	2	1	1	3	99	1	3	99	1		
77	15	29.4	2	2	2	1	1	3	99	1	3	99	1		
78	2	1.4	2	2	2	1	1	3	99	1	3	99	1		
78	11	9.1	2	2	2	1	1	3	99	1	3	99	1		
78	1	2.4	2	2	2	1	2	2	1	2	3	99	1		
78	1	0.3	2	2	2	1	2	2	2	2	3	99	1		
78	1	2.3	2	2	2	1	2	2	4	2	3	99	1		
78	1	0.8	1	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
78	1	0.6	1	2	2	1	4	2	9	5	2	8	5		
79	6	8.2	3	2	2	1	1	3	99	1	3	99	1		
79	1	4	3	2	2	1	1	3	99	1	3	99	1	141	
79	1	1.8	3	2	3	1	1	3	99	1	3	99	1		
79	131	164.1	2	2	2	1	1	3	99	1	3	99	1		
79	9	63.4	2	2	2	1	1	3	99	2	3	99	2		
79	3	25.1	2	2	2	1	1	3	99	1	3	99	2		
79	14	14.8	2	2	2	1	1	3	99	1	3	99	1		
79	1	1.8	2	2	2	2	1	3	99	1	3	99	1		
79	1	9.3	2	2	2	4	1	3	99	1	3	99	1		
79	1	0.9	2	2	2	1	2	1	98	1	3	99	1		
79	1	0.6	2	2	5	1	1	3	99	1	3	99	1		
79	35	54.9	2	2	3	1	1	3	99	1	3	99	1		
79	1	1	2	2	3	1	1	3	99	1	3	99	1		
79	15	23.1	1	2	2	1	1	3	99	1	3	99	1		
79	4	1.5	1	2	2	1	1	3	99	1	3	99	1		
79	4	5	1	2	5	1	1	3	99	1	3	99	1		
80	1	0.7	2	2	2	1	1	3	99	1	3	99	1		
83	3	2.4	2	2	2	1	1	3	99	1	3	99	1		
86	1	1.7	2	2	2	1	1	3	99	1	3	99	1		
86	1	1.7	2	2	2	1	3	3	99	1	2	1	2		
86	5	2.8	2	2	3	1	1	3	99	1	3	99	1		
88	1	1.7	2	2	2	1	1	3	99	1	3	99	1		
89	1	1.1	3	2	3	1	1	3	99	1	3	99	1		
89	56	58.7	2	2	2	1	1	3	99	1	3	99	1		
89	3	3.4	2	2	2	2	1	3	99	1	3	99	1		
89	5	8.5	2	2	2	4	1	3	99	1	3	99	1		
89	5	10.1	2	2	2	1	4	1	98	1	1	98	1		
89	2	4.2	2	2	2	1	4	1	98	1	1	98	1		
89	1	1.5	2	2	2	1	2	2	1	5	3	99	1		
89	1	2.1	2	2	5	1	1	3	99	1	3	99	1		
89	18	16.9	2	2	3	1	1	3	99	1	3	99	1		
89	3	9	2	2	3	3	1	3	99	1	3	99	1		
89	2	1.4	2	2	3	2	1	3	99	1	3	99	1		
89	4	3.6	2	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
89	3	1	1	2	2	1	1	3	99	1	3	99	1		
89	1	0.7	1	2	2	4	1	3	99	1	3	99	1		
89	1	0.5	1	2	2	1	3	3	99	1	1	98	1		
89	1	0.9	1	2	3	1	1	3	99	1	3	99	1		
89	1	4.3	2	2	2	1	1	3	99	1	3	99	1	130	1
89	1	3.3	2	2	2	1	1	3	99	1	3	99	1	130	1
89	1	1.3	1	2	2	1	0	0	0	0	0	0	0	150	2
89	1	2.8	2	2	2	1	4	1	4	2	1	4	2	135	1
90	3	1.8	3	2	2	1	1	3	99	1	3	99	1		
90	2	1.3	3	2	2	1	4	1	98	1	1	98	1		
90	1	1	3	2	2	1	4	1	2	5	1	2	5		
90	1	1.1	3	2	2	1	4	1	1	5	1	1	5		
90	106	118.4	2	2	2	1	1	3	99	1	3	99	1		
90	1	1.3	2	2	2	3	1	3	99	1	3	99	1		
90	13	17.1	2	2	2	2	1	3	99	1	3	99	1		
90	12	19.2	2	2	2	4	1	3	99	1	3	99	1		
90	16	33.4	2	2	2	1	4	1	98	1	1	98	1		
90	1	2.1	2	2	2	1	2	1	98	1	3	99	1		
90	2	8.6	2	2	2	1	3	3	99	1	2	2	2		
90	1	3.1	2	2	2	1	4	2	2	5	1	9	5		
90	2	8.5	2	2	2	1	2	2	2	5	3	99	1		
90	1	2.4	2	2	2	1	4	1	8	2	1	1	5		
90	7	12.5	2	1	4	1	1	3	99	1	3	99	1		
90	2	2	2	1	4	1	4	2	2	2	1	2	2		
90	8	5.8	1	2	2	1	1	3	99	1	3	99	1		
90	5	5.2	1	2	2	2	1	3	99	1	3	99	1		
90	1	1	1	2	2	4	1	3	99	1	3	99	1		
90	1	3.6	1	2	2	1	4	2	9	2	2	9	2		
90	4	6.3	1	2	3	1	1	3	99	1	3	99	1		
90	5	5.8	1	1	4	1	1	3	99	1	3	99	1		
90	1	12.4	2	2	2	3	0	0	0	0	0	0	0	130	1
90	1	6.1	2	2	2	1	4	1	2	2	1	2	2	156	0
90	1	3.7	1	2	2	1	2	1	9	2	0	0	0	144	1
90	1	9.4	1	2	2	1	0	0	0	0	0	0	0	118	2
90	1	6.1	2	2	2	1	0	0	0	0	0	0	0	142	2

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
90	1	1.9	1	2	2	1	0	0	0	0	0	0	0	149	1
90	1	3	2	2	2	1	2	1	4	2	3	99	1	159	2
91	18	15.3	3	2	2	1	1	3	99	1	3	99	1		
91	3	1	3	2	2	1	1	3	99	1	3	99	1		
91	1	1.9	3	2	2	4	1	3	99	1	3	99	1		
91	5	6.9	3	2	2	1	4	1	98	1	1	98	1		
91	1	0.4	3	2	2	1	4	1	2	5	1	2	5		
91	2	3.1	3	2	2	1	4	1	1	5	1	1	5		
91	1	0.9	3	2	3	1	1	3	99	1	3	99	1		
91	1	1.9	3	2	3	1	1	3	99	1	3	99	1		
91	293	340.2	2	2	2	1	1	3	99	1	3	99	1		
91	92	50.8	2	2	2	1	1	3	99	1	3	99	1		
91	1	2.8	2	2	2	3	1	3	99	1	3	99	1		
91	22	55.4	2	2	2	2	1	3	99	1	3	99	1		
91	8	8.5	2	2	2	2	1	3	99	1	3	99	1		
91	30	43.9	2	2	2	4	1	3	99	1	3	99	1		
91	5	2.5	2	2	2	4	1	3	99	1	3	99	1		
91	14	25.5	2	2	2	1	4	1	98	1	1	98	1		
91	1	2.9	2	2	2	1	4	2	9	2	2	9	2		
91	1	1.3	2	2	2	1	4	2	1	2	1	9	2		
91	1	0.6	2	2	2	1	4	2	9	2	2	1	2		
91	5	4.6	2	2	2	1	4	1	98	1	1	98	1		
91	8	27.2	2	2	2	1	2	1	98	1	3	99	1		
91	6	10.4	2	2	2	1	2	1	98	1	3	99	1		
91	3	23.7	2	2	2	1	2	1	98	1	3	99	1		
91	2	4.6	2	2	2	1	3	3	99	1	1	98	1		
91	3	3.7	2	2	2	1	3	3	99	1	2	8	2		
91	2	4	2	2	2	1	3	3	99	1	1	98	1		
91	2	1.5	2	2	2	1	4	1	2	5	1	2	5		
91	1	2.3	2	2	2	1	4	1	2	5	2	9	5		
91	1	0.5	2	2	2	1	4	2	1	5	2	2	5		
91	1	1.2	2	2	2	1	4	1	98	1	1	98	1		
91	1	5.3	2	2	2	1	4	2	4	5	2	2	2		
91	1	8.8	2	2	2	1	4	2	1	5	2	4	2		
91	3	5	2	2	2	1	2	1	98	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
91	1	1.6	2	2	2	1	3	3	99	1	1	98	1		
91	16	10.7	2	2	3	1	1	3	99	1	3	99	1		
91	1	2.7	2	1	2	1	1	3	99	1	3	99	1		
91	22	28.3	2	1	4	1	1	3	99	1	3	99	1		
91	1	1.1	2	1	4	1	1	3	99	1	3	99	1		
91	8	20.1	2	1	4	1	4	2	4	2	2	4	2		
91	40	46.5	1	2	2	1	1	3	99	1	3	99	1		
91	8	3	1	2	2	1	1	3	99	1	3	99	1		
91	1	0.3	1	2	2	2	1	3	99	1	3	99	1		
91	1	1	1	2	2	2	1	3	99	1	3	99	1		
91	2	1.9	1	2	2	4	1	3	99	1	3	99	1		
91	21	8.2	1	2	3	1	1	3	99	1	3	99	1		
91	1	0.8	1	2	1	1	1	3	99	1	3	99	1		
91	1	1.3	1	1	4	1	1	3	99	1	3	99	1		
91	1	2.6	1	1	4	1	4	2	8	2	2	8	2		
91	1	27.6	2	2	2	1	0	0	0	0	0	0	0	166	1
91	1	6.1	2	2	2	1	4	2	4	2	2	4	2	166	1
91	1	3.9	1	2	2	1	0	0	0	0	0	0	0	165	1
92	1	0.4	0	0	0	0	0	0	0	0	0	0	0		
92	1	1.7	3	2	2	1	4	1	98	1	1	98	1		
92	1	3.4	3	2	2	1	4	2	4	5	2	4	5		
92	2	2.2	3	2	3	1	1	3	99	1	3	99	1		
92	37	179.8	2	2	2	1	1	3	99	1	3	99	1		
92	91	75.5	2	2	2	1	1	3	99	1	3	99	1		
92	10	38.6	2	2	2	2	1	3	99	1	3	99	1		
92	19	29.4	2	2	2	2	1	3	99	1	3	99	1		
92	14	43.1	2	2	2	4	1	3	99	1	3	99	1		
92	9	15	2	2	2	4	1	3	99	1	3	99	1		
92	7	35.8	2	2	2	1	4	1	98	1	1	98	1		
92	1	5.5	2	2	2	1	4	2	4	2	2	9	2		
92	1	4	2	2	2	1	4	1	6	2	2	4	2		
92	1	6.3	2	2	2	1	4	1	5	2	2	1	2		
92	1	6.8	2	2	2	1	4	2	4	2	1	2	2		
92	11	21.2	2	2	2	1	4	1	98	1	1	98	1		
92	2	14.7	2	2	2	1	4	1	98	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
92	8	44	2	2	2	1	2	1	98	1	3	99	1		
92	1	5	2	2	2	1	2	2	9	2	3	99	1		
92	2	5.9	2	2	2	1	2	1	98	1	3	99	1		
92	6	22.6	2	2	2	1	3	3	99	1	1	98	1		
92	3	5.3	2	2	2	1	3	3	99	1	1	98	1		
92	3	8.3	2	2	2	1	4	2	1	5	2	1	5		
92	1	6	2	2	2	1	4	2	4	5	2	4	5		
92	1	6.5	2	2	2	1	4	2	2	5	2	9	5		
92	1	0.9	2	2	2	1	4	2	2	5	2	2	5		
92	1	14	2	2	2	1	4	2	1	3	1	4	2		
92	1	2.9	2	2	2	1	2	2	1	5	3	99	1		
92	3	1.2	2	2	2	1	2	1	98	1	3	99	1		
92	1	13.7	2	2	2	1	4	2	4	2	2	4	5		
92	1	2.1	2	2	2	1	3	3	99	1	2	1	5		
92	3	2.1	2	2	2	1	3	3	99	1	1	98	1		
92	32	121.1	2	2	3	1	1	3	99	1	3	99	1		
92	40	50	2	2	3	1	1	3	99	1	3	99	1		
92	2	29.2	2	2	3	3	1	3	99	1	3	99	1		
92	1	1	2	2	3	3	1	3	99	1	3	99	1		
92	5	22.5	2	2	1	1	1	3	99	1	3	99	1		
92	1	3.8	2	1	4	1	1	3	99	1	3	99	1		
92	3	2.8	2	1	4	1	1	3	99	1	3	99	1		
92	1	2	2	1	4	1	4	2	9	2	2	9	2		
92	2	8.8	1	2	2	1	1	3	99	1	3	99	1		
92	10	14.6	1	2	2	1	1	3	99	1	3	99	1		
92	2	2.2	1	2	2	4	1	3	99	1	3	99	1		
92	1	1.2	1	1	4	1	1	3	99	1	3	99	1		
92	1	20.8	2	2	2	1	4	1	7	2	1	5	2	135	2
92	1	6.6	2	2	2	1	0	0	0	0	0	0	0	142	3
92	1	24.8	2	2	2	1	4	1	7	2	1	6	2	139	2
92	1	8.7	2	2	2	1	0	0	0	0	0	0	0	115	1
92	1	6.3	2	2	2	2	1	3	99	1	3	99	1	111	1
92	1	12	1	2	2	1	2	1	8	2	3	99	1	142	1
92	1	11.8	2	2	2	2	1	3	99	1	3	99	1	130	2
92	1	8.9	2	2	2	1	4	2	5	5	2	8	2	138	2

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
92	1	9.1	2	2	5	1	1	3	99	1	3	99	1	143	1
92	1	5.9	3	2	2		4	1	2	2	1	2	2	100	1
92	1	11.3	2	2	2	1	2	2	2	5	3	99	1	128	2
92	1	5.1	2	2	2	1	0	0	0	0	0	0	0	170	1
92	1	10.2	2	2	2	1	1	3	99	1	3	99	1	158	2
92	1	6.6	1	2	2	2	0	0	0	0	0	0	0	140	1
92	1	5.4	1	2	2	1	0	0	0	0	0	0	0	126	1
92	1	4.9	2	2	2	1	0	0	0	0	0	0	0	121	1
92	1	5.6	1	2	2	1	1	3	99	1	3	99	1	159	1
92	1	2.4	1	2	2	1	0	0	0	0	0	0	0	150	1
93	1	1.7	0	0	0	0	0	0	0	0	0	0	0		
93	20	33	3	2	2	1	1	3	99	1	3	99	1		
93	12	11.6	3	2	2	1	1	3	99	1	3	99	1		
93	16	13.3	3	2	2	1	1	3	99	1	3	99	1		
93	1	4.2	3	2	2	2	1	3	99	1	3	99	1		
93	1	2.1	3	2	2	2	1	3	99	1	3	99	1		
93	1	10.9	3	2	2	2	1	3	99	1	3	99	1		
93	4	11.1	3	2	2	4	1	3	99	1	3	99	1		
93	1	30.1	3	2	2	4	1	3	99	1	3	99	1		
93	1	8.7	3	2	2	1	4	1	98	1	1	98	1		
93	1	14.6	3	2	2	1	4	2	2	2	2	2	5	120	1
93	5	9.6	3	2	2	1	4	1	98	1	1	98	1		
93	2	9.8	3	2	2	1	4	1	98	1	1	98	1		
93	1	7.2	3	2	2	1	3	3	99	1	1	98	1		
93	1	1.7	3	2	2	1	3	3	99	1	1	98	1		
93	1	0.7	3	2	2	1	3	3	99	1	1	98	1		
93	1	1.1	3	2	2	1	4	1	2	5	1	2	5		
93	3	5.3	3	2	2	1	4	2	1	5	2	1	5		
93	1	1	3	2	2	1	4	1	2	5	1	2	5		
93	4	13	3	2	2	1	4	1	98	1	1	98	1		
93	1	7.1	3	2	2	1	4	2	1	5	1	2	2		
93	2	4.8	3	2	3	1	1	3	99	1	3	99	1		
93	3	1.4	3	2	1	1	1	3	99	1	3	99	1		
93	1	1.4	3	1	4	1	1	3	99	1	3	99	1		
93	2	2.1	3	1	4	1	1	3	99	1	3	99	1		

(continued)

**Table L.1.** continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
93	2	0.8	3	1	4	1	4	2	2	2	2	2	2		
93	1	2.3	3	1	4	1	4	2	1	5	2	2	5		
93	484	1012.3	2	2	2	1	1	3	99	1	3	99	1		
93	1	14.6	2	2	2	1	1	3	99	1	3	99	1	180	1
93	1	6.3	2	2	2	1	1	3	99	1	3	99	1	143	1
93	1	7.2	2	2	2	1	1	3	99	1	3	99	1	127	1
93	1	10.6	2	2	2	1	1	3	99	1	3	99	1	154	3
93	1	4.6	2	2	2	1	1	3	99	1	3	99	1	180	1
93	1	21.1	2	2	2	1	1	3	99	1	3	99	1	127	0
93	1	7	2	2	2	1	1	3	99	1	3	99	1	118	1
93	516	1098.8	2	2	2	1	1	3	99	1	3	99	1		
93	1	20.9	2	2	2	1	1	3	99	1	3	99	1	180	1
93	1	8.2	2	2	2	1	1	3	99	1	3	99	1	145	2
93	1	27.6	2	2	2	1	1	3	99	1	3	99	1	180	1
93	1	13.7	2	2	2	1	1	3	99	1	3	99	1	146	2
93	1	4.9	2	2	2	1	1	3	99	1	3	99	1	144	2
93	1	4.5	2	2	2	1	1	3	99	1	3	99	1	129	1
93	7	139.3	2	2	2	1	1	3	99	1	3	99	1		
93	1	20.8	2	2	2	1	1	3	99	1	3	99	1	130	1
93	1	26.9	2	2	2	1	1	3	99	1	3	99	1	180	1
93	120	128.7	2	2	2	1	1	3	99	1	3	99	1		
93	1	4.4	2	2	2	1	1	3	99	1	3	99	1		
93	4	10.4	2	2	2	3	1	3	99	1	3	99	1		
93	1	0.9	2	2	2	3	1	3	99	1	3	99	1		
93	57	103.9	2	2	2	2	1	3	99	1	3	99	1		
93	1	11.4	2	2	2	2	1	3	99	1	3	99	1	120	1
93	53	103	2	2	2	2	1	3	99	1	3	99	1		
93	1	11.1	2	2	2	2	1	3	99	1	3	99	1	140	1
93	1	4.9	2	2	2	2	1	3	99	1	3	99	1	138	1
93	1	4.7	2	2	2	2	1	3	99	1	3	99	1	120	1
93	1	10	2	2	2	2	1	3	99	1	3	99	1		
93	1	30.2	2	2	2	2	1	3	99	1	3	99	1	131	3
93	17	15.7	2	2	2	2	1	3	99	1	3	99	1		
93	61	212.5	2	2	2	4	1	3	99	1	3	99	1		
93	70	223	2	2	2	4	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
93	3	28.9	2	2	2	4	1	3	99	1	3	99	1		
93	1	68.2	2	2	2	4	1	3	99	1	3	99	1	122	2
93	6	4.9	2	2	2	4	1	3	99	1	3	99	1		
93	9	55.2	2	2	2	1	4	1	98	1	1	98	1		
93	1	7.2	2	2	2	1	4	1	7	0	1	7	0	101	2
93	11	47.6	2	2	2	1	4	1	98	1	1	98	1		
93	3	20.9	2	2	2	1	4	2	4	2	2	4	2		
93	1	3.3	2	2	2	1	4	1	6	2	2	2	2		
93	1	1.6	2	2	2	1	4	2	2	2	2	2	2		
93	1	3.6	2	2	2	1	4	2	2	2	1	8	2		
93	1	6.8	2	2	2	1	4	2	2	2	2	2	2	125	1
93	1	24.8	2	2	2	1	4	1	4	2	1	4	2	113	3
93	8	20.7	2	2	2	1	4	1	98	1	1	98	1		
93	1	2.4	2	2	2	1	4	1	98	1	1	98	1		
93	4	42.2	2	2	2	1	2	1	98	1	3	99	1		
93	1	8.8	2	2	2	1	2	2	2	2	0	0	0	137	0
93	1	13.6	2	2	2	1	2	1	4	2	3	99	1	162	1
93	9	22.4	2	2	2	1	2	1	98	1	3	99	1		
93	1	8.7	2	2	2	1	2	2	4	2	3	99	1		
93	2	2.2	2	2	2	1	2	2	8	2	3	99	1		
93	1	21	2	2	2	1	2	1	6	2	3	99	1	124	1
93	1	20.3	2	2	2	1	2	1	6	2	3	99	1	117	2
93	1	21.3	2	2	2	1	2	1	6	2	3	99	1	135	1
93	1	13.4	2	2	2	1	2	2	2	5	3	99	1	134	1
93	1	17	2	2	2	1	2	2	4	2	3	99	1	123	2
93	1	4.8	2	2	2	1	2	1	2	2	3	99	1	130	1
93	1	2	2	2	2	1	2	1	8	2	0	0	0	114	1
93	1	5.3	2	2	2	1	2	2	4	2	3	99	1	117	2
93	1	44.6	2	2	2	1	2	1	6	0	3	99	1	150	3
93	1	13.4	2	2	2	1	2	1	4	0	3	99	1	117	1
93	1	18.2	2	2	2	1	2	1	6	2	3	99	1	141	1
93	1	13.3	2	2	2	1	2	2	4	2	3	99	1	123	2
93	7	10.5	2	2	2	1	2	1	98	1	3	99	1		
93	2	20.4	2	2	2	1	2	1	98	1	3	99	1		
93	1	3.8	2	2	2	1	3	3	99	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
93	1	10.7	2	2	2	1	3	3	99	1	2	9	2		
93	3	9.1	2	2	2	1	3	3	99	1	1	98	1		
93	3	11.4	2	2	2	1	3	3	99	1	2	8	1		
93	1	6.8	2	2	2	1	3	3	99	1	2	1	2		
93	3	11.5	2	2	2	1	4	1	2	5	1	2	5		
93	2	0.8	2	2	2	1	4	1	98	1	1	98	1		
93	2	5.7	2	2	2	1	2	1	2	5	3	99	1		
93	1	0.8	2	2	2	1	2	1	8	5	3	99	1		
93	3	13.5	2	2	2	1	2	2	2	5	3	99	1		
93	1	2.7	2	2	2	1	4	2	1	5	1	8	2		
93	1	6.8	2	2	2	1	4	2	4	5	1	8	2		
93	1	0.5	2	2	2	1	4	2	2	5	2	2	2		
93	3	9.5	2	2	2	1	2	1	98	1	3	99	1		
93	1	2.2	2	2	2	1	3	3	99	1	1	4	5		
93	1	1.1	2	2	2	1	3	3	99	1	2	1	5		
93	1	3.9	2	2	2	1	3	3	99	1	1	7	5		
93	1	1.5	2	2	2	1	3	3	99	1	1	8	5		
93	1	4.7	2	2	2	1	3	0	0	0	1	9	5		
93	1	1.8	2	2	2	1	4	1	2	2	2	1	5		
93	5	19.6	2	2	5	1	1	3	99	1	3	99	1		
93	2	1.8	2	2	5	1	1	3	99	1	3	99	1		
93	1	9	2	2	5	1	1	3	99	1	3	99	1		
93	197	334.3	2	2	3	1	1	3	99	1	3	99	1		
93	271	436.3	2	2	3	1	1	3	99	1	3	99	1		
93	4	76.5	2	2	3	1	1	3	99	1	3	99	1		
93	1	5.3	2	2	3	1	1	3	99	1	3	99	1		
93	50	49.4	2	2	3	1	1	3	99	1	3	99	1		
93	4	16.9	2	2	3	3	1	3	99	1	3	99	1		
93	5	16.1	2	2	3	3	1	3	99	1	3	99	1		
93	5	5.6	2	2	3	2	1	3	99	1	3	99	1		
93	11	12.7	2	2	3	2	1	3	99	1	3	99	1		
93	9	34.2	2	2	3	4	1	3	99	1	3	99	1		
93	13	30.7	2	2	3	4	1	3	99	1	3	99	1		
93	17	39.8	2	1	4	1	1	3	99	1	3	99	1		
93	31	51.6	2	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
93	10	20.3	2	1	4	1	1	3	99	1	3	99	1		
93	2	5.3	2	1	4	1	4	2	4	2	2	4	2		
93	2	29	2	1	4	1	4	2	8	2	2	8	2		
93	1	5.2	2	1	4	1	2	2	4	2	3	99	1		
93	20	24.2	1	2	2	1	1	3	99	1	3	99	1		
93	11	15.8	1	2	2	1	1	3	99	1	3	99	1		
93	17	8	1	2	2	1	1	3	99	1	3	99	1		
93	1	0.5	1	2	2	3	1	3	99	1	3	99	1		
93	3	3.2	1	2	2	3	1	3	99	1	3	99	1		
93	2	0.8	1	2	2	2	1	3	99	1	3	99	1		
93	6	5.7	1	2	2	2	1	3	99	1	3	99	1		
93	4	4.9	1	2	2	2	1	3	99	1	3	99	1		
93	2	2.1	1	2	2	4	1	3	99	1	3	99	1		
93	18	29.8	1	2	2	4	1	3	99	1	3	99	1		
93	1	0.9	1	2	5	1	1	3	99	1	3	99	1		
93	32	22.1	1	2	3	1	1	3	99	1	3	99	1		
93	13	13.7	1	2	3	1	1	3	99	1	3	99	1		
93	2	3.4	1	2	3	1	1	3	99	1	3	99	1		
93	1	1.9	1	2	1	1	1	3	99	1	3	99	1		
93	2	2	1	1	4	1	1	3	99	1	3	99	1		
93	13	19.2	1	1	4	1	1	3	99	1	3	99	1		
93	2	1.2	1	1	4	1	1	3	99	1	3	99	1		
93	3	35.3	1	1	4	1	4	1	9	2	1	9	2		
93	1	41.6	2	2	2	1	1	3	99	1	3	99	1	180	2
93	1	43.4	2	2	2	2	1	3	99	1	3	99	1	145	2
93	1	8.1	2	2	2	2	4	1	4	2	1	4	2	122	1
93	1	33.1	2	2	2	1	1	3	99	1	3	99	1	153	1
94	4	11.4	3	2	2	1	1	3	99	1	3	99	1		
94	1	25.7	3	2	2	1	1	3	99	1	3	99	1	99	1
94	9	7.5	3	2	2	1	1	3	99	1	3	99	1		
94	2	7.6	3	2	2	1	4	2	2	0	2	2	0		
94	1	25	3	2	2	1	2	1	2	0	3	99	1	91	1
94	1	2.4	3	2	3	3	1	3	99	1	3	99	1		
94	69	126.9	2	2	2	1	1	3	99	1	3	99	1		
94	1	23.9	2	2	2	1	1	3	99	1	3	99	1	180	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
94	1	8.4	2	2	2	1	1	3	99	1	3	99	1	125	2
94	1	15.2	2	2	2	1	1	3	99	1	3	99	1	118	2
94	1	6.5	2	2	2	1	1	3	99	1	3	99	1	128	1
94	1	8.7	2	2	2	1	1	3	99	1	3	99	1	143	2
94	151	169.9	2	2	2	1	1	3	99	1	3	99	1		
94	1	5.1	2	2	2	1	1	3	99	1	3	99	1		
94	14	20.6	2	2	2	2	1	3	99	1	3	99	1		
94	1	23.5	2	2	2	2	1	3	99	1	3	99	1	115	1
94	1	60.3	2	2	2	2	1	3	99	1	3	99	1	139	3
94	1	95.8	2	2	2	2	1	3	99	1	3	99	1	139	3
94	1	78.9	2	2	2	2	1	3	99	1	3	99	1	139	3
94	16	24.8	2	2	2	2	1	3	99	1	3	99	1		
94	12	29.8	2	2	2	4	1	3	99	1	3	99	1		
94	1	7.8	2	2	2	4	1	3	99	1	3	99	1	109	1
94	5	12.8	2	2	2	4	1	3	99	1	3	99	1		
94	1	5.8	2	2	2	1	4	1	98	1	1	98	1		
94	1	4.1	2	2	2	1	4	2	4	2	2	2	2		
94	1	1.9	2	2	2	1	4	2	2	2	2	2	2		
94	1	5.9	2	2	2	1	4	2	2	2	1	4	2	141	1
94	2	4.8	2	2	2	1	4	1	98	1	1	98	1		
94	6	49.5	2	2	2	1	2	1	98	1	3	99	1		
94	1	25.9	2	2	2	1	2	2	7	2	3	99	1		
94	1	5.1	2	2	2	1	2	2	2	0	3	99	1		
94	2	3.1	2	2	2	1	3	3	99	1	1	98	1		
94	1	13.8	2	2	2	1	4	2	4	5	2	4	5		
94	1	1.4	2	2	2	1	4	1	2	0	2	1	5		
94	1	0.9	2	2	5	1	1	3	99	1	3	99	1		
94	53	83.8	2	2	3	1	1	3	99	1	3	99	1		
94	62	44.7	2	2	3	1	1	3	99	1	3	99	1		
94	2	5.8	2	2	3	3	1	3	99	1	3	99	1		
94	1	1.7	2	2	3	3	1	3	99	1	3	99	1		
94	6	25.4	2	2	3	2	1	3	99	1	3	99	1		
94	5	27.9	2	2	3	4	1	3	99	1	3	99	1		
94	2	10.5	2	1	4	1	1	3	99	1	3	99	1		
94	9	10.8	2	1	4	1	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
94	6	10.5	1	2	2	1	1	3	99	1	3	99	1		
94	16	7.6	1	2	2	1	1	3	99	1	3	99	1		
94	1	1.1	1	2	2	2	1	3	99	1	3	99	1		
94	4	5.3	1	2	2	4	1	3	99	1	3	99	1		
94	1	1.8	1	2	2	1	4	1	98	1	1	98	1		
94	1	0.7	1	2	2	1	3	3	99	1	1	98	1		
94	1	1.1	1	2	3	1	1	3	99	1	3	99	1		
94	3	10.6	1	1	4	1	1	3	99	1	3	99	1		
94	1	0.9	1	1	4	1	1	3	99	1	3	99	1		
95	20	2.2	0	0	0	0	0	0	0	0	0	0	0		
95	32	4.6	0	0	0	0	0	0	0	0	0	0	0		
95	8	1.2	0	0	0	0	0	0	0	0	0	0	0		
95	8	9.4	0	0	0	0	0	0	0	0	0	0	0		
95	50	46.9	3	2	2	1	1	3	99	1	3	99	1		
95	10	10.3	3	2	2	1	1	3	99	1	3	99	1		
95	17	11.9	3	2	2	1	1	3	99	1	3	99	1		
95	3	7.6	3	2	2	2	1	3	99	1	3	99	1		
95	1	0.9	3	2	2	4	1	3	99	1	3	99	1		
95	7	9.1	3	2	2	1	4	1	98	0	1	98	0		
95	7	18.5	3	2	2	1	4	1	98	0	1	98	0		
95	1	2.1	3	2	2	1	4	1	98	1	1	98	1		
95	1	0.6	3	2	2	1	2	1	98	0	3	99	1		
95	3	17.7	3	2	2	1	2	1	98	1	3	99	1		
95	3	3.8	3	2	2	1	3	3	99	1	1	98	1		
95	1	7.3	3	2	2	1	4	1	2	5	1	1	5		
95	10	4.8	3	2	3	1	1	3	99	1	3	99	1		
95	2	0.9	3	2	3	1	1	3	99	1	3	99	1		
95	2	0.8	3	2	3	1	1	3	99	1	3	99	1		
95	404	631.6	2	2	2	1	1	3	99	1	3	99	1		
95	325	576	2	2	2	1	1	3	99	1	3	99	1		
95	2	7.2	2	2	2	1	1	3	99	1	3	99	1	123	1
95	104	129.9	2	2	2	1	1	3	99	1	3	99	1		
95	1	21.4	2	2	2	3	1	3	99	1	3	99	1		
95	48	70.5	2	2	2	2	1	3	99	1	3	99	1		
95	23	59.7	2	2	2	2	1	3	99	1	3	99	1		

(continued)

**Table L.1.** continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
95	15	21.8	2	2	2	2	1	3	99	1	3	99	1		
95	63	120	2	2	2	4	1	3	99	1	3	99	1		
95	38	86.5	2	2	2	4	1	3	99	1	3	99	1		
95	8	7.9	2	2	2	4	1	3	99	1	3	99	1		
95	22	70	2	2	2	1	4	1	98	1	1	98	1		
95	1	2.9	2	2	2	1	4	2	9	2	2	7	2		
95	12	44	2	2	2	1	4	1	98	1	1	98	1		
95	1	2.7	2	2	2	1	4	2	9	2	2	9	2		
95	1	2.1	2	2	2	1	4	2	4	2	2	8	2		
95	1	3	2	2	2	1	4	1	4	2	2	9	2		
95	3	3.3	2	2	2	1	4	1	98	1	1	98	1		
95	12	49.1	2	2	2	1	2	1	98	1	3	99	1		
95	5	66.2	2	2	2	1	2	1	98	1	3	99	1		
95	5	6.2	2	2	2	1	2	1	98	1	3	99	1		
95	10	35.9	2	2	2	1	3	3	99	1	1	98	1		
95	6	13.7	2	2	2	1	3	3	99	1	1	98	1		
95	3	4.5	2	2	2	1	3	3	99	1	1	98	1		
95	2	1.3	2	2	2	1	4	2	9	5	2	9	5		
95	2	3	2	2	2	1	4	1	3	5	1	3	5		
95	1	0.7	2	2	2	1	4	2	1	4	2	3	5		
95	1	2.5	2	2	2	1	4	2	4	5	2	3	5		
95	1	0.9	2	2	2	1	4	2	9	5	2	9	5		
95	4	7.6	2	2	2	1	4	1	98	5	1	98	5		
95	1	2.6	2	2	2	1	2	1	1	5	3	99	1		
95	1	1.6	2	2	2	1	4	2	9	5	1	6	2		
95	1	3.6	2	2	2	1	2	1	4	5	3	99	1		
95	3	5.8	2	2	2	1	3	3	99	1	1	98	5		
95	6	13.2	2	2	5	1	1	3	99	1	3	99	1		
95	1	1.3	2	2	5	1	1	3	99	1	3	99	1		
95	241	357.3	2	2	3	1	1	3	99	1	3	99	1		
95	144	331.8	2	2	3	1	1	3	99	1	3	99	1		
95	31	29.6	2	2	3	1	1	3	99	1	3	99	1		
95	19	94.6	2	2	3	3	1	3	99	1	3	99	1		
95	20	131.9	2	2	3	3	1	3	99	1	3	99	1		
95	3	8	2	2	3	3	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
95	6	13.9	2	2	3	2	1	3	99	1	3	99	1		
95	2	2.9	2	2	3	2	1	3	99	1	3	99	1		
95	5	8.3	2	2	3	4	1	3	99	1	3	99	1		
95	6	37.7	2	2	3	4	1	3	99	1	3	99	1		
95	76	146.2	2	1	4	1	1	3	99	1	3	99	1		
95	23	36.1	2	1	4	1	1	3	99	1	3	99	1		
95	9	10.1	2	1	4	1	1	3	99	1	3	99	1		
95	9	34.1	2	1	4	1	4	2	4	1	2	4	1		
95	5	11.5	2	1	4	1	4	2	4	2	2	4	2		
95	5	17	2	1	4	1	4	2	9	2	2	9	2		
95	1	1.5	2	1	4	1	2	2	6	2	3	99	1		
95	58	43.7	1	2	2	1	1	3	99	1	3	99	1		
95	12	17.1	1	2	2	1	1	3	99	1	3	99	1		
95	11	5.1	1	2	2	1	1	3	99	1	3	99	1		
95	2	2.3	1	2	2	3	1	3	99	1	3	99	1		
95	6	3.5	1	2	2	2	1	3	99	1	3	99	1		
95	4	2.7	1	2	2	2	1	3	99	1	3	99	1		
95	6	8.9	1	2	2	4	1	3	99	1	3	99	1		
95	1	2.4	1	2	2	4	1	3	99	1	3	99	1		
95	1	2.2	1	2	2	1	4	2	4	2	2	4	2		
95	9	5.4	1	2	3	1	1	3	99	1	3	99	1		
95	1	1.1	1	2	3	1	1	3	99	1	3	99	1		
95	2	1.8	1	1	4	1	1	3	99	1	3	99	1		
95	2	1.3	1	1	4	1	1	3	99	1	3	99	1		
95	2	6.7	3	1	4	1	4	1	2	5	1	2	5		
95	1	0.4	3	1	4	1	4	1	1	4	1	1	4		
95	1	20.2	2	2	2	2	4	2	9	2	1	98	2	127	2
95	1	6.7	2	2	2	1	4	2	2	2	2	2	2	97	1
95	1	3.2	3	2	2	1	4	1	98	1	1	98	1	103	1
95	1	10.3	2	2	2	1	1	3	99	1	3	99	1	180	1
95	1	6.6	2	2	2	1	4	1	98	0	1	98	0	120	1
95	1	9.1	2	2	2	2	0	0	0	0	0	0	0	101	1
95	1	20.3	2	2	2	1	4	1	98	1	1	98	1	143	2
95	1	7	2	2	2	1	2	1	98	1	3	99	1	125	1
95	1	6.1	1	2	2	1	0	0	0	0	0	0	0	110	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
95	1	3.3	1	2	2	1	0	0	0	0	0	0	0	103	1
95	1	18.9	2	2	2	1	2	1	98	1	0	0	0	116	1
95	1	8.1	2	2	2	1	4	2	4	2	2	4	2	105	1
95	1	4.5	1	2	2	1	0	0	0	0	0	0	0	140	1
95	1	1.8	1	2	2	1	2	1	98	1	3	99	1	154	1
95	1	5.1	1	2	2	1	0	0	0	0	0	0	0	105	1
95	1	30.6	2	2	2	1	0	0	0	0	0	0	0	135	1
95	1	24.4	2	2	2	1	4	1	4	2	1	4	2	125	2
95	1	25.5	2	2	2	1	2	1	9	0	0	0	0	180	2
95	1	17.8	2	2	2	1	4	1	4	2	1	6	2	124	2
95	1	19.9	3	2	2	1	4	1	1	2	1	1	2	158	1
95	1	15.7	2	2	2	1	4	1	6	2	1	6	2	145	2
95	1	13.6	2	2	2	1	4	1	6	2	1	6	2	160	1
95	1	6.1	2	2	2	1	0	0	0	0	0	0	0	165	2
95	1	6.2	2	2	2	1	2	1	4	2	0	0	0	160	1
95	1	15.8	3	2	2	1	2	1	2	2	3	99	1	164	1
95	1	6	2	2	2	1	2	1	8	0	3	99	1	150	1
95	1	14.5	2	2	2	1	4	1	6	2	1	2	2	144	2
95	1	3.6	1	2	2	1	4	2	1	2	2	2	2	155	1
95	1	9.2	2	2	2	1	1	3	99	1	3	99	1	120	2
95	1	12.7	2	2	2	1	1	3	99	1	3	99	1	143	1
95	1	4.6	2	2	2	1	4	1	4	2	1	4	2	149	1
95	1	8.3	2	2	2	1	4	1	5	2	1	5	2	130	2
95	1	10.6	2	2	2	1	1	3	99	1	3	99	1	130	1
95	1	4.1	2	2	2	1	4	1	4	2	1	4	2	140	1
95	1	6.2	2	2	2	1	0	0	0	0	0	0	0	125	1
95	1	8.8	2	2	2	1	4	1	6	0	1	6	0	200	2
95	1	0.9	2	2	2	1	1	3	99	1	3	99	1	141	1
95	1	3.9	2	2	2	1	4	1	6	2	1	6	2	149	2
96	2	0.6	0	0	0	0	0	0	0	0	0	0	0		
96	4	2.4	0	0	0	0	0	0	0	0	0	0	0		
96	10	14.8	3	2	2	1	1	3	99	1	3	99	1		
96	3	1.1	3	2	2	1	1	3	99	1	3	99	1		
96	3	5.5	3	2	2	1	4	1	98	1	1	98	1		
96	2	2.9	3	2	2	1	4	1	98	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
96	2	2.5	3	2	2	1	2	2	1	2	3	99	1		
96	1	1.2	3	2	2	1	4	1	2	5	1	2	5		
96	2	2.7	3	2	2	1	2	1	2	5	3	99	1		
96	2	17.6	3	2	3	1	1	3	99	1	3	99	1		
96	124	208.8	2	2	2	1	1	3	99	1	3	99	1		
96	27	22.2	2	2	2	1	1	3	99	1	3	99	1		
96	15	23.4	2	2	2	2	1	3	99	1	3	99	1		
96	2	10.3	2	2	2	2	1	3	99	1	3	99	1		
96	6	7.8	2	2	2	4	1	3	99	1	3	99	1		
96	1	0.4	2	2	2	4	1	3	99	1	3	99	1		
96	10	36.4	2	2	2	1	4	1	98	1	1	98	1		
96	5	7.4	2	2	2	1	4	1	98	1	1	98	1		
96	5	8	2	2	2	1	2	1	98	1	3	99	1		
96	1	1.8	2	2	2	1	2	2	9	2	3	99	1		
96	1	1.2	2	2	2	1	3	3	99	1	1	98	1		
96	1	0.8	2	2	2	1	3	3	99	1	1	98	1		
96	1	1.3	2	2	2	1	4	2	9	5	2	9	5		
96	2	3	2	2	2	1	4	1	2	5	1	2	5		
96	64	94.6	2	2	3	1	1	3	99	1	3	99	1		
96	15	22.2	2	2	3	1	1	3	99	1	3	99	1		
96	2	6.9	2	2	3	3	1	3	99	1	3	99	1		
96	1	2	2	2	3	2	1	3	99	1	3	99	1		
96	1	0.7	2	2	3	4	1	3	99	1	3	99	1		
96	10	55.7	2	1	4	1	1	3	99	1	3	99	1		
96	1	1	2	1	4	1	1	3	99	1	3	99	1		
96	2	1.8	2	1	4	1	4	2	4	2	2	4	2		
96	3	4	2	1	4	1	4	2	9	2	2	9	2		
96	1	0.5	2	1	4	1	2	2	9	2	3	99	1		
96	5	8.4	1	2	2	1	1	3	99	1	3	99	1		
96	9	7.9	1	2	2	1	1	3	99	1	3	99	1		
96	1	0.5	1	2	2	2	1	3	99	1	3	99	1		
96	1	3.9	1	2	3	1	1	3	99	1	3	99	1		
96	1	1.5	1	2	3	3	1	3	99	1	3	99	1		
96	1	22	2	2	2	1	2	1	4	2	3	99	1	173	1
96	1	9.1	2	2	2	1	2	2	9	0	0	0	0	146	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
96	1	2.2	2	2	2	1	2	1	9	2	0	0	0	151	1
96	1	8	2	2	2	1	0	0	0	0	0	0	0	130	1
96	1	4.9	3	2	2	1	2	1	1	2	3	99	1	150	1
96	1	2.6	2	2	2	1	2	2	4	5	0	0	0	123	1
96	1	2.5	2	2	2	1	4	2	9	5	2	4	5	111	1
97	3	2.5	2	2	2	1	1	3	99	1	3	99	1		
97	1	0.9	2	2	2	1	4	1	98	1	1	98	1		
97	1	1.1	2	2	2	1	4	1	98	1	1	98	1		
97	2	5.6	2	2	2	1	2	1	98	1	3	99	1		
97	1	1.2	2	2	2	1	2	1	98	1	3	99	1		
97	1	11.7	2	2	5	1	1	3	99	1	3	99	1		
97	1	0.6	2	2	3	1	1	3	99	1	3	99	1		
97	1	1	1	2	2	1	1	3	99	1	3	99	1		
98	3	4	2	2	2	1	1	3	99	1	3	99	1		
98	6	2.4	2	2	2	1	1	3	99	1	3	99	1		
98	1	1.2	2	2	2	2	1	3	99	1	3	99	1		
98	1	0.3	2	2	2	1	3	3	99	1	1	98	1		
98	1	0.9	2	2	3	1	1	3	99	1	3	99	1		
98	1	4.2	2	2	3	2	1	3	99	1	3	99	1		
98	1	4	1	2	2	1	1	3	99	1	3	99	1		
98	6	0.7	1	2	2	1	1	3	99	1	3	99	1		
99	11	11.7	3	2	2	1	1	3	99	1	3	99	1		
99	1	1.8	3	2	2	1	4	1	98	1	1	98	1		
99	1	12.7	3	2	2	1	2	1	98	1	3	99	1		
99	88	139.8	2	2	2	1	1	3	99	1	3	99	1		
99	5	15.9	2	2	2	2	1	3	99	1	3	99	1		
99	6	25.9	2	2	2	4	1	3	99	1	3	99	1		
99	3	11.6	2	2	2	1	4	1	98	1	1	98	1		
99	1	10.2	2	2	2	1	4	2	9	2	2	9	2		
99	1	8.7	2	2	2	1	4	1	3	2	1	1	5		
99	3	59.9	2	2	5	1	1	3	99	1	3	99	1		
99	30	54.6	2	2	3	1	1	3	99	1	3	99	1		
99	1	4.1	2	2	3	2	1	3	99	1	3	99	1		
99	6	4.9	2	1	4	1	1	3	99	1	3	99	1		
99	5	6.3	1	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
99	1	1.2	1	2	2	2	1	3	99	1	3	99	1		
99	1	0.5	1	2	2	4	1	3	99	1	3	99	1		
99	3	2.7	1	2	3	1	1	3	99	1	3	99	1		
99	5	2.9	1	1	4	1	1	3	99	1	3	99	1		
99	1	6	2	2	2	2	2	1	4	2	3	99	1	121	1
100	1	0.5	3	2	2	1	1	3	99	1	3	99	1		
100	1	0.4	3	2	2	1	1	3	99	1	3	99	1		
100	1	1.1	3	2	2	1	2	1	98	1	3	99	1		
100	1	1	3	2	2	1	4	1	1	5	1	1	5		
100	29	33.8	2	2	2	1	1	3	99	1	3	99	1		
100	10	9.9	2	2	2	1	1	3	99	1	3	99	1		
100	3	3.8	2	2	2	2	1	3	99	1	3	99	1		
100	1	0.8	2	2	2	2	1	3	99	1	3	99	1		
100	3	6.1	2	2	2	4	1	3	99	1	3	99	1		
100	4	7.7	2	2	2	1	4	1	98	1	1	98	1		
100	3	4.5	2	2	2	1	4	1	98	1	1	98	1		
100	1	2.7	2	2	2	1	2	1	98	1	3	99	1		
100	1	0.1	2	2	2	1	3	3	99	1	1	98	1		
100	2	2.2	2	2	2	1	4	1	1	5	1	4	5		
100	21	81.1	2	2	3	1	1	3	99	1	3	99	1		
100	1	20	2	2	3	1	1	3	99	1	3	99	1		
100	2	3.7	2	2	3	3	1	3	99	1	3	99	1		
100	2	5.4	2	2	3	3	1	3	99	1	3	99	1		
100	6	5.5	1	2	2	1	1	3	99	1	3	99	1		
100	1	0.3	1	2	2	1	1	3	99	1	3	99	1		
100	2	0.7	1	2	3	1	1	3	99	1	3	99	1		
100	2	0.9	1	1	4	1	1	3	99	1	3	99	1		
100	1	5.7	2	2	2	1	0	0	0	0	0	0	0	142	1
101	4	1.2	3	2	2	1	1	3	99	1	3	99	1		
101	2	1	3	2	2	1	4	2	1	4	2	1	5		
101	1	0.6	3	2	2	1	2	2	1	5	3	99	1		
101	12	19.3	2	2	2	1	1	3	99	1	3	99	1		
101	3	9.1	2	2	2	4	1	3	99	1	3	99	1		
101	1	0.4	2	2	2	1	4	1	98	1	1	98	1		
101	2	4.4	2	2	2	1	3	3	99	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
101	2	4.7	2	2	2	1	4	2	1	5	2	1	5		
101	1	2.4	2	2	2	1	2	2	1	5	3	99	1		
101	1	2.6	2	2	2	1	4	1	6	2	2	4	5		
101	5	4.5	2	2	3	1	1	3	99	1	3	99	1		
101	1	1.7	2	2	3	4	1	3	99	1	3	99	1		
101	1	0.4	1	2	3	1	1	3	99	1	3	99	1		
102	2	1.7	3	2	2	1	2	1	98	1	3	99	1		
102	3	2.3	2	2	2	1	1	3	99	1	3	99	1		
102	2	0.5	2	2	2	1	1	3	99	1	3	99	1		
102	2	6.7	2	1	4	1	1	3	99	1	3	99	1		
102	4	5.9	1	2	2	2	1	3	99	1	3	99	1		
102	1	5.7	2	2	2	1	0	0	0	0	0	0	0	154	1
103	3	2.9	2	2	2	1	1	3	99	1	3	99	1		
103	1	13.6	2	2	2	4	1	3	99	1	3	99	1		
103	1	8.6	2	2	2	1	4	1	98	1	1	98	1		
103	1	1	2	2	3	1	1	3	99	1	3	99	1		
104	2	0.3	2	2	2	1	1	3	99	1	3	99	1		
104	1	0.2	2	2	2	1	1	3	99	1	3	99	1		
104	3	15.8	2	2	3	1	1	3	99	1	3	99	1		
104	1	0.1	1	2	2	1	1	3	99	1	3	99	1		
111	1	7.9	2	2	2	1	1	3	99	1	3	99	1		
111	1	2	2	2	2	1	4	2	6	5	3	99	1		
111	1	0.9	1	2	2	1	1	3	99	1	3	99	1		
112	3	3.2	2	2	2	1	1	3	99	1	3	99	1		
115	1	4.7	2	2	2	4	1	3	99	1	3	99	1		
115	1	2.2	1	2	2	1	4	2	6	5	2	6	5		
116	3	5.8	2	2	2	1	1	3	99	1	3	99	1		
116	2	10.7	2	2	2	1	4	2	9	5	2	9	5		
116	2	1.9	2	2	2	1	4	2	6	5	2	6	5		
116	3	3.7	2	2	2	1	4	2	8	2	2	5	5		
116	2	3.6	2	2	3	1	1	3	99	1	3	99	1		
116	3	10.9	1	2	2	1	4	2	9	2	1	7	2		
117	1	6.3	2	2	2	1	1	3	99	1	3	99	1		
117	1	1.9	2	2	2	1	4	2	6	2	2	6	2		
117	2	2.3	2	2	3	1	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
118	2	7.8	2	2	2	1	1	3	99	1	3	99	1		
118	1	0.3	2	2	2	1	4	1	98	1	1	98	1		
118	1	0.7	2	2	2	1	3	0	0	0	1	4	5		
118	4	4.8	2	2	3	1	1	3	99	1	3	99	1		
119	12	39.4	2	2	2	1	1	3	99	1	3	99	1		
119	2	3.6	2	2	2	3	1	3	99	1	3	99	1		
119	6	12.9	2	2	2	2	1	3	99	1	3	99	1		
119	2	11	2	2	2	4	1	3	99	1	3	99	1		
119	1	1.6	2	2	2	1	4	2	8	2	2	8	2		
119	4	9.3	2	2	2	1	4	2	6	2	2	6	2		
119	1	0.7	2	2	2	1	4	2	4	2	2	6	2		
119	1	0.8	2	2	2	1	4	2	6	2	2	4	2		
119	1	2.1	2	2	2	1	2	2	8	2	3	99	1		
119	1	2	2	2	2	1	2	2	6	2	3	99	1		
119	1	0.6	2	2	2	1	2	2	10	2	3	99	1		
119	7	9.8	2	2	3	1	1	3	99	1	3	99	1		
119	2	1.2	1	2	2	1	1	3	99	1	3	99	1		
120	2	2.9	3	2	2	1	1	3	99	1	3	99	1		
120	1	1	3	2	2	1	4	1	2	2	1	2	2		
120	1	1.2	3	1	4	1	4	2	2	2	2	2	5		
120	4	3	2	2	2	1	1	3	99	1	3	99	1		
120	1	2.5	2	2	2	2	1	3	99	1	3	99	1		
120	1	10.5	2	2	2	4	1	3	99	1	3	99	1		
120	2	3.4	2	2	2	1	4	2	6	2	2	6	2		
120	1	1.6	2	2	2	1	4	2	8	2	2	6	2		
120	1	1.9	2	2	2	1	4	2	4	2	2	6	2		
120	1	2.5	2	2	2	1	4	2	1	5	2	7	5		
120	1	2.4	2	2	2	1	4	2	4	5	2	2	5		
120	1	3.4	2	2	2	1	4	2	5	5	2	2	5		
120	1	4	2	2	2	1	4	2	4	5	2	4	2		
120	1	1.9	2	2	2	1	4	1	8	2	2	2	5		
120	1	0.7	2	2	2	1	3	0	0	0	2	9	5		
120	11	9.6	2	2	3	1	1	3	99	1	3	99	1		
120	1	4.9	2	1	2	1	4	2	6	2	2	6	2		
121	1	0.5	3	1	4	1	3	0	0	0	2	4	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
121	26	35.4	2	2	2	1	1	3	99	1	3	99	1		
121	14	40.9	2	2	2	2	1	3	99	1	3	99	1		
121	6	19.6	2	2	2	4	1	3	99	1	3	99	1		
121	9	40.6	2	2	2	1	4	1	98	2	1	98	2		
121	2	5.9	2	2	2	1	4	2	1	2	2	6	2		
121	2	4.5	2	2	2	1	4	2	7	2	2	10	2		
121	1	1.8	2	2	2	1	4	2	7	2	2	1	2		
121	1	3.8	2	2	2	1	4	2	7	2	2	2	2		
121	1	1.2	2	2	2	1	4	2	7	2	2	1	2		
121	5	15.4	2	2	2	1	4	2	6	2	2	6	2		
121	1	1.6	2	2	2	1	4	2	8	2	2	6	2		
121	1	1.2	2	2	2	1	2	2	2	2	3	99	1		
121	1	1.9	2	2	2	1	2	1	6	2	3	99	1		
121	2	2.3	2	2	2	1	2	1	8	2	3	99	1		
121	2	3.6	2	2	2	1	3	3	99	1	2	6	2		
121	1	3.6	2	2	2	1	3	3	99	1	1	6	2		
121	1	1.4	2	2	2	1	3	3	99	1	2	8	2		
121	24	44.4	2	2	3	1	1	3	99	1	3	99	1		
121	3	4.8	2	2	3	2	1	3	99	1	3	99	1		
121	1	2	2	2	3	4	1	3	99	1	3	99	1		
121	1	4	2	1	2	1	2	1	7	2	3	99	1		
121	5	6.6	1	2	2	1	1	3	99	1	3	99	1		
121	1	5.8	1	1	4	1	1	3	99	1	3	99	1		
122	1	1.5	3	2	2	1	1	3	99	1	3	99	1		
122	4	9.4	3	2	2	1	4	2	1	5	2	6	2		
122	1	1.5	3	2	2	1	3	3	99	1	2	2	5		
122	1	2.1	3	1	4	1	3	3	99	1	2	2	5		
122	25	26.6	2	2	2	1	1	3	99	1	3	99	1		
122	3	4.5	2	2	2	1	1	3	99	1	3	99	1		
122	6	8.2	2	2	2	2	1	3	99	1	3	99	1		
122	5	9.3	2	2	2	4	1	3	99	1	3	99	1		
122	1	3.3	2	2	2	4	1	3	99	1	3	99	1		
122	5	9.2	2	2	2	1	4	1	98	1	1	98	1		
122	1	0.8	2	2	2	1	4	2	10	2	2	5	2		
122	1	1.1	2	2	2	1	4	2	1	2	2	4	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
122	5	13.6	2	2	2	1	4	2	6	2	2	6	2		
122	2	3.2	2	2	2	1	4	2	7	2	2	6	2		
122	1	1.2	2	2	2	1	4	2	8	2	2	2	2		
122	1	2	2	2	2	1	4	2	2	2	2	6	2		
122	1	0.8	2	2	2	1	4	2	1	2	2	1	2		
122	2	1.2	2	2	2	1	4	2	2	2	2	6	2		
122	1	0.8	2	2	2	1	4	2	2	2	2	8	2		
122	2	1.4	2	2	2	1	4	2	2	2	2	2	2		
122	1	0.9	2	2	2	1	4	2	6	2	2	6	2		
122	3	1.7	2	2	2	1	4	1	98	1	1	98	1		
122	1	3.3	2	2	2	1	4	1	6	2	1	6	2	163	1
122	2	1.9	2	2	2	1	2	2	8	2	3	99	1		
122	1	4.4	2	2	2	1	2	2	2	2	3	99	1		
122	1	1.4	2	2	2	1	3	3	99	1	2	9	5		
122	1	1.1	2	2	2	1	4	1	6	2	2	2	5		
122	39	53	2	2	3	1	1	3	99	1	3	99	1		
122	1	0.4	2	2	3	3	1	3	99	1	3	99	1		
122	3	7.5	2	1	2	1	1	3	99	1	3	99	1		
122	6	9.9	1	2	2	1	1	3	99	1	3	99	1		
122	4	5.6	1	2	2	4	1	3	99	1	3	99	1		
122	2	3.3	1	2	2	1	4	2	6	2	2	6	2		
122	1	7.3	1	2	2	1	4	2	8	2	2	8	2		
122	1	4.2	1	2	2	1	4	2	7	2	2	7	2		
122	1	2.2	1	2	2	1	4	2	7	2	2	6	2		
122	1	0.7	1	2	2	1	4	2	2	2	2	6	2		
123	2	1.1	3	2	2	1	1	3	99	1	3	99	1		
123	2	3.9	3	2	2	1	4	1	98	1	1	98	1		
123	2	2.3	3	2	2	1	4	1	98	1	1	98	1		
123	1	5	3	2	2	1	4	1	2	2	1	2	2	124	1
123	3	2.9	3	2	2	1	2	1	98	1	3	99	1		
123	3	8	3	2	2	1	4	2	1	5	2	2	5		
123	1	3.7	3	2	2	1	2	2	1	5	3	99	1		
123	1	1.8	3	2	2	1	4	2	1	5	2	1	2		
123	1	2.5	3	2	3	1	1	3	99	1	3	99	1		
123	1	0.4	3	1	4	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
123	171	248.5	2	2	2	1	1	3	99	1	3	99	1		
123	1	8.9	2	2	2	1	1	3	99	1	3	99	1	180	2
123	21	13.1	2	2	2	1	1	3	99	1	3	99	1		
123	1	2.1	2	2	2	3	1	3	99	1	3	99	1		
123	18	30.6	2	2	2	2	1	3	99	1	3	99	1		
123	3	5.6	2	2	2	2	1	3	99	1	3	99	1		
123	23	55.5	2	2	2	4	1	3	99	1	3	99	1		
123	1	1.7	2	2	2	4	1	3	99	1	3	99	1		
123	3	16.9	2	2	2	1	4	1	98	1	1	98	1		
123	2	9	2	2	2	1	4	2	8	2	2	8	2		
123	2	5.7	2	2	2	1	4	2	7	2	1	6	2		
123	3	13.7	2	2	2	1	4	2	8	2	1	6	2		
123	4	5.6	2	2	2	1	4	2	8	2	2	6	2		
123	11	21.8	2	2	2	1	4	2	6	2	2	6	2		
123	2	2.6	2	2	2	1	4	2	4	2	2	8	2		
123	1	2.6	2	2	2	1	4	2	7	2	2	2	2		
123	1	1.1	2	2	2	1	4	2	7	2	1	10	2		
123	1	2.2	2	2	2	1	4	2	8	2	2	2	2		
123	2	9.1	2	2	2	1	4	2	6	2	2	2	2		
123	3	6.6	2	2	2	1	4	2	4	2	2	4	2		
123	1	1.9	2	2	2	1	4	2	1	2	2	2	2		
123	4	4.1	2	2	2	1	4	2	2	2	2	2	2		
123	2	17.3	2	2	2	1	4	2	2	2	2	6	2		
123	1	1.1	2	2	2	1	4	2	8	2	2	8	2		
123	1	0.8	2	2	2	1	4	2	2	2	2	8	2		
123	4	23.7	2	2	2	1	4	2	1	2	2	6	2		
123	1	2.7	2	2	2	1	4	2	10	2	2	8	2		
123	1	1.7	2	2	2	1	4	2	5	2	2	1	2		
123	1	13.5	2	2	2	1	4	2	5	2	2	5	2	115	1
123	5	8.9	2	2	2	1	4	1	98	1	1	98	1		
123	7	23.5	2	2	2	1	2	1	98	1	3	99	1		
123	3	4.9	2	2	2	1	2	2	4	2	3	99	1		
123	2	2.8	2	2	2	1	2	2	2	2	3	99	1		
123	3	2.6	2	2	2	1	2	2	1	2	3	99	1		
123	2	3.6	2	2	2	1	2	2	7	2	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
123	7	12.9	2	2	2	1	2	2	8	2	3	99	1		
123	7	9	2	2	2	1	2	1	98	1	3	99	1		
123	1	1.6	2	2	2	1	3	3	99	1	3	99	2		
123	2	3	2	2	2	1	3	3	99	1	2	8	2		
123	1	14.5	2	2	2	1	4	2	4	3	2	4	3		
123	1	0.8	2	2	2	1	4	2	1	5	2	2	5		
123	1	3.5	2	2	2	1	4	2	3	5	2	8	5		
123	2	4.7	2	2	2	1	4	1	98	1	1	98	1		
123	3	4.8	2	2	2	1	4	2	1	5	2	6	2		
123	1	0.4	2	2	2	1	4	2	1	5	2	2	2		
123	1	0.4	2	2	2	1	4	2	8	5	2	9	2		
123	1	16.3	2	2	2	1	4	2	6	5	1	6	2	131	1
123	1	34.1	2	2	2	1	4	2	4	5	2	8	2	136	1
123	1	0.2	2	2	2	1	2	1	98	1	3	99	1		
123	152	269.5	2	2	3	1	1	3	99	1	3	99	1		
123	8	9.1	2	2	3	1	1	3	99	1	3	99	1		
123	2	24.9	2	2	3	3	1	3	99	1	3	99	1		
123	5	5.8	2	2	3	2	1	3	99	1	3	99	1		
123	2	4.2	2	2	3	4	1	3	99	1	3	99	1		
123	1	5.1	2	1	2	1	1	3	99	1	3	99	1		
123	5	4.1	2	1	4	1	1	3	99	1	3	99	1		
123	1	0.3	2	1	4	1	1	3	99	1	3	99	1		
123	34	38.1	1	2	2	1	1	3	99	1	3	99	1		
123	2	1.4	1	2	2	2	1	3	99	1	3	99	1		
123	3	5.1	1	2	2	1	4	1	98	1	1	98	1		
123	1	0.8	1	2	2	1	4	2	6	2	2	6	2		
123	1	1.5	1	2	2	1	4	2	6	2	2	9	2		
123	3	10	1	2	2	1	4	2	6	5	2	6	5		
123	1	3.1	1	2	2	1	4	2	4	5	2	8	5		
123	1	1.2	1	2	2	1	4	2	8	5	2	4	5		
123	1	19.8	1	2	2	1	4	2	7	5	1	6	2		
123	1	1.3	1	2	2	1	2	2	7	5	3	99	1		
123	1	1.2	1	2	2	1	4	2	2	5	2	8	2		
123	2	5.1	1	2	2	1	4	2	6	0	2	6	5		
123	1	2.3	1	2	2	1	4	1	6	2	2	2	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
123	3	11.4	1	2	3	1	1	3	99	1	3	99	1		
124	4	4.2	3	2	2	1	1	3	99	1	3	99	1		
124	9	12.2	3	2	2	1	4	1	98	1	1	98	1		
124	3	4.2	3	2	2	1	4	2	1	5	2	1	5		
124	3	3.7	3	2	2	1	2	2	1	5	3	99	1		
124	1	0.6	3	2	2	1	4	2	1	5	2	6	2		
124	5	7	3	2	2	1	4	2	1	5	2	2	2		
124	1	1.1	3	1	4	1	4	2	1	4	2	1	4		
124	1	0.6	3	1	4	1	4	2	2	5	2	2	5		
124	402	593.8	2	2	2	1	1	3	99	1	3	99	1		
124	3	19.6	2	2	2	3	1	3	99	1	3	99	1		
124	48	88.7	2	2	2	2	1	3	99	1	3	99	1		
124	35	100.1	2	2	2	4	1	3	99	1	3	99	1		
124	35	102.8	2	2	2	1	4	1	98	1	1	98	1		
124	2	6.8	2	2	2	1	4	2	9	2	2	4	2		
124	3	4.9	2	2	2	1	4	2	9	2	2	7	2		
124	3	3.8	2	2	2	1	4	2	9	2	2	9	2		
124	2	9.3	2	2	2	1	4	2	4	2	2	7	2		
124	4	4.4	2	2	2	1	4	2	4	2	2	8	2		
124	4	3.9	2	2	2	1	4	2	4	2	2	4	2		
124	3	5.7	2	2	2	1	4	2	4	2	2	2	2		
124	2	13.6	2	2	2	1	4	2	4	2	2	1	2		
124	16	25.1	2	2	2	1	4	2	8	2	2	8	2		
124	2	19.6	2	2	2	1	4	2	8	2	2	9	2		
124	2	3.7	2	2	2	1	4	2	8	2	2	2	2		
124	1	1.2	2	2	2	1	4	2	7	2	2	6	2		
124	5	10.7	2	2	2	1	4	2	7	2	2	7	2		
124	2	5.6	2	2	2	1	4	2	7	2	2	8	2		
124	3	22.3	2	2	2	1	4	2	7	2	2	4	2		
124	1	3.4	2	2	2	1	4	2	7	2	2	2	2		
124	4	5.7	2	2	2	1	4	2	2	2	2	2	2		
124	2	3.4	2	2	2	1	4	2	2	2	2	1	2		
124	5	29	2	2	2	1	4	2	1	2	1	6	2		
124	4	5.8	2	2	2	1	4	2	1	2	2	6	2		
124	2	13.2	2	2	2	1	4	2	1	2	1	2	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
124	1	1.9	2	2	2	1	4	2	1	2	2	2	2		
124	1	2.2	2	2	2	1	4	2	1	2	2	4	2		
124	7	8.4	2	2	2	1	4	2	1	2	2	1	2		
124	1	3.3	2	2	2	1	4	2	4	2	2	4	2		
124	3	7.6	2	2	2	1	4	2	6	2	2	6	2		
124	3	6.9	2	2	2	1	4	2	6	2	2	8	2		
124	2	7.1	2	2	2	1	4	2	6	2	2	2	2		
124	2	3.8	2	2	2	1	4	2	1	2	2	1	2		
124	1	6.2	2	2	2	1	4	2	6	2	2	1	2		
124	1	4.6	2	2	2	1	4	2	1	2	2	2	2		
124	1	2	2	2	2	1	4	2	6	2	2	8	2		
124	1	4.4	2	2	2	1	4	2	8	2	2	4	2		
124	1	1.2	2	2	2	1	4	2	8	2	2	8	2		
124	1	1.7	2	2	2	1	4	2	6	2	2	6	2		
124	1	1.4	2	2	2	1	4	2	4	2	2	4	2		
124	1	2.8	2	2	2	1	4	2	1	2	2	1	2		
124	1	2.6	2	2	2	1	4	2	2	2	2	2	2		
124	1	1.2	2	2	2	1	4	2	4	2	2	1	2		
124	2	1.3	2	2	2	1	4	2	8	2	2	8	2		
124	2	0.9	2	2	2	1	4	2	6	2	2	8	2		
124	1	19	2	2	2	1	4	2	5	2	2	8	2	120	1
124	1	2.2	2	2	2	1	4	2	6	2	2	6	2	85	1
124	1	4.8	2	2	2	1	4	2	9	2	2	11	2	144	1
124	10	55.1	2	2	2	1	2	1	98	1	3	99	1		
124	4	9	2	2	2	1	2	2	6	2	3	99	1		
124	7	11.6	2	2	2	1	2	2	8	2	3	99	1		
124	5	15.5	2	2	2	1	2	2	4	2	3	99	1		
124	2	3.2	2	2	2	1	2	2	2	2	3	99	1		
124	7	13.2	2	2	2	1	2	2	1	2	3	99	1		
124	1	7.9	2	2	2	1	2	2	5	2	3	99	1	170	1
124	2	3.2	2	2	2	1	3	3	99	1	2	6	2		
124	4	5.3	2	2	2	1	3	3	99	1	2	4	2		
124	1	0.9	2	2	2	1	3	3	99	1	2	6	2		
124	1	0.8	2	2	2	1	3	3	99	1	2	1	2		
124	1	2.1	2	2	2	1	4	2	8	5	2	8	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
124	1	6.3	2	2	2	1	4	2	7	3	2	7	3		
124	2	3	2	2	2	1	4	2	8	5	2	8	5		
124	1	0.6	2	2	2	1	4	2	8	5	2	2	5		
124	5	13.8	2	2	2	1	4	2	4	5	2	2	5		
124	1	2.5	2	2	2	1	4	2	4	5	2	1	5		
124	1	1.6	2	2	2	1	4	2	4	5	2	9	5		
124	8	16.2	2	2	2	1	4	2	2	5	2	2	5		
124	4	3.1	2	2	2	1	4	2	1	5	2	4	5		
124	1	2.7	2	2	2	1	4	2	1	5	2	6	5		
124	1	1	2	2	2	1	4	2	1	5	2	8	5		
124	1	0.58	2	2	2	1	2	2	7	5	3	99	1		
124	1	0.7	2	2	2	1	4	2	7	5	2	1	2		
124	1	0.3	2	2	2	1	2	2	8	5	0	0	0		
124	2	6.1	2	2	2	1	4	2	8	5	2	2	2		
124	1	2.8	2	2	2	1	2	2	4	5	3	99	1		
124	1	7.9	2	2	2	1	4	2	4	5	1	6	2		
124	1	1	2	2	2	1	4	2	4	5	2	8	2		
124	1	0.6	2	2	2	1	4	2	4	5	2	2	2		
124	1	0.4	2	2	2	1	2	2	4	5	3	99	1		
124	8	12.7	2	2	2	1	2	2	1	5	3	99	1		
124	2	3	2	2	2	1	4	2	1	5	2	6	2		
124	2	1.7	2	2	2	1	4	2	1	5	2	2	2		
124	1	1.4	2	2	2	1	4	2	1	5	2	1	2		
124	3	9.8	2	2	2	1	4	2	6	2	2	6	5		
124	1	1.2	2	2	2	1	3	0	0	0	2	6	5		
124	2	10	2	2	2	1	4	2	7	2	2	8	5		
124	4	18.5	2	2	2	1	4	2	7	2	2	4	5		
124	1	1.8	2	2	2	1	4	2	8	2	2	4	5		
124	2	1.3	2	2	2	1	3	0	0	0	2	1	5		
124	1	0.4	2	2	2	1	4	1	6	2	2	1	5		
124	2	2.8	2	2	2	1	4	2	8	2	2	2	5		
124	1	5.1	2	2	2	1	4	2	6	2	2	2	5		
124	1	1.4	2	2	2	1	4	2	2	2	2	2	5		
124	280	345.6	2	2	3	1	1	3	99	1	3	99	1		
124	4	32.7	2	2	3	3	1	3	99	1	3	99	1		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
124	16	28.5	2	2	3	2	1	3	99	1	3	99	1		
124	11	20.8	2	2	3	4	1	3	99	1	3	99	1		
124	4	3.9	2	1	2	1	1	3	99	1	3	99	1		
124	5	20.7	2	1	4	1	1	3	99	1	3	99	1		
124	13	30.4	1	2	2	1	1	3	99	1	3	99	1		
124	7	5.7	1	2	2	2	1	3	99	1	3	99	1		
124	5	6.4	1	2	2	4	1	3	99	1	3	99	1		
124	5	7.5	1	2	2	1	4	1	98	1	1	98	1		
124	1	2.6	1	2	2	1	4	2	6	2	2	6	2		
124	1	1	1	2	2	1	4	2	8	2	2	8	2		
124	1	1.3	1	2	2	1	4	2	8	2	1	6	2		
124	1	2.1	1	1	2	1	1	3	99	1	3	99	1		
124	1	0.4	1	1	4	1	1	3	99	1	3	99	1		
124	1	7	1	2	2	2	4	2	9	2	1	8	2	152	0
124	1	13	1	2	2	2	4	2	9	2	1	8	2	152	0
125	1	1.6	3	2	2	1	2	1	98	1	3	99	1		
125	4	29.5	3	2	2	1	2	2	2	3	3	99	1		
125	14	9.4	2	2	2	1	1	3	99	1	3	99	1		
125	57	271.6	2	2	2	2	1	3	99	1	3	99	1		
125	20	77.9	2	2	2	4	1	3	99	1	3	99	1		
125	10	33.8	2	2	2	1	4	1	98	1	1	98	1		
125	1	2.1	2	2	2	1	4	2	1	2	2	2	2		
125	1	4.9	2	2	2	1	4	2	2	2	2	8	2		
125	1	14.1	2	2	2	1	4	2	4	3	2	4	2		
125	1	2.9	2	2	2	1	4	1	2	2	2	4	2		
125	1	1.5	2	2	2	1	4	2	4	2	2	4	2		
125	2	4.9	2	2	2	1	4	2	8	2	2	2	2		
125	1	0.8	2	2	2	1	4	2	8	2	2	8	2		
125	2	19.6	2	2	2	1	4	2	8	2	2	4	2		
125	2	10.8	2	2	2	1	4	2	8	2	2	7	2		
125	5	28.7	2	2	2	1	4	2	7	2	2	7	2		
125	4	18	2	2	2	1	4	2	6	2	2	6	2		
125	1	6.9	2	2	2	1	4	2	6	2	2	7	2		
125	2	4.9	2	2	2	1	4	2	6	2	2	8	2		
125	2	5.1	2	2	2	1	4	2	4	2	1	8	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
125	1	2.3	2	2	2	1	4	1	6	2	2	2	2		
125	1	1.9	2	2	2	1	4	2	6	2	2	2	2		
125	1	12.6	2	2	2	1	4	1	10	2	1	10	2	123	1
125	1	11.7	2	2	2	1	4	2	9	2	1	8	2	97	1
125	1	3.9	2	2	2	1	4	2	8	2	1	2	2	180	1
125	11	92.8	2	2	2	1	2	2	9	0	3	99	1		
125	1	15.7	2	2	2	1	2	1	6	2	0	0	0		
125	2	12.6	2	2	2	1	2	2	6	2	3	99	1		
125	1	2	2	2	2	1	2	2	4	2	3	99	1		
125	2	3.7	2	2	2	1	2	2	1	2	3	99	1		
125	1	17.4	2	2	2	1	2	1	98	1	3	99	1	180	1
125	1	12.1	2	2	2	1	2	1	6	2	3	99	1	153	0
125	1	8.1	2	2	2	1	2	1	6	2	3	99	1	1	180
125	1	2	2	2	2	1	3	3	99	1	2	2	2		
125	1	3.4	2	2	2	1	4	2	7	5	2	7	5		
125	3	17.5	2	2	2	1	4	2	11	3	2	11	3		
125	1	4.2	2	2	2	1	4	2	3	5	2	8	5		
125	1	0.7	2	2	2	1	4	2	1	5	2	2	5		
125	2	1.3	2	2	2	1	4	2	6	5	2	6	5		
125	1	4.6	2	2	2	1	2	2	7	5	3	99	1		
125	1	5.8	2	2	2	1	4	2	8	5	1	8	2		
125	3	8.6	2	2	2	1	2	2	2	5	3	99	1		
125	1	5.5	2	2	2	1	4	2	2	5	2	8	2		
125	1	0.9	2	2	2	1	4	2	1	5	2	8	2		
125	1	8.1	2	2	2	1	2	2	2	5	3	99	1		
125	2	3.1	2	2	2	1	4	2	6	2	2	6	5		
125	1	3.3	2	2	2	1	4	1	6	2	2	8	5		
125	2	5.6	2	2	2	1	4	2	4	2	2	4	5		
125	3	3.3	2	2	2	1	4	2	1	2	2	2	5		
125	1	7.4	2	2	2	1	4	1	7	2	2	2	5		
125	5	13	2	2	2	1	3	3	99	1	2	1	5		
125	3	16.1	2	2	3	1	1	3	99	1	3	99	1		
125	8	23	2	2	3	1	1	3	99	1	3	99	1		
125	8	36.9	2	2	3	1	1	3	99	1	3	99	1		
125	1	3.8	2	2	3	1	1	3	99	1	3	99	1	152	0

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
125	1	14.3	2	2	3	3	1	3	99	1	3	99	1		
125	1	14	2	2	3	1	2	1	4	5	3	99	1		
125	1	1.4	2	1	4	1	4	2	8	2	2	8	2		
125	6	6.5	1	2	2	1	1	3	99	1	3	99	1		
125	1	0.2	1	2	2	2	1	3	99	1	3	99	1		
125	4	23.2	1	2	2	4	1	3	99	1	3	99	1		
125	2	12.8	1	2	2	1	4	1	8	2	1	8	2		
125	1	2.4	1	2	2	1	4	2	9	2	1	8	2		
125	1	1.3	1	2	2	1	4	1	7	2	1	7	2		
125	5	21.4	1	2	2	1	4	2	6	2	2	6	2		
125	2	8.8	1	2	2	1	2	1	7	2	3	99	1		
125	1	37.3	1	2	2	1	2	1	6	2	3	99	1	154	0
125	1	13.5	1	2	2	1	4	2	7	3	2	9	3		
125	1	0.8	1	2	2	1	4	2	8	5	2	8	5		
125	1	119.6	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	97.6	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	19.1	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	31.8	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	37.7	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	15.4	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	122.8	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	54.1	2	2	2	2	2	2	9	2	3	99	1	151	1
125	1	12.5	2	2	2	2	4	2	8	2	1	8	2	126	1
125	1	13.6	3	2	2	2	2	2	9	2	3	99	1	123	1
125	1	22.6	2	2	2	2	4	1	8	2	1	8	2	100	1
125	1	8.1	2	2	2	2	4	1	8	2	1	8	2	105	1
126	1	0.4	0	0	0	0	0	0	0	0	0	0	0		
126	2	4.5	3	2	2	1	1	3	99	1	3	99	1		
126	1	2.3	3	2	2	1	2	2	1	5	3	99	1		
126	5	22.4	2	2	2	1	1	3	99	1	3	99	1		
126	1	1.3	2	2	2	1	1	3	99	1	3	99	1		
126	9	13.4	2	2	2	1	1	3	99	1	3	99	1		
126	1	10	2	2	2	3	1	3	99	1	3	99	1		
126	2	3.9	2	2	2	2	1	3	99	1	3	99	1		
126	10	34.5	2	2	2	2	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
126	2	25.6	2	2	2	4	1	3	99	1	3	99	1		
126	4	14.6	2	2	2	4	1	3	99	1	3	99	1		
126	3	13.4	2	2	2	1	4	1	98	1	1	98	1		
126	2	8.1	2	2	2	1	4	1	98	1	1	98	1		
126	1	1.4	2	2	2	1	4	2	6	2	2	6	2		
126	1	4.2	2	2	2	1	4	2	8	2	1	6	2		
126	1	8.9	2	2	2	1	4	2	7	2	1	6	2		
126	1	2.5	2	2	2	1	4	1	98	1	1	98	1		
126	4	25.7	2	2	2	1	4	1	98	1	1	98	1		
126	2	6.4	2	2	2	1	4	2	6	2	2	6	2		
126	2	7	2	2	2	1	4	2	8	2	2	8	2		
126	4	16.9	2	2	2	1	4	2	2	2	2	6	2		
126	1	1.5	2	2	2	1	4	2	1	2	2	1	2		
126	1	11.5	2	2	2	1	4	1	98	1	1	98	1		
126	3	44.5	2	2	2	1	2	1	98	1	3	99	1		
126	1	2.2	2	2	2	1	2	1	6	2	3	99	1		
126	1	5.9	2	2	2	1	2	2	2	2	3	99	1		
126	1	53.4	2	2	2	1	3	0	0	0	2	2	2	141	1
126	1	19.7	2	2	2	1	3	0	0	0	2	2	2	141	1
126	3	14.5	2	2	2	1	4	2	2	5	2	2	5		
126	1	12.5	2	2	2	1	4	2	7	5	2	8	5		
126	1	2.9	2	2	2	1	4	2	4	5	1	6	5		
126	1	2.4	2	2	2	1	4	2	1	5	2	1	5		
126	1	3.1	2	2	2	1	4	2	8	3	2	3	3		
126	2	8.3	2	2	2	1	4	2	11	5	2	11	5		
126	1	8.3	2	2	2	1	4	2	6	3	2	6	2		
126	1	0.9	2	2	2	1	4	1	8	2	2	5	5		
126	21	86.9	2	2	3	1	1	3	99	1	3	99	1		
126	1	54	2	1	2	1	1	3	99	1	3	99	1		
126	5	5.3	1	2	2	1	1	3	99	1	3	99	1		
126	1	2.7	1	2	2	1	4	2	8	2	2	9	2		
126	1	44.1	1	2	2	1	4	2	8	2	2	8	2	129	1
126	1	0.5	1	2	2	1	2	2	9	2	3	99	1		
127	2	0.8	3	2	2	1	1	3	99	1	3	99	1		
127	1	0.3	3	1	4	1	4	2	1	4	2	1	4		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
127	17	20.4	2	2	2	1	1	3	99	1	3	99	1		
127	66	114.1	2	2	2	1	1	3	99	1	3	99	1		
127	1	4	2	2	2	3	1	3	99	1	3	99	1		
127	6	7.4	2	2	2	2	1	3	99	1	3	99	1		
127	24	41.1	2	2	2	2	1	3	99	1	3	99	1		
127	8	35.7	2	2	2	4	1	3	99	1	3	99	1		
127	16	35.7	2	2	2	4	1	3	99	1	3	99	1		
127	37	78.3	2	2	2	1	4	1	98	1	1	98	1		
127	2	47.7	2	2	2	1	4	1	98	1	1	98	1		
127	4	10.1	2	2	2	1	4	1	98	2	1	98	2		
127	2	2.2	2	2	2	1	4	2	5	2	2	5	2		
127	1	0.6	2	2	2	1	4	2	6	2	2	4	2		
127	1	2	2	2	2	1	4	2	8	2	2	4	2		
127	2	10.9	2	2	2	1	4	2	4	2	2	4	2		
127	1	0.6	2	2	2	1	4	2	2	2	2	2	2		
127	2	5.8	2	2	2	1	4	2	2	2	2	6	2		
127	1	2.4	2	2	2	1	4	2	2	2	2	4	2		
127	1	0.6	2	2	2	1	4	2	1	2	2	6	2		
127	1	20.1	2	2	2	1	4	2	6	2	2	5	2	150	1
127	10	14.9	2	2	2	1	2	1	98	1	3	99	1		
127	9	9.3	2	2	2	1	2	2	2	2	3	99	1		
127	1	2.4	2	2	2	1	2	2	3	2	3	99	1		
127	3	3	2	2	2	1	2	2	4	2	3	99	1		
127	2	1.2	2	2	2	1	2	2	8	2	3	99	1		
127	1	7.3	2	2	2	1	2	2	9	2	3	99	1	134	1
127	4	15.1	2	2	2	1	3	3	99	1	1	98	1		
127	2	1.1	2	2	2	1	3	3	99	1	2	6	2		
127	2	6.6	2	2	2	1	3	3	99	1	2	6	2		
127	1	2.9	2	2	2	1	3	3	99	1	2	4	2		
127	2	3.1	2	2	2	1	3	3	99	1	2	2	2		
127	5	11.5	2	2	2	1	4	1	98	1	1	98	1		
127	1	12.7	2	2	2	1	4	2	7	5	2	3	5		
127	2	4.9	2	2	2	1	4	2	6	5	2	8	5		
127	1	1.5	2	2	2	1	4	2	1	5	2	3	5		
127	1	1.6	2	2	2	1	4	2	8	5	2	8	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
127	1	6.2	2	2	2	1	4	2	2	5	2	6	5		
127	3	2.1	2	2	2	1	2	1	98	1	3	99	1		
127	1	8.4	2	2	2	1	2	2	1	3	3	99	1		
127	1	1.7	2	2	2	1	2	2	3	3	3	99	1		
127	1	0.8	2	2	2	1	2	2	4	5	3	99	1		
127	1	0.8	2	2	2	1	2	2	3	3	3	99	1		
127	3	6.4	2	2	2	1	3	3	99	1	1	98	1		
127	1	2.4	2	2	2	1	4	2	4	2	2	4	5		
127	1	0.6	2	2	2	1	3	0	0	0	2	9	5		
127	1	0.3	2	2	2	1	3	0	0	0	2	1	5		
127	1	0.5	2	2	2	1	4	2	8	2	2	1	4		
127	1	0.5	2	2	2	1	3	3	99	1	2	1	5		
127	1	1.1	2	2	2	1	4	1	6	2	2	1	5		
127	53	74.8	2	2	3	1	1	3	99	1	3	99	1		
127	34	68.8	2	2	3	1	1	3	99	1	3	99	1		
127	1	3.5	2	2	3	2	1	3	99	1	3	99	1		
127	1	2.5	2	2	3	4	1	3	99	1	3	99	1		
127	1	6.7	2	1	2	1	1	3	99	1	3	99	1		
127	5	2.2	1	2	2	1	1	3	99	1	3	99	1		
127	14	12.8	1	2	2	1	1	3	99	1	3	99	1		
127	2	1	1	2	2	2	1	3	99	1	3	99	1		
127	7	3.8	1	2	2	2	1	3	99	1	3	99	1		
127	1	0.5	1	2	2	4	1	3	99	1	3	99	1		
127	1	0.6	1	2	2	4	1	3	99	1	3	99	1		
127	2	1.1	1	2	2	1	4	1	98	1	1	98	1		
127	1	3	1	2	2	1	4	1	98	1	1	98	1		
127	1	5.6	1	2	2	1	4	1	9	2	1	9	2		
127	3	20	1	2	2	1	4	1	98	2	1	98	2		
127	1	0.5	1	2	2	1	4	2	9	2	1	6	2		
127	2	12.8	1	2	2	1	2	2	4	2	3	99	1		
127	2	1	1	2	2	1	2	1	98	1	3	99	1		
127	4	4.7	1	2	3	1	1	3	99	1	3	99	1		
128	2	4.4	3	2	2	1	1	3	99	1	3	99	1		
128	10	8.5	2	2	2	1	1	3	99	1	3	99	1		
128	42	26.6	2	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
128	1	2.9	2	2	2	2	1	3	99	1	3	99	1		
128	22	22.5	2	2	2	2	1	3	99	1	3	99	1		
128	3	1.7	2	2	2	4	1	3	99	1	3	99	1		
128	12	19.3	2	2	2	4	1	3	99	1	3	99	1		
128	1	0.8	2	2	2	1	4	2	2	2	2	2	2		
128	2	5.1	2	2	2	1	4	1	98	1	1	98	1		
128	3	13.3	2	2	2	1	4	2	6	2	1	2	2		
128	1	0.7	2	2	2	1	4	1	2	2	2	8	2		
128	1	0.4	2	2	2	1	4	2	1	2	2	8	2		
128	3	2.2	2	2	2	1	4	2	6	2	2	6	2		
128	59	77.5	2	2	2	1	4	1	98	1	1	98	1		
128	1	5.6	2	2	2	1	2	1	6	2	3	99	1		
128	1	1.9	2	2	2	1	2	2	8	2	3	99	1		
128	17	16.4	2	2	2	1	2	1	98	1	3	99	1		
128	10	19	2	2	2	1	3	3	99	1	1	98	1		
128	4	9.6	2	2	2	1	4	1	98	1	1	98	1		
128	3	1.1	2	2	2	1	2	1	98	1	3	99	1		
128	5	4.8	2	2	2	1	3	3	99	1	1	98	1		
128	3	1.7	2	2	3	1	1	3	99	1	3	99	1		
128	34	37.4	2	2	3	1	1	3	99	1	3	99	1		
128	3	11.8	2	1	2	1	1	3	99	1	3	99	1		
128	5	4.8	1	2	2	1	1	3	99	1	3	99	1		
128	1	1	1	2	2	1	1	3	99	1	3	99	1		
128	1	3.4	1	2	2	1	4	2	9	2	2	9	2		
128	2	1.6	1	2	2	1	4	1	98	1	1	98	1		
128	1	1.1	1	2	2	1	2	1	98	1	3	99	1		
129	1	5.7	3	2	2	1	1	3	99	1	3	99	1		
129	1	1	3	2	2	1	4	1	98	1	1	98	1		
129	1	26.8	3	2	2	1	4	1	2	2	1	2	2	110	2
129	3	9.2	3	2	2	1	4	1	98	1	1	98	1		
129	1	1.4	3	2	2	1	4	1	98	1	1	98	1		
129	1	10	3	2	2	1	4	1	1	2	1	1	2	122	1
129	1	10.4	3	2	2	1	4	2	4	2	2	4	2	183	1
129	1	5	3	2	2	1	4	2	4	2	2	4	2	184	1
129	8	7.6	3	2	2	1	2	1	98	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
129	6	11.4	3	2	2	1	2	1	98	1	3	99	1		
129	2	5.2	3	2	2	1	2	2	2	2	3	99	1		
129	6	22.1	3	2	2	1	2	2	2	3	3	99	1		
129	4	10.9	3	2	2	1	2	2	1	5	3	99	1		
129	2	10.4	3	2	2	1	4	2	2	5	2	2	2		
129	1	0.7	3	2	2	1	3	3	99	1	1	1	5		
129	1	21.5	3	1	3	3	1	3	99	1	3	99	1		
129	1	0.3	3	1	4	1	4	1	1	2	1	1	4		
129	301	654.6	2	2	2	1	1	3	99	1	3	99	1		
129	1	3.2	2	2	2	1	1	3	99	1	3	99	1		
129	1	47.6	2	2	2	1	1	3	99	1	3	99	1	135	2
129	348	723.3	2	2	2	1	1	3	99	1	3	99	1		
129	25	54.2	2	2	2	1	1	3	99	1	3	99	1		
129	9	77.4	2	2	2	3	1	3	99	1	3	99	1		
129	3	20.3	2	2	2	3	1	3	99	1	3	99	1		
129	1	21.7	2	2	2	3	1	3	99	1	3	99	1		
129	13	34.8	2	2	2	2	1	3	99	1	3	99	1		
129	38	109.5	2	2	2	2	1	3	99	1	3	99	1		
129	3	10.2	2	2	2	2	1	3	99	1	3	99	1		
129	1	27	2	2	2	2	1	3	99	1	3	99	1		
129	44	133	2	2	2	4	1	3	99	1	3	99	1		
129	69	232.4	2	2	2	4	1	3	99	1	3	99	1		
129	6	11.7	2	2	2	4	1	3	99	1	3	99	1		
129	17	117.3	2	2	2	1	4	1	98	1	1	98	1		
129	8	60.6	2	2	2	1	4	2	6	2	2	6	2		
129	2	17.4	2	2	2	1	4	2	11	2	2	11	2		
129	1	2.5	2	2	2	1	4	2	2	2	2	2	2		
129	1	1.2	2	2	2	1	4	2	9	2	2	1	2		
129	3	10.6	2	2	2	1	4	2	8	2	2	4	2		
129	2	12.3	2	2	2	1	4	2	8	2	2	8	2		
129	1	3.6	2	2	2	1	4	1	8	2	1	1	2		
129	1	4.7	2	2	2	1	4	2	2	2	2	4	2		
129	1	2.7	2	2	2	1	4	2	1	0	1	5	2		
129	1	7.6	2	2	2	1	4	1	3	2	2	6	2		
129	1	3.1	2	2	2	1	4	2	1	2	2	8	2		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
129	1	11.2	2	2	2	1	4	1	3	2	1	3	2		
129	1	11.3	2	2	2	1	4	1	6	2	1	9	0	112	1
129	1	10.3	2	2	2	1	4	1	3	2	1	3	2	109	0
129	15	69.5	2	2	2	1	4	1	98	1	1	98	1		
129	1	10.7	2	2	2	1	4	2	1	2	1	4	2		
129	1	14.5	2	2	2	1	4	2	1	2	1	4	2		
129	1	6	2	2	2	1	4	2	8	2	2	4	2		
129	1	3.3	2	2	2	1	4	2	7	2	2	7	2		
129	1	4.2	2	2	2	1	4	2	8	2	2	4	2		
129	1	5.5	2	2	2	1	4	1	4	2	1	1	2		
129	1	2.6	2	2	2	1	4	1	9	2	1	9	2		
129	2	4	2	2	2	1	4	1	98	1	1	98	1		
129	1	2.9	2	2	2	1	4	2	6	2	2	6	2		
129	1	7.8	2	2	2	1	4	1	2	2	1	8	2	104	1
129	1	10.6	2	2	2	1	4	1	6	2	1	9	2	130	1
129	1	5.2	2	2	2	1	4	2	9	2	2	9	2		
129	1	4	2	2	2	1	4	1	3	0	2	8	2		
129	4	18.2	2	2	2	1	4	2	6	2	2	6	2		
129	1	1.2	2	2	2	1	4	2	5	2	2	10	2		
129	1	13	2	2	2	1	4	2	2	2	2	7	2		
129	1	1.8	2	2	2	1	4	2	4	2	2	4	2		
129	1	85	2	2	2	1	4	1	6	2	1	2	2	122	1
129	1	26.2	2	2	2	1	4	2	8	2	1	4	2	163	1
129	1	16.5	2	2	2	1	4	2	9	2	2	1	2	105	1
129	1	28.1	2	2	2	1	4	1	6	2	1	6	2	137	1
129	1	17.6	2	2	2	1	4	1	6	2	1	6	2	145	1
129	1	9.6	2	2	2	1	4	2	6	2	2	6	2	125	1
129	18	139.1	2	2	2	1	2	1	98	2	3	99	1		
129	6	22.9	2	2	2	1	2	2	2	2	3	99	1		
129	4	9.5	2	2	2	1	2	2	11	2	3	99	1		
129	3	8.7	2	2	2	1	2	2	6	2	3	99	1		
129	2	9.1	2	2	2	1	2	2	7	2	3	99	1		
129	1	3.5	2	2	2	1	2	2	8	2	3	99	1		
129	1	3.7	2	2	2	1	2	2	9	2	3	99	1		
129	1	6.2	2	2	2	1	2	1	6	2	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
129	1	25	2	2	2	1	2	1	6	2	3	99	1	143	1
129	1	11.4	2	2	2	1	2	1	6	2	3	99	1	180	1
129	1	16.3	2	2	2	1	2	1	6	2	3	99	1	126	1
129	1	2.7	2	2	2	1	2	1	6	2	3	99	1	131	1
129	5	33.3	2	2	2	1	2	1	98	1	3	99	1		
129	1	19.6	2	2	2	1	2	2	1	2	3	99	1		
129	2	5.6	2	2	2	1	2	2	6	2	3	99	1		
129	3	11.5	2	2	2	1	2	2	8	2	3	99	1		
129	1	4	2	2	2	1	2	2	9	2	3	99	1		
129	11	35.6	2	2	2	1	2	2	2	2	3	99	1		
129	1	9.7	2	2	2	1	2	2	6	2	3	99	2	105	1
129	1	21.1	2	2	2	1	2	2	6	0	3	99	1	140	2
129	3	51.8	2	2	2	1	2	1	98	1	3	99	1		
129	1	6.1	2	2	2	1	2	2	6	2	3	99	1		
129	1	6	2	2	2	1	2	2	7	2	3	99	1		
129	2	7.6	2	2	2	1	2	2	2	2	3	99	1		
129	2	1.7	2	2	2	1	3	3	99	1	1	98	2		
129	3	7.7	2	2	2	1	3	3	99	1	2	8	2		
129	4	13.9	2	2	2	1	3	3	99	1	2	6	2		
129	3	13.8	2	2	2	1	3	3	99	1	1	98	1		
129	2	4.9	2	2	2	1	3	3	99	1	2	8	2		
129	3	8.8	2	2	2	1	3	3	99	1	2	2	2		
129	1	14.7	2	2	2	1	3	3	99	1	1	6	2		
129	1	6.2	2	2	2	1	4	2	2	3	2	2	5		
129	1	2.3	2	2	2	1	4	2	8	4	2	9	4		
129	1	3.3	2	2	2	1	4	1	6	5	2	8	3		
129	1	1.7	2	2	2	1	4	2	9	5	1	7	5		
129	1	2.9	2	2	2	1	4	2	9	5	2	4	5		
129	1	5.5	2	2	2	1	4	2	6	5	2	6	5		
129	2	6.5	2	2	2	1	4	2	6	3	2	6	3		
129	3	4	2	2	2	1	4	2	1	5	2	1	5		
129	3	3.2	2	2	2	1	4	2	1	5	2	8	3		
129	4	4.9	2	2	2	1	4	2	7	5	2	7	5		
129	4	5.6	2	2	2	1	4	2	2	5	2	2	5		
129	3	3.4	2	2	2	1	4	2	8	5	2	8	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
129	1	3.1	2	2	2	1	4	2	2	5	2	9	5		
129	1	1.4	2	2	2	1	4	2	6	5	2	9	5		
129	1	1.2	2	2	2	1	4	2	9	5	2	10	5		
129	1	1.4	2	2	2	1	4	2	9	5	2	9	5		
129	1	3.3	2	2	2	1	4	2	8	5	2	6	5		
129	1	13	2	2	2	1	4	1	8	5	2	2	5		
129	1	7.5	2	2	2	1	2	1	2	5	3	99	1		
129	1	2.7	2	2	2	1	4	2	1	5	1	8	2		
129	1	3.5	2	2	2	1	2	2	3	5	3	99	1		
129	2	2.4	2	2	2	1	4	2	1	5	2	1	2		
129	2	3.7	2	2	2	1	4	2	1	5	2	2	2		
129	2	5.6	2	2	2	1	2	2	6	5	3	99	1		
129	2	10.8	2	2	2	1	4	1	8	2	2	11	5		
129	1	5.4	2	2	2	1	4	1	6	2	2	8	5		
129	1	1.9	2	2	2	1	4	2	9	2	2	9	5		
129	2	8.5	2	2	2	1	4	1	6	2	2	11	5		
129	1	1.7	2	2	2	1	4	2	8	2	2	2	5		
129	1	5.3	2	2	2	1	4	1	8	2	1	8	5		
129	1	1.3	2	2	2	1	3	3	99	1	2	6	5		
129	2	7.2	2	2	2	1	4	2	6	2	2	7	5		
129	2	4.2	2	2	2	1	4	2	6	2	2	8	5		
129	3	6.1	2	2	2	1	4	1	9	2	2	2	5		
129	2	5.9	2	2	2	1	4	2	9	2	2	1	5		
129	2	7.3	2	2	2	1	4	2	2	2	2	2	5		
129	1	9.9	2	2	2	1	4	2	3	2	2	2	5		
129	1	0.6	2	2	2	1	3	3	99	1	2	2	5		
129	1	2.3	2	2	2	1	4	1	6	2	2	7	5		
129	1	12.1	2	2	2	1	4	2	9	0	2	7	5		
129	1	10.8	2	2	2	1	4	1	8	2	2	2	5		
129	32	181.3	2	2	3	1	1	3	99	1	3	99	1		
129	1	9.4	2	2	3	1	1	3	99	1	3	99	1		
129	21	133	2	2	3	1	1	3	99	1	3	99	1		
129	6	28.1	2	2	3	3	1	3	99	1	3	99	1		
129	3	13.3	2	1	2	1	1	3	99	1	3	99	1		
129	12	88.3	2	1	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
129	1	29.8	2	1	2	1	4	2	9	0	2	9	0		
129	1	37.8	2	1	3	1	1	3	99	1	3	99	1		
129	16	23.5	1	2	2	1	1	3	99	1	3	99	1		
129	17	37.6	1	2	2	1	1	3	99	1	3	99	1		
129	1	3.1	1	2	2	3	1	3	99	1	3	99	1		
129	2	2	1	2	2	2	1	3	99	1	3	99	1		
129	2	4.5	1	2	2	2	1	3	99	1	3	99	1		
129	3	2.7	1	2	2	4	1	3	99	1	3	99	1		
129	7	10.5	1	2	2	4	1	3	99	1	3	99	1		
129	3	14.3	1	2	2	1	4	1	98	1	1	98	1		
129	1	1.6	1	2	2	1	4	1	98	1	1	98	1		
129	1	6.4	1	2	2	1	4	1	7	2	1	7	2		
129	1	0.5	1	2	2	1	2	1	98	2	3	99	1		
129	1	0.8	1	2	2	1	4	1	5	3	1	5	3		
129	1	5.9	1	2	2	1	4	1	8	2	1	8	5		
129	2	2.8	1	2	2	1	3	3	99	1	2	6	5		
129	3	15.3	1	1	2	1	1	3	99	1	3	99	1		
129	1	40	1	2	2	2	2	1	6	0	3	99	1	145	2
129	1	21.7	2	2	2	2	2	1	8	2	3	99	1	106	1
129	1	40.5	1	2	2	4	2	1	6	2	3	99	1	140	2
129	1	11.7	1	2	2	4	2	2	9	2	3	99	1	140	1
130	1	0.4	0	0	0	0	0	0	0	0	0	0	0		
130	1	1	3	2	2	1	1	3	99	1	3	99	1		
130	5	9.6	3	2	2	1	1	3	99	1	3	99	1		
130	4	33.6	3	2	2	1	4	1	1	2	1	1	2		
130	14	18.5	3	2	2	1	4	1	98	1	1	98	1		
130	2	7.8	3	2	2	1	2	1	98	1	3	99	1		
130	1	1.4	3	2	2	1	4	1	1	5	1	1	2		
130	1	2.6	3	2	2	1	2	2	1	5	3	99	1		
130	1	1.1	3	2	2	1	3	0	0	0	2	1	5		
130	2	2	3	1	4	1	4	2	1	5	2	2	5		
130	2	0.5	3	1	4	1	4	2	2	5	2	2	5		
130	460	754.8	2	2	2	1	1	3	99	1	3	99	1		
130	1	9.1	2	2	2	1	1	3	99	1	3	99	1	143	2
130	1	6.1	2	2	2	1	1	3	99	1	3	99	1	137	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
130	149	311.7	2	2	2	1	1	3	99	1	3	99	1		
130	183	121.7	2	2	2	1	1	3	99	1	3	99	1		
130	6	15.2	2	2	2	3	1	3	99	1	3	99	1		
130	1	13	2	2	2	3	1	3	99	1	3	99	1		
130	47	101	2	2	2	2	1	3	99	1	3	99	1		
130	8	16.4	2	2	2	2	1	3	99	1	3	99	1		
130	30	56.2	2	2	2	2	1	3	99	1	3	99	1		
130	68	230.4	2	2	2	4	1	3	99	1	3	99	1		
130	1	47	2	2	2	4	1	3	99	1	3	99	1	127	2
130	24	110	2	2	2	4	1	3	99	1	3	99	1		
130	15	21.1	2	2	2	4	1	3	99	1	3	99	1		
130	16	58.1	2	2	2	1	4	1	98	1	1	98	1		
130	5	16.1	2	2	2	1	4	2	8	2	2	8	2		
130	2	6.5	2	2	2	1	4	2	6	2	2	1	2		
130	1	3.6	2	2	2	1	4	2	1	2	2	6	2		
130	2	61.8	2	2	2	1	4	1	98	1	1	98	1		
130	1	9.1	2	2	2	1	4	1	6	2	2	5	2		
130	1	4.7	2	2	2	1	4	2	4	2	1	6	2		
130	2	12.8	2	2	2	1	4	1	7	2	2	1	2		
130	1	7.1	2	2	2	1	4	2	4	2	2	4	2		
130	2	3.9	2	2	2	1	4	1	8	2	2	1	2		
130	1	2.8	2	2	2	1	4	2	1	2	2	4	2		
130	1	1.5	2	2	2	1	4	2	4	2	2	4	2		
130	1	39.5	2	2	2	1	4	1	8	2	1	1	2	99	1
130	1	6.6	2	2	2	1	4	1	6	2	1	5	2	125	1
130	6	44.9	2	2	2	1	4	1	98	1	1	98	1		
130	1	1.1	2	2	2	1	4	2	5	2	2	5	2		
130	1	6.7	2	2	2	1	4	2	5	2	2	3	2		
130	2	7.8	2	2	2	1	4	1	8	2	2	2	2		
130	1	3.9	2	2	2	1	4	2	7	2	2	7	2		
130	1	3.3	2	2	2	1	4	2	8	2	2	8	2		
130	1	1.3	2	2	2	1	4	2	1	2	2	9	2		
130	1	20.8	2	2	2	1	4	1	98	2	1	98	2		
130	2	8.7	2	2	2	1	4	1	4	2	2	7	2		
130	1	5.1	2	2	2	1	4	2	7	2	1	2	2		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
130	1	4.8	2	2	2	1	4	1	2	2	2	1	2		
130	2	4.4	2	2	2	1	4	1	4	2	2	8	2		
130	105	174.4	2	2	2	1	4	1	98	1	1	98	1		
130	1	5.5	2	2	2	1	4	1	98	1	1	98	1		
130	12	110.9	2	2	2	1	2	1	98	1	3	99	1		
130	1	10.7	2	2	2	1	2	2	8	1	3	99	1		
130	1	1.9	2	2	2	1	2	2	9	2	3	99	1		
130	2	4.6	2	2	2	1	2	2	4	2	3	99	1		
130	2	3.7	2	2	2	1	2	2	1	2	3	99	1		
130	1	58.6	2	2	2	1	2	2	9	2	3	99	1	179	1
130	1	69.9	2	2	2	1	2	1	7	2	3	99	2	150	1
130	1	20.2	2	2	2	1	2	2	2	2	3	99	1	125	1
130	1	27.6	2	2	2	1	2	1	8	2	3	99	1	135	2
130	1	5.1	2	2	2	1	2	1	9	2	3	99	1	180	1
130	9	77.4	2	2	2	1	2	1	98	1	3	99	1		
130	2	8	2	2	2	1	2	2	7	2	3	99	1		
130	1	1.1	2	2	2	1	2	2	8	2	3	99	1		
130	1	2.8	2	2	2	1	2	2	9	2	3	99	1		
130	2	5.8	2	2	2	1	2	2	1	2	3	99	1		
130	1	33.6	2	2	2	1	2	1	8	0	3	99	1	124	1
130	1	2.2	2	2	2	1	2	1	6	2	3	99	1	155	2
130	1	5.5	2	2	2	1	2	2	2	2	3	99	1		
130	19	34	2	2	2	1	2	1	98	1	3	99	1		
130	3	5.5	2	2	2	1	3	3	99	1	1	98	1		
130	3	8.7	2	2	2	1	3	3	99	1	2	1	2		
130	3	6.8	2	2	2	1	3	3	99	1	2	4	2		
130	3	7.3	2	2	2	1	3	3	99	1	1	98	1		
130	1	1.3	2	2	2	1	3	3	99	1	2	1	2		
130	38	86.3	2	2	2	1	3	3	99	1	1	98	1		
130	3	38.7	2	2	2	1	4	2	11	3	2	11	3		
130	1	9.5	2	2	2	1	4	2	11	5	2	11	5		
130	2	2.5	2	2	2	1	4	1	4	5	1	4	5		
130	1	1.5	2	2	2	1	4	2	1	4	2	1	4		
130	3	5.7	2	2	2	1	4	2	9	5	2	9	5		
130	2	2	2	2	2	1	4	2	9	5	2	1	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
130	3	8.9	2	2	2	1	4	1	7	5	1	7	5		
130	1	10.1	2	2	2	1	4	1	8	3	1	8	5		
130	1	1.2	2	2	2	1	4	2	8	5	2	8	5		
130	4	17.5	2	2	2	1	4	2	6	5	2	6	5		
130	2	3.7	2	2	2	1	4	1	6	5	1	6	5		
130	1	2.4	2	2	2	1	4	2	1	3	2	9	3		
130	1	9.4	2	2	2	1	4	2	1	3	2	3	3		
130	1	1.9	2	2	2	1	4	2	4	5	2	4	5		
130	3	5.9	2	2	2	1	4	1	98	1	1	98	1		
130	5	7.8	2	2	2	1	2	2	1	5	3	99	1		
130	4	5.2	2	2	2	1	4	2	1	5	1	4	1		
130	3	13.5	2	2	2	1	2	2	1	5	3	99	1		
130	2	10.4	2	2	2	1	4	1	9	3	1	9	2		
130	2	6.7	2	2	2	1	4	1	8	5	1	6	2		
130	1	2.2	2	2	2	1	4	2	1	5	2	1	2		
130	2	7.3	2	2	2	1	4	2	8	5	2	8	2		
130	1	1.8	2	2	2	1	4	2	11	3	2	11	2		
130	1	2.6	2	2	2	1	2	2	4	5	3	99	1		
130	2	4.2	2	2	2	1	4	2	1	5	2	6	2		
130	2	1.9	2	2	2	1	2	1	6	5	3	99	1		
130	1	0.5	2	2	2	1	4	1	9	5	1	9	2		
130	1	5.5	2	2	2	1	4	2	8	5	1	8	2		
130	1	0.5	2	2	2	1	2	1	98	1	3	99	1		
130	2	9.7	2	2	2	1	4	1	8	5	3	99	1		
130	1	9.2	2	2	2	1	3	3	99	1	2	1	5		
130	1	2.1	2	2	2	1	3	3	99	1	2	1	4		
130	2	2.6	2	2	2	1	3	3	99	1	2	8	5		
130	1	6.5	2	2	2	1	4	2	7	2	2	7	5		
130	2	4	2	2	2	1	3	3	99	1	2	1	5		
130	1	5.8	2	2	2	1	4	2	4	5	3	99	1		
130	1	4.8	2	2	2	1	4	1	5	2	2	1	5		
130	10	35.9	2	2	3	1	1	3	99	1	3	99	1		
130	54	31.7	2	2	3	1	1	3	99	1	3	99	1		
130	2	8.3	2	2	3	3	1	3	99	1	3	99	1		
130	2	94	2	1	2	1	4	1	98	1	1	98	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
130	5	19.1	2	1	4	1	1	3	99	1	3	99	1		
130	1	1.8	2	1	4	1	4	2	8	2	2	8	2		
130	11	16.8	1	2	2	1	1	3	99	1	3	99	1		
130	5	9.1	1	2	2	1	1	3	99	1	3	99	1		
130	1	0.2	1	2	2	2	1	3	99	1	3	99	1		
130	4	5.9	1	2	2	4	1	3	99	1	3	99	1		
130	1	1.4	1	2	2	4	1	3	99	1	3	99	1		
130	1	4	1	2	2	4	1	3	99	1	3	99	1		
130	2	2.5	1	2	2	1	4	2	8	2	2	8	2		
130	1	1.2	1	2	2	1	4	1	10	2	1	10	2		
130	1	0.6	1	2	2	1	4	1	98	1	1	98	1		
130	2	8.5	1	2	2	1	4	2	7	2	1	8	2		
130	3	9.3	1	2	2	1	4	2	8	2	1	8	2		
130	1	5.2	1	2	2	1	2	2	8	2	3	99	1		
130	1	0.6	1	2	2	1	4	1	8	5	1	8	5		
130	1	1.1	1	2	2	1	2	1	9	5	3	99	1		
130	1	0.9	1	2	2	1	2	2	8	5	3	99	1		
130	1	1.1	1	2	2	1	2	1	6	5	3	99	1		
130	1	1.1	1	2	2	1	3	3	99	1	1	98	1		
130	2	4.4	1	1	2	1	4	2	6	2	2	6	2		
130	1	56.8	2	2	2	2	2	1	8	2	3	99	1	135	2
130	1	22.1	2	2	2	2	2	1	8	2	3	99	1	135	1
131	7	2.7	0	0	0	0	0	0	0	0	0	0	0		
131	1	0.5	3	2	2	1	4	1	98	1	1	98	1		
131	1	23.9	3	2	2	1	4	2	2	2	2	2	2	110	1
131	1	3.5	3	2	2	1	2	1	98	2	3	99	1		
131	2	1.4	3	1	4	1	4	2	1	5	2	1	4		
131	104	125.6	2	2	2	1	1	3	99	1	3	99	1		
131	1	4.8	2	2	2	3	1	3	99	1	3	99	1		
131	9	23.5	2	2	2	2	1	3	99	1	3	99	1		
131	3	26	2	2	2	2	1	3	99	1	3	99	1		
131	33	119.4	2	2	2	4	1	3	99	1	3	99	1		
131	3	9.2	2	2	2	4	1	3	99	1	3	99	1		
131	1	9.5	2	2	2	1	4	2	2	2	2	7	2		
131	2	1.8	2	2	2	1	4	2	2	2	2	2	2		

(continued)



Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
131	1	4.5	2	2	2	1	4	2	4	2	2	1	2		
131	2	7.4	2	2	2	1	4	2	4	2	2	4	2		
131	4	9.1	2	2	2	1	4	2	6	2	2	6	2		
131	1	1.3	2	2	2	1	4	2	8	2	2	8	2		
131	1	1.6	2	2	2	1	4	2	5	2	2	2	2		
131	1	6.3	2	2	2	1	4	2	7	2	2	2	2		
131	2	5.6	2	2	2	1	4	2	8	2	2	1	2		
131	6	27.2	2	2	2	1	4	2	7	2	2	7	2		
131	1	2	2	2	2	1	4	2	1	2	2	1	2		
131	1	0.8	2	2	2	1	4	2	10	2	2	1	2		
131	1	2.6	2	2	2	1	4	2	7	2	2	7	2		
131	2	15.9	2	2	2	1	4	2	6	0	2	6	2		
131	1	4.4	2	2	2	1	4	2	8	2	2	4	2		
131	1	59.6	2	2	2	1	4	2	6	2	2	6	2	120	1
131	1	58.2	2	2	2	1	4	2	6	2	2	6	2	148	1
131	1	19.9	2	2	2	1	4	2	6	2	2	6	2	126	1
131	1	30.6	2	2	2	1	4	2	6	2	2	6	2	126	1
131	1	10.5	2	2	2	1	4	2	6	2	2	6	2	125	1
131	1	13.3	2	2	2	1	4	2	6	2	2	6	2	106	1
131	1	26.5	2	2	2	1	4	2	6	2	2	6	2	145	1
131	1	14.3	2	2	2	1	4	2	7	2	2	1	2	101	1
131	1	15.4	2	2	2	1	4	1	6	2	1	6	2	166	1
131	1	6.9	2	2	2	1	4	1	7	2	1	1	2	135	0
131	1	3.3	2	2	2	1	4	1	98	1	1	98	1	85	1
131	13	37.3	2	2	2	1	4	1	98	1	1	98	1		
131	1	43.2	2	2	2	1	4	1	98	1	1	98	1		
131	4	11	2	2	2	1	2	1	98	1	3	99	1		
131	5	56.9	2	2	2	1	2	1	98	2	3	99	1		
131	1	6	2	2	2	1	2	2	3	2	3	99	1		
131	1	1.4	2	2	2	1	2	2	6	2	0	0	0	96	0
131	14	41.1	2	2	2	1	2	1	98	1	3	99	1		
131	1	4.6	2	2	2	1	3	3	99	1	1	5	2		
131	2	7.7	2	2	2	1	3	3	99	1	2	8	2		
131	2	2.4	2	2	2	1	4	2	7	4	2	7	4		
131	1	2.3	2	2	2	1	4	2	6	5	2	8	5		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
131	1	1.9	2	2	2	1	4	2	4	5	2	7	5		
131	1	6.2	2	2	2	1	4	2	6	5	2	3	5		
131	2	2	2	2	2	1	4	2	1	5	2	3	5		
131	1	9.4	2	2	2	1	4	2	1	5	2	8	5		
131	1	3.6	2	2	2	1	4	2	3	5	2	3	5		
131	1	1.7	2	2	2	1	4	2	6	5	2	6	5		
131	1	0.7	2	2	2	1	4	2	1	5	2	1	5		
131	1	0.5	2	2	2	1	4	2	1	5	2	7	5		
131	1	1.6	2	2	2	1	4	1	98	1	1	98	1		
131	2	9.9	2	2	2	1	2	2	1	5	3	99	1		
131	1	4.89	2	2	2	1	4	2	7	5	2	7	2		
131	1	4	2	2	2	1	4	2	3	5	1	6	2		
131	1	1.5	2	2	2	1	4	2	8	5	1	6	2		
131	1	1.7	2	2	2	1	4	1	8	5	1	8	2		
131	1	1	2	2	2	1	4	2	7	5	2	3	2		
131	1	0.5	2	2	2	1	4	2	6	5	2	6	5		
131	1	4.4	2	2	2	1	2	1	98	1	3	99	1		
131	1	1.7	2	2	2	1	3	3	99	1	1	4	5		
131	1	1.6	2	2	2	1	4	1	4	2	1	4	5		
131	1	0.8	2	2	2	1	4	1	6	2	2	8	5		
131	4	8.9	2	2	2	1	3	3	99	1	1	98	1		
131	17	51.7	2	2	3	1	1	3	99	1	3	99	1		
131	7	11.2	1	2	2	1	1	3	99	1	3	99	1		
131	1	0.1	1	2	2	1	1	3	99	1	3	99	1		
131	1	0.4	1	2	2	4	1	3	99	1	3	99	1		
131	1	0.7	1	2	2	4	1	3	99	1	3	99	1		
131	2	9.8	1	2	2	1	4	1	98	1	1	98	1		
131	1	1	1	2	2	1	2	2	9	2	3	99	1		
131	1	0.3	1	2	2	1	2	1	98	1	3	99	1		
131	2	5.9	1	2	2	1	4	1	98	1	1	98	1		
131	1	0.4	1	2	2	1	2	1	98	1	3	99	1		
132	2	4	3	2	2	1	2	1	1	2	3	99	1		
132	2	10	3	2	2	1	4	2	11	5	2	11	5		
132	1	1.3	3	2	2	1	4	2	1	2	2	1	4		
132	45	63	2	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
132	9	8.5	2	2	2	1	1	3	99	1	3	99	1		
132	1	3.2	2	2	2	3	1	3	99	1	3	99	1		
132	7	18.5	2	2	2	2	1	3	99	1	3	99	1		
132	5	8.2	2	2	2	2	1	3	99	1	3	99	1		
132	8	37	2	2	2	4	1	3	99	1	3	99	1		
132	2	26.2	2	2	2	4	1	3	99	1	3	99	1		
132	2	5.8	2	2	2	1	4	1	98	1	1	98	1		
132	1	8.1	2	2	2	1	4	2	5	2	2	8	2		
132	1	4	2	2	2	1	4	2	5	2	2	7	2		
132	1	3.8	2	2	2	1	4	2	8	2	2	1	2		
132	1	1.7	2	2	2	1	4	2	4	2	2	8	2		
132	1	2	2	2	2	1	4	2	1	2	2	8	2		
132	1	1.1	2	2	2	1	4	2	4	2	2	8	2		
132	2	5.9	2	2	2	1	4	2	5	2	2	1	2		
132	1	1.3	2	2	2	1	4	1	8	2	1	8	2	114	1
132	2	6.6	2	2	2	1	4	1	98	1	1	98	1		
132	4	18.2	2	2	2	1	2	1	98	2	3	99	1		
132	1	5.6	2	2	2	1	2	2	8	2	3	99	1		
132	3	1.1	2	2	2	1	2	1	98	1	3	99	1		
132	3	6.1	2	2	2	1	3	3	99	1	2	1	2		
132	1	2.3	2	2	2	1	4	2	1	5	2	1	5		
132	2	3.1	2	2	2	1	4	2	8	5	2	8	5		
132	1	1.4	2	2	2	1	4	2	6	5	2	6	4		
132	1	1.1	2	2	2	1	4	2	2	5	2	7	5		
132	2	2.2	2	2	2	1	4	2	9	5	2	2	5		
132	1	2.1	2	2	2	1	4	1	8	5	2	9	5		
132	3	3.8	2	2	2	1	2	2	5	5	0	0	0		
132	1	4.5	2	2	2	1	4	2	9	5	2	9	2		
132	1	4.8	2	2	2	1	4	2	7	5	2	10	2		
132	1	1.9	2	2	2	1	4	2	8	2	2	2	5		
133	1	1	3	2	2	1	4	2	1	2	2	1	2		
133	4	8.1	3	1	4	1	4	2	1	4	2	1	4		
133	1	3.2	3	1	4	1	4	2	1	4	2	2	4		
133	4	14.4	2	2	2	1	1	3	99	1	3	99	1		
133	3	0.9	2	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
133	2	20.9	2	2	2	2	1	3	99	1	3	99	1		
133	1	0.8	2	2	2	2	1	3	99	1	3	99	1		
133	9	174.1	2	2	2	4	1	3	99	1	3	99	1		
133	3	3.2	2	2	2	4	1	3	99	1	3	99	1		
133	1	33.1	2	2	2	1	4	2	7	2	2	7	2		
133	1	16.8	2	2	2	1	4	2	7	2	1	6	2		
133	1	24.5	2	2	2	1	4	1	8	2	1	8	2	98	1
133	5	3.7	2	2	2	1	4	1	98	1	1	98	1		
133	1	36	2	2	2	1	2	1	6	2	0	0	0		
133	1	0.7	2	2	2	1	3	3	99	1	1	98	1		
133	1	2.6	2	2	2	1	4	2	2	5	2	4	5		
133	1	0.6	2	2	2	1	4	1	98	1	1	98	1		
133	2	35.1	2	2	3	1	1	3	99	1	3	99	1		
133	10	6.1	2	2	3	1	1	3	99	1	3	99	1		
133	1	0.8	1	2	2	1	4	2	7	5	2	7	5		
134	2	1.5	3	1	4	1	4	2	2	5	2	2	5		
134	1	1.6	2	2	2	1	1	3	99	1	3	99	1		
134	1	3.5	2	2	2	2	1	3	99	1	3	99	1		
134	1	2.3	2	2	2	1	4	1	2	2	2	6	2		
134	1	0.9	2	2	2	1	4	2	3	2	2	3	2		
134	2	0.5	2	2	2	1	4	1	98	1	1	98	1		
134	1	0.9	2	2	2	1	4	2	8	2	2	1	5		
134	1	0.3	2	2	2	1	3	3	99	1	1	98	1		
134	2	6.9	2	2	3	1	1	3	99	1	3	99	1		
134	1	0.9	1	2	2	1	1	3	99	1	3	99	1		
134	1	2.1	1	2	2	1	4	1	8	2	2	6	2		
135	7	10	0	0	0	0	0	0	0	0	0	0	0		
135	1	0.3	3	2	2	1	1	3	99	1	3	99	1		
135	2	2.8	3	1	4	1	4	2	1	4	2	2	5		
135	15	13.6	2	2	2	1	1	3	99	1	3	99	1		
135	3	10.3	2	2	2	2	1	3	99	1	3	99	1		
135	14	52.5	2	2	2	4	1	3	99	1	3	99	1		
135	1	12.5	2	2	2	1	4	2	8	2	2	8	2	105	1
135	1	11.6	2	2	2	1	4	2	4	2	2	8	2	184	1
135	2	8.7	2	2	2	1	4	2	8	2	2	1	2	148	1

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
135	2	3.3	2	2	2	1	2	1	98	1	3	99	1		
135	1	7.5	2	2	2	1	2	2	2	2	3	99	1		
135	1	0.7	2	2	2	1	2	2	6	2	3	99	1		
135	1	0.8	2	2	2	1	2	2	8	2	3	99	1		
135	1	2.7	2	2	2	1	4	2	6	5	2	6	5		
135	1	1.2	2	2	2	1	4	2	3	3	2	3	3		
135	1	1.2	2	2	2	1	4	2	2	5	2	3	5		
135	3	9.1	2	2	2	1	2	1	6	5	3	99	1		
135	1	1.1	2	2	2	1	4	1	8	2	2	7	5		
135	1	0.5	2	2	2	1	3	3	99	1	2	4	5		
135	6	49.1	2	2	3	1	1	3	99	1	3	99	1		
135	1	1.8	2	1	4	1	4	2	9	4	2	8	4		
135	2	13.2	1	2	2	1	4	1	9	2	1	9	2		
135	1	2.1	1	2	2	1	4	1	9	5	1	9	5		
135	1	4.3	1	2	2	1	2	2	8	5	3	99	1		
136	1	3.9	3	2	2	1	2	2	1	2	0	0	0		
136	1	0.9	3	1	4	1	4	2	1	5	2	1	5		
136	1	0.6	3	1	4	1	4	2	1	4	2	1	4		
136	3	4.8	3	1	4	1	4	2	1	0	2	1	4		
136	1	4.4	2	2	2	4	1	3	99	1	3	99	1		
136	1	5.3	2	2	2	1	2	1	8	2	3	99	1		
136	2	4.2	2	2	2	1	2	1	98	1	3	99	1		
136	1	0.3	2	2	2	1	3	3	99	1	1	98	1		
136	1	8.7	2	2	2	1	4	2	9	3	2	9	3		
136	1	11.9	2	2	5	1	3	0	0	0	2	5	2		
136	3	31.2	2	2	3	1	1	3	99	1	3	99	1		
136	1	0.8	1	2	2	1	1	3	99	1	3	99	1		
136	1	7.6	1	2	2	1	2	1	8	2	3	99	1		
137	1	2.1	0	0	0	0	0	0	0	0	0	0	0		
137	1	2.6	3	2	2	1	1	3	99	1	3	99	1		
137	1	0.9	3	2	2	1	4	2	2	5	2	1	5		
137	1	1.3	3	2	2	1	4	1	1	2	1	1	5		
137	1	0.9	3	1	4	1	4	2	1	5	2	2	5		
137	5	4.9	2	2	2	1	1	3	99	1	3	99	1		
137	2	4.5	2	2	2	4	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
137	1	1.1	2	2	2	1	4	2	1	2	2	1	2		
137	1	0.8	2	2	2	1	4	2	6	2	2	6	2		
137	1	7.7	2	2	2	1	4	2	3	2	2	1	2	102	0
137	1	1.9	2	2	2	1	2	2	6	2	3	99	1		
137	2	14.7	2	2	2	1	4	2	4	5	2	8	5		
137	1	0.5	2	2	2	1	4	2	9	5	2	9	5		
137	2	11.2	2	2	2	1	2	2	6	5	3	99	1		
137	1	0.9	2	2	2	1	2	2	9	4	3	99	1		
137	4	4.1	2	2	2	1	2	2	8	5	3	99	1		
137	1	1.5	2	2	3	1	1	3	99	1	3	99	1		
137	9	64.2	2	2	3	3	1	3	99	1	3	99	1		
138	1	1.5	2	2	2	2	1	3	99	1	3	99	1		
138	1	0.8	2	2	2	1	4	2	5	2	2	5	2		
138	2	0.5	2	2	2	1	4	1	98	1	1	98	1		
138	1	0.8	2	2	2	1	2	1	8	2	0	0	0		
138	1	0.7	2	2	2	1	4	2	9	4	2	3	4		
138	1	1.8	2	2	2	1	4	2	8	5	2	1	5		
138	1	1.3	2	2	2	1	4	2	7	5	2	8	5		
139	1	9.1	3	2	2	1	4	2	1	2	2	3	2		
139	1	1.2	3	1	4	1	4	2	1	4	2	1	4		
139	3	11.5	2	2	2	1	1	3	99	1	3	99	1		
139	1	7.2	2	2	2	3	1	3	99	1	3	99	1		
139	1	4.7	2	2	2	1	4	1	98	1	1	98	1		
139	1	6.2	2	2	2	1	4	1	0	0	2	4	0		
139	1	2.2	2	2	2	1	4	2	8	2	2	9	2		
139	1	0.9	2	2	2	1	4	0	0	0	2	5	2		
139	1	4	2	2	2	1	4	2	9	5	2	9	3		
139	1	5.6	2	2	2	1	4	2	1	5	2	2	5		
139	4	63.4	2	2	3	1	1	3	99	1	3	99	1		
139	3	102.8	2	2	3	3	1	3	99	1	3	99	1		
139	1	21.3	2	1	2	1	4	1	9	2	2	4	2		
140	1	1.6	3	2	2	1	4	1	98	1	1	98	1		
140	5	62.4	2	2	2	1	1	3	99	1	3	99	1		
140	11	4.6	2	2	2	1	1	3	99	1	3	99	1		
140	1	2.2	2	2	2	1	1	3	99	1	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
140	2	6.9	2	2	2	1	2	2	4	2	3	99	1		
140	2	48.1	2	2	2	1	2	2	4	2	3	99	2		
140	1	6	2	2	2	1	2	1	98	1	0	0	0		
140	1	41.2	2	2	2	1	4	2	11	2	2	11	2	124	1
140	1	6	2	2	2	1	2	2	4	2	3	99	1	124	1
140	1	0.8	2	2	2	1	3	3	99	1	1	98	1		
140	1	1.1	2	2	2	1	4	2	9	5	2	9	5		
140	1	2.1	2	2	2	1	4	1	98	1	1	98	1		
140	1	0.9	2	2	2	1	2	1	98	1	3	99	1		
140	3	1.2	2	2	2	1	3	3	99	1	1	98	1		
140	8	4.7	2	2	3	1	1	3	99	1	3	99	1		
141	1	6.2	3	2	2	1	4	2	2	3	2	3	3		
141	1	1.2	3	1	4	1	4	0	0	0	2	1	4		
141	4	6.8	2	2	2	1	1	3	99	1	3	99	1		
141	1	1.7	2	2	2	4	1	3	99	1	3	99	1		
141	1	7.3	2	2	2	1	2	2	3	2	3	99	1		
141	5	9.8	2	2	2	1	2	2	5	5	3	99	1		
141	1	3.4	2	2	2	1	2	2	4	3	3	99	1		
141	4	11.7	2	2	3	1	1	3	99	1	3	99	1		
141	1	0.7	1	2	2	1	1	3	99	1	3	99	1		
141	1	5	1	2	2	1	4	2	9	2	2	2	2		
141	1	2	1	1	4	1	4	2	9	4	2	2	4		
142	1	1.4	2	2	2	1	1	3	99	1	3	99	1		
142	1	2.6	2	2	2	4	1	3	99	1	3	99	1		
142	1	4.6	2	2	2	1	4	1	8	2	1	8	2		
142	1	6.8	2	2	2	1	2	1	8	2	3	99	1		
142	1	1.2	2	2	2	1	4	2	2	5	2	7	4		
143	1	1	3	2	2	1	4	1	1	5	1	1	2		
143	4	17.3	2	2	2	1	1	3	99	1	3	99	1		
143	1	1.4	2	2	2	1	1	3	99	1	3	99	1		
143	1	12.5	2	2	2	1	4	2	6	2	1	6	2		
143	1	5.4	2	2	2	1	4	2	6	2	2	8	2		
143	1	41.3	2	2	2	1	4	1	4	2	1	6	2	165	1
143	1	35.7	2	2	2	1	4	1	4	2	1	6	2	165	1
143	1	15.1	2	2	2	1	2	2	1	2	3	99	1		

(continued)

Table L.1. continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
143	1	1.8	2	2	2	1	3	0	0	0	1	8	2		
143	1	1.1	2	2	2	1	4	2	9	3	2	9	3		
143	1	2.7	2	2	2	1	4	2	3	2	2	1	3		
143	3	25.3	2	2	3	1	1	3	99	1	3	99	1		
143	1	4.1	2	2	3	2	1	3	99	1	3	99	1		
143	1	24.8	2	1	2	3	1	3	99	1	3	99	1		
144	9	42.5	2	2	2	1	1	3	99	1	3	99	1		
144	1	1.4	2	2	2	2	1	3	99	1	3	99	1		
144	3	30	2	2	2	1	4	1	98	1	1	98	1		
144	3	1.8	2	2	2	1	4	1	98	1	1	98	1		
144	1	0.9	2	2	2	1	2	2	7	2	3	99	1		
144	1	32.8	2	2	2	1	2	1	98	2	3	99	1		
144	3	1.4	2	2	2	1	2	1	98	1	3	99	1		
144	1	2.7	2	2	2	1	4	2	7	5	2	4	5		
144	1	2.7	2	2	2	1	4	2	9	5	2	6	5		
144	2	1.6	2	2	2	1	4	1	98	1	1	98	1		
144	1	9.3	2	2	2	1	2	2	5	5	3	99	1		
144	5	90.7	2	2	3	1	1	3	99	1	3	99	1		
144	1	36.3	2	1	2	1	4	2	6	2	2	6	2		
144	1	7.6	1	2	2	1	4	2	7	2	2	7	2	180	1
144	3	33.4	1	2	2	1	2	2	8	3	3	99	1		
145	3	1	0	0	0	0	0	0	0	0	0	0	0		
145	1	1.2	2	2	2	1	4	2	2	2	2	8	2		
145	1	0.4	2	2	2	1	2	2	1	2	0	0	0		
145	1	1.8	1	2	2	1	4	1	8	2	1	8	2		
145	1	2.5	1	2	2	1	4	2	2	5	1	4	2		
145	1	1.4	1	2	2	1	2	2	9	5	0	0	0		
147	2	14.4	2	2	2	1	1	3	99	1	3	99	1		
147	3	1.4	2	2	2	1	1	3	99	1	3	99	1		
147	1	0.1	2	2	2	2	1	3	99	1	3	99	1		
147	1	0.4	2	2	2	4	1	3	99	1	3	99	1		
147	4	3.8	2	2	2	1	4	1	98	1	1	98	1		
147	11	263.1	2	2	2	1	2	2	4	2	3	99	1		
147	1	14.7	2	2	2	1	2	2	11	2	3	99	1		
147	1	0.1	2	2	2	1	2	1	98	1	3	99	1		

(continued)



**Table L.1.** continued

PD	Count	Weight (g)	Oxidation	Paste	Temper	Paddle marks	Slip location	Ext slip type	Ext slip color	Ext surface treatment	Int slip type	Int slip color	Int surface Treatment	Carination angle	No. of Flanges
147	1	0.4	2	2	2	1	3	3	99	1	1	98	1		
147	1	1.3	2	2	2	1	4	2	11	4	2	11	4		
147	4	2.6	2	2	2	1	4	1	98	1	1	98	1		
147	1	12.9	2	2	2	1	2	2	7	3	3	99	1		
147	1	14.9	2	2	2	1	2	2	8	3	3	99	1		
147	1	0.6	2	2	2	1	2	1	98	1	3	99	1		
147	1	0.1	1	2	2	1	1	3	99	1	3	99	1		
147	1	6.8	1	2	2	1	3	3	99	2	1	8	2		
149	1	1.8	2	2	2	2	1	3	99	1	3	99	1		
149	1	2.5	2	2	2	1	3	3	99	1	2	2	5		
149	1	1.4	2	2	2	1	3	3	99	1	2	8	5		
149	1	6.1	1	2	2	1	4	2	9	3	2	9	3		
151	1	0.8	2	2	2	1	1	3	99	1	3	99	1		
151	1	3.2	2	2	2	1	4	1	98	1	1	98	1		

## APPENDIX M

### **Faunal Remains from the Excavated Contexts**

Mr. Anusorn Amphonsri (M.A. Silpakorn University) analyzed the faunal remains recovered from the excavated contexts. The assemblage included a combination of remains found in situ, during dry screening and in the heavy fraction of the flotation samples. See Appendix H for context information based on the Provenance Designation number (PD).

**Table M.1.** Faunal remains from excavated contexts

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-01	No	34	5	4	indeterminate	-	-	-	unburned
TP-01	No	35	13	11	indeterminate	-	-	-	unburned
TP-01	No	40	11	4	indeterminate	-	-	-	unburned
TP-01	No	47	6	2	indeterminate	-	-	-	unburned
TP-01	No	48	10	12	Bovidae	Bovinae	-	Lower molar	fragments (MNE=1), unburned
TP-01	No	48	3	21	Buffalo	Bubalus	bubalis	Lower M1/M2	fragments (MNE=1), young adult, unburned
TP-01	No	48	11	3	indeterminate	-	-	-	unburned
TP-01	No	49	17	15	indeterminate	-	-	-	unburned
TP-01	No	49	1	11	Sambar deer	Cervus	unicolor	Frist phalange,3rd digit	unburned
TP-01	No	50	55	37	indeterminate	-	-	-	unburned
TP-01	No	50	1	4	Bovidae	Bos	-	Lower molar	fragment, unburned
TP-01	No	50	1	4	Bovidae	Bos	-	Lower P3 (Right)	worn, broken root, unburned
TP-01	No	50	1	5	Barking deer	Muntiacus	muntjak	Lower M1/M2 (R.)	worn, broken root, unburned
TP-01	No	50	1	20	Sambar deer	Cervus	unicolor	Upper M1/M2 (L.)	worn, broken root, unburned
TP-01	No	51	45	29	indeterminate	-	-	-	unburned
TP-01	No	52	37	35	indeterminate	-	-	-	unburned
TP-01	No	53	23	20	indeterminate	-	-	-	unburned
TP-01	No	54	6	2	indeterminate	-	-	-	unburned
TP-01	No	55	2	1	indeterminate	-	-	-	unburned
TP-01	No	56	2	0.5	indeterminate	-	-	-	unburned
TP-01	No	57	1	7	Sambar deer	Cervus	unicolor	Lower molar	fragment, unburned
TP-01	No	57	14	8	indeterminate	-	-	-	unburned

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-01	No	58	1	1	indeterminate	-	-	-	unburned
TP-01	No	59	1	0.3	indeterminate	-	-	-	unburned
TP-01	No	61	11	4	indeterminate	-	-	-	unburned
TP-01	No	62	5	15	Bovidae	Bovinae	-	Lower M1/M2	fragments (MNE=1), unburned
TP-01	No	62	19	4	indeterminate	-	-	-	unburned
TP-01	Yes	62	4	5	indeterminate	-	-	-	unburned
TP-01	No	63	7	1	indeterminate	-	-	-	unburned
TP-01	Yes	63	4	0.1	indeterminate	-	-	-	unburned
TP-01	No	64	25	10	indeterminate	-	-	-	unburned
TP-01	Yes	64	17	3	indeterminate	-	-	-	unburned
TP-01	No	65	2	2	indeterminate	-	-	-	unburned
TP-01	Yes	65	22	5	indeterminate	-	-	-	unburned
TP-01	No	66	1	12	Bovidae	Bos	-	Lower M3 (L.)	worn, unburned, young adult
TP-01	No	66	195	176	indeterminate	-	-	-	unburned
TP-01	Yes	66	41	9	indeterminate	-	-	-	unburned
TP-01	No	67	32	22	indeterminate	-	-	-	unburned
TP-01	No	68	39	22	indeterminate	-	-	-	unburned
TP-01	Yes	68	1	9	Barking deer	Muntiacus	montjak	Lower P4 (L.)	in socket, unburned
TP-01	Yes	68	8	2	indeterminate	-	-	-	unburned
TP-01	No	69	8	4	indeterminate	-	-	-	unburned
TP-01	No	71	1	1	indeterminate	-	-	-	unburned
TP-01	Yes	71	5	0.1	indeterminate	-	-	-	unburned
TP-03	No	93	2	0.5	indeterminate	-	-	-	burned
TP-03	No	93	2	0.5	indeterminate	-	-	-	unburned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-03	No	94	5	1.4	indeterminate	-	-	-	unburned
TP-03	No	95	7	9	indeterminate	-	-	-	unburned
TP-03	No	95	1	3	Bovidae	Bovinae	-	Upper P2 (L)	worn, unburned
TP-03	Yes	95	4	0.1	indeterminate	-	-	-	unburned
TP-03	No	96	3	1.3	indeterminate	-	-	-	unburned
TP-03	Yes	96	1	0.1	Fish	-	-	Vertebrae	unburned
TP-03	No	98	2	9	indeterminate	-	-	-	unburned
TP-03	No	99	2	1	indeterminate	-	-	-	unburned
TP-03	No	100	8	1	indeterminate	-	-	-	unburned
TP-03	No	100	4	1	Turtle	-	-	Carapace	unburned
TP-03	Yes	100	4	0.3	indeterminate	-	-	-	unburned
TP-03	No	101	1	2	Deer	Cervide	unicolor	Lower P2 (L)	young adult, unworn tooth
TP-03	Yes	102	2	0.1	Fish	-	-	Vertebrae	unburned
TP-03	Yes	102	9	0.2	indeterminate	-	-	-	unburned
TP-03	No	103	15	2	indeterminate	-	-	-	unburned
TP-04	No	108	3	11	Dog	Canis	familiaris	Lower P2, P3, M1, M2 (L)	unburned
TP-04	No	110	2	4	Gastropod	Hemiplecta	-	-	unburned
TP-04	Yes	111	18	0.1	Shell	-	-	Fragment	unburned
TP-04	Yes	112	35	2	Shell	-	-	Fragment	unburned
TP-04	Yes	116	21	1	Shell	-	-	Fragment	unburned
TP-04	Yes	118	8	0.5	Shell	-	-	Fragment	unburned
TP-04	No	119	1	1	Turtle	-	-	carapace	burned
TP-04	Yes	120	2	2	Gastropod	Filopaludina	-	-	unburned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	Yes	120	16	1	Shell	-	-	Fragment	unburned
TP-04	No	124	4	29	Turtle	-	-	carapace	unburned
TP-04	No	124	5	8	indeterminate	-	-	-	unburned
TP-04	No	124	1	0.5	Shell	Unident.	-	-	unburned
TP-04	No	125	4	13	indeterminate	-	-	-	unburned
TP-04	No	126	3	10	indeterminate	-	-	-	unburned
TP-04	No	126	1	5	Bivalvia	Anadara	granosa	-	unburned
TP-04	No	126	2	14	indeterminate	-	-	-	unburned
TP-04	No	126	1	7	Turtle	-	-	carapace	unburned
TP-04	No	126	3	6	indeterminate	-	-	-	unburned
TP-04	No	127	2	2	indeterminate	-	-	-	unburned
TP-04	Yes	127	2	1	indeterminate	-	-	-	unburned
TP-04	Yes	128	12	12	indeterminate	-	-	-	unburned
TP-04	No	129	2	5	indeterminate	-	-	-	unburned
TP-04	No	129	9	32	indeterminate	-	-	-	burned
TP-04	No	130	2	53	indeterminate	-	-	-	unburned
TP-04	No	130	2	21	indeterminate	-	-	-	unburned
TP-04	No	130	1	12	Turtle	-	-	carapace	unburned
TP-04	No	130	8	42	indeterminate	-	-	-	unburned
TP-04	No	130	1	13	Bivalvia	Anadara	granosa	-	unburned
TP-04	Yes	130	4	16	indeterminate	-	-	-	unburned
TP-04	No	131	4	18	Turtle	-	-	carapace	unburned
TP-04	No	131	1	0.5	Fish	Cyprinidae	-	Fin spin	burned
TP-04	No	131	15	33	indeterminate	-	-	-	unburned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	No	131	4	18	Turtle	-	-	carapace	unburned
TP-04	No	131	2	15	Gastropod	Pila	polita	-	unburned
TP-04	No	131	4	5	Bivalvia	Scabies	crispata	-	unburned
TP-04	No	131	11	21	Bivalvia	Scabies	-	-	unburned
TP-04	No	131	30	64	Gastropod	Filopaludina	-	-	unburned
TP-04	No	131	63	23	Shell	Unident.	-	-	unburned
TP-04	Yes	131	1	0.1	Fish	-	-	Fin spine	burned
TP-04	Yes	131	6	0.5	Fish	-	-	Vertebrae	unburned
TP-04	Yes	131	11	6	indeterminate	-	-	-	burned
TP-04	Yes	131	2	3	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	131	41	7	Shell	-	-	Fragment	unburned
TP-04	No	132	5	15	Turtle	-	-	carapace	unburned
TP-04	No	132	5	6	indeterminate	-	-	-	unburned
TP-04	No	132	1	17	Bivalvia	Anadara	granosa	-	unburned
TP-04	Yes	132	1	2	Fish	-	-	Vertebrae	unburned
TP-04	No	133	4	4	Turtle	-	-	carapace	unburned
TP-04	No	133	1	7	Turtle	-	-	carapace	unburned
TP-04	No	133	11	8	Shell	Unident.	-	-	unburned
TP-04	No	133	28	75	Gastropod	Filopaludina	-	-	unburned
TP-04	No	133	1	1	Bivalvia	Scabies	crispata	-	unburned
TP-04	No	133	9	16	Bivalvia	Scabies	-	-	unburned
TP-04	No	133	1	9	Bivalvia	Anadara	granosa	-	unburned
TP-04	Yes	133	1	0.2	Walking Catfish	Clarias	-	Frontal	burned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	Yes	133	10	3	Fish	-	-	Vertebrae	burned
TP-04	Yes	133	2	2	Turtle	-	-	Carapace	unburned
TP-04	Yes	133	126	52	indeterminate	-	-	-	unburned
TP-04	Yes	133	2	3	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	133	3	1	Bivalvia	Scabies	-	-	unburned
TP-04	Yes	133	33	1	Shell	-	-	-	unburned
TP-04	No	134	1	3	Turtle	-	-	carapace	burned
TP-04	No	134	8	2	Shell	Unident.	-	-	unburned
TP-04	Yes	134	2	1	indeterminate	-	-	-	burned
TP-04	No	135	3	10	Turtle	-	-	carapace	unburned
TP-04	No	135	20	28	indeterminate	-	-	-	unburned
TP-04	No	135	1	0.5	Gastropod	Melanoides	tuberculata	-	unburned
TP-04	No	135	16	48	Gastropod	Filopaludina	-	-	unburned
TP-04	No	135	2	1	Bivalvia	Scabies	crispata	-	unburned
TP-04	No	135	9	7	Bivalvia	Scabies	-	-	unburned
TP-04	No	135	20	8	Shell	Unident.	-	-	unburned
TP-04	No	136	3	3	Shell	Unident.	-	-	unburned
TP-04	No	136	4	13	Gastropod	Filopaludina	-	-	unburned
TP-04	No	136	1	2	Bivalvia	Anadara	granosa	-	unburned
TP-04	No	136	4	5	Bivalvia	Scabies	-	-	unburned
TP-04	Yes	136	17	2	Fish	-	-	Vertebrae	burned
TP-04	Yes	136	107	58	indeterminate	-	-	-	burned
TP-04	Yes	136	3	6	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	136	1	0.5	Gastropod	Melanoides	tuberculata	-	unburned

(continued)



Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	Yes	136	2	1	Bivalvia	Scabies	crispata	-	unburned
TP-04	Yes	136	2	2	Bivalvia	Anadara	granosa	-	unburned
TP-04	Yes	136	45	8	Shell	-	-	Fragment	unburned
TP-04	No	137	1	1	Shell	-	-	-	fragment, unburned
TP-04	No	137	6	21	Turtle	-	-	carapace	unburned
TP-04	No	137	16	87	indeterminate	-	-	-	burned
TP-04	No	137	34	54	indeterminate	-	-	-	unburned
TP-04	No	137	23	18	Shell	Unident.	-	-	unburned
TP-04	No	137	1	6	Gastropod	Pila	pesmei	-	unburned
TP-04	No	137	15	56	Gastropod	Filopaludina	-	-	unburned
TP-04	No	137	3	5	Bivalvia	Scabies	-	-	unburned
TP-04	No	138	1	8	indeterminate	-	-	-	unburned
TP-04	No	138	12	4	Shell	-	-	-	unburned
TP-04	Yes	138	3	0.2	Shell	-	-	Fragment	unburned
TP-04	No	139	2	6	indeterminate	-	-	-	burned
TP-04	No	139	1	73	Gastropod	Pila	pesmei	-	unburned
TP-04	No	139	1	2	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	140	1	2	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	140	23	7	Shell	-	-	Fragment	unburned
TP-04	Yes	140	21	7	Fish	-	-	Vertebrae	burned
TP-04	Yes	140	1	4	Turtle	-	-	Carapace	burned
TP-04	Yes	140	126	54	indeterminate	-	-	-	burned
TP-04	No	141	16	22	indeterminate	-	-	-	unburned
TP-04	No	141	1	1	Bivalvia	Scabies	-	-	unburned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	No	141	6	3	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	141	8	34	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	141	18	55	Gastropod	Filopaludina	-	-	unburned
TP-04	No	141	32	13	Shell	Unident.	-	-	unburned
TP-04	Yes	141	20	1	Shell	-	-	-	unburned
TP-04	No	142	5	21	indeterminate	-	-	-	unburned
TP-04	No	142	41	15	Shell	Unident.	-	-	unburned
TP-04	No	142	14	26	Gastropod	Filopaludina	-	-	unburned
TP-04	No	142	72	53	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	142	1	1	Gastropod	Filopaludina	sumatrensis	-	unburned
TP-04	No	142	2	4	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	143	4	4	Fish	Cyprinidae	-	Fin spin	unburned
TP-04	No	143	6	21	Turtle	-	-	carapace	unburned
TP-04	No	143	1	10	Turtle	-	-	carapace	cutmark/ unburned
TP-04	No	143	12	53	Turtle	-	-	carapace	burned
TP-04	No	143	1	8	Turtle	-	-	carapace	drilled/ burned
TP-04	No	143	21	40	indeterminate	-	-	-	burned
TP-04	No	143	21	90	indeterminate	-	-	-	unburned
TP-04	No	143	16	31	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	143	30	29	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	143	56	57	Gastropod	Filopaludina	-	-	unburned
TP-04	No	143	39	16	Shell	Unident.	-	-	unburned
TP-04	Yes	143	5	8	Turtle	-	-	Carapace	burned
TP-04	Yes	143	34	15	Fish	-	-	Vertebrae	burned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	Yes	143	1	1	indeterminate	-	-	-	burned
TP-04	Yes	143	248	147	indeterminate	-	-	-	burned
TP-04	Yes	143	1	2	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	143	71	13	Shell	-	-	Fragment	unburned
TP-04	Yes	143	14	5	indeterminate	-	-	-	unburned
TP-04	No	144	2	8	Turtle	-	-	carapace	unburned
TP-04	No	144	1	13	Dog	Canis	familiaris	Distal part of radius	unburned
TP-04	No	144	4	5	Fish	-	-	vertebrae, frag of canal	burned
TP-04	No	144	17	55	indeterminate	-	-	-	unburned
TP-04	No	144	13	40	indeterminate	-	-	-	burned
TP-04	Yes	144	5	4	Fish	Cyprinidae	-	Dentary	burned
TP-04	Yes	144	140	26	Fish	-	-	Vertebrae	burned
TP-04	Yes	144	2	2	Turtle	-	-	Carapace	burned
TP-04	Yes	144	1	1	Turtle	-	-	Coracoid	burned
TP-04	Yes	144	323	155	indeterminate	-	-	-	unburned
TP-04	Yes	144	4	0.5	Shell	-	-	Fragment	burned
TP-04	No	145	7	9	Turtle	-	-	carapace	unburned
TP-04	No	145	7	9	indeterminate	-	-	-	unburned
TP-04	No	145	18	8	Shell	Unident.	-	-	unburned
TP-04	No	145	23	28	Gastropod	Filopaludina	-	-	unburned
TP-04	No	145	4	14	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	145	30	18	Gastropod	Melanoides	tuberculata	-	unburned
TP-04	No	145	1	1	Bivalvia	Scabies	-	-	unburned

(continued)

Table M.1.1. continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	Yes	145	2	1	indeterminate	-	-	-	burned
TP-04	Yes	145	2	0.5	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	Yes	145	2	0.2	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	145	4	0.2	Shell	-	-	Fragment	unburned
TP-04	No	146	1	31	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	146	30	29	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	146	56	57	Gastropod	Filopaludina	-	-	unburned
TP-04	No	146	39	16	Shell	Unident.	-	-	unburned
TP-04	No	147	3	2	Shell	-	-	-	unburned
TP-04	No	147	1	7	Turtle	-	-	carapace	unburned
TP-04	No	147	18	38	indeterminate	-	-	-	unburned
TP-04	Yes	147	2	1	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	147	7	0.7	Shell	-	-	Fragment	unburned
TP-04	Yes	147	1	1	Sun Bear	Ursus	malayanus	Lower right M1	broken, unburned
TP-04	Yes	147	3	0.6	Fish	Cyprinidae	-	Dentary	burned
TP-04	Yes	147	1	0.1	Walking Catfish	Clarias	-	Frontal	burned
TP-04	Yes	147	153	21	Fish	-	-	Vertebrae	burned
TP-04	Yes	147	213	18	indeterminate	-	-	-	burned
TP-04	No	148	1	31	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	148	11	4	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	148	1	1	Gastropod	Filopaludina	sumatrensis	-	unburned
TP-04	No	148	68	61	Gastropod	Filopaludina	-	-	unburned
TP-04	No	148	8	6	Shell	Unident.	-	-	unburned

(continued)

**Table M.1.1.** continued

Area	From Flotation?	PD#	Count	Weight (g)	Type	Genus	Species	Elements	Description
TP-04	No	149	107	110	Gastropod	Filopaludina	-	-	unburned
TP-04	No	149	28	21	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	149	20	14	Shell	Unident.	-	-	unburned
TP-04	Yes	149	8	8	Gastropod	Filopaludina	-	-	unburned
TP-04	Yes	149	5	0.1	Shell	-	-	Fragment	unburned
TP-04	No	150	13	12	Gastropod	Filopaludina	-	-	unburned
TP-04	No	150	10	6	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	150	13	2	Shell	Unident.	-	-	unburned
TP-04	No	151	1	1	indeterminate	-	-	-	unburned
TP-04	No	151	2	13	Gastropod	Pila	ampullacea	-	unburned
TP-04	No	151	25	25	Gastropod	Filopaludina	-	-	unburned
TP-04	No	151	14	7	Gastropod	Melanooides	tuberculata	-	unburned
TP-04	No	151	15	7	Shell	Unident.	-	-	unburned
TP-04	Yes	151	16	1	Shell	-	-	Fragment	unburned

## APPENDIX N

### **Miscellaneous Artifacts**

This appendix contains descriptions of artifacts recovered in the excavations that were not included in the preceding appendices. These include glass and stone beads, ground stone objects, metal objects and clay balls. See Appendix H for details of the provenance details designated by the PD number for each artifact. Bead shapes are described using the “roundness” categories (R0-R3) as described by Francis (2002:25).

**Table N.1.1.** Beads from the excavation units and auger cores

Area	PD	Form	Material	Condition	Color	Weight (g)	Width (mm)	Length (mm)	Perforation diameter (mm)	Notes
TP-01	63	tubular	glass	complete	opaque red	0.2	3.7	8.8	1.1	One end is an R2 roundness, the other may be broken or is R0; Munsell = Red (10R 4/6)
TP-01	63	short suboblade	glass	complete	opaque black	0	2.2	1.2	0.8 mm	round shape with flattened ends; R3 roundness
TP-01	63	short suboblade	glass	complete	translucent blue	0	2.9	1.3	1	round shape with flattened ends; R3 roundness
TP-01	65	suboblade	glass	complete	opaque dark blue-black	0	2.2	1.9	0.6	round shape with flattened ends; R3 roundness
TP-01	66	suboblade	glass	fragment	transparent blue	0	2.1	2		half of a bead; thickness is incomplete; round with flattened ends; R3 roundness
TP-01	71	short suboblade	glass	complete	opaque dark blue-black	0	3.1	1.9	1	round shape with flattened ends; R3 roundness
TP-03	95	oblade	quartz	fragment	clear	0.4	4.8	8.8	1.2 - 0.6	round clear bead with slightly flattened ends; drilled; surface is very smooth; measured width is half of bead; whole bead width estimate is 9.6mm
TP-03	95	tubular	glass	complete	opaque blue-green	0.3	5.8	5.8	1.1	ends are flat but beveled; R2 roundness;
TP-03	95	short suboblade	glass	complete	transparent blue	0	3	1.8	1	small bubbles are visible inside the glass; round shape with flattened ends; R3 roundness
TP-04	132	short suboblade	glass	complete	translucent dark blue	0	2.4	1.8	0.6	round shape with flattened ends; R3 roundness

(continued)

**Table N.1** continued

Area	PD	Form	Material	Condition	Color	Weight (g)	Width (mm)	Length (mm)	Perforation diameter (mm)	Notes
TP-04	132	short suboblade	glass	complete	translucent dark blue	0	2	1.1	0.6	round shape with flattened ends; R3 roundness
AC066		short suboblade	glass	complete	translucent blue	0	2.7	1.8	0.9	round shape with flattened ends; R3 roundness; recovered 0.4-0.6 m.b.s. in AC066
AC067		short suboblade	glass	complete	translucent dark blue	0	2.6	1.6	0.8	round shape with flattened ends; R3 roundness; recovered 0.7-0.8 m.b.s. in AC067



**Table N.2.** Stone objects from excavation and salvage units

Area	PD	Type	Condition	Color	Munsell	Weight (g)	Width (mm)	Length (mm)	Thickness (mm)	Notes
SALV-02	39	adze	near complete	white to dark gray	5Y 8/1 to Gley1 4/N	29	32.4	45.8	10.5	Igneous stone (basalt?) with swirls of light grey and dark gray; 75% of blade edge is missing; cross-section is lenticular with base slightly flatter than top; see Bronson 1976:33 for comparative examples from Chansen
TP-01	48	polished stone	fragment	gray to dark greenish gray	5Y 5/1 to Gley1 4/5GY	120	49.6	65.8	48	greenstone; all measurements are incomplete dimensions; two surfaces are highly polished; likely a corner fragment of a saddle quern; does not refit
TP-01	48	polished stone	fragment	gray to dark greenish gray	5Y 5/1 to Gley1 4/5GY	207	41.4	95.5	34.1	greenstone (same material as above); all measurements are incomplete; one surface is polished
TP-01	57	ground stone	fragment	reddish brown	2.5YR 5/3	81.5	57.5	62.8	14.8	Drilled hole in center along fractured edge; hole is 4.0 mm in dia.
TP-01	64	pigment stone?	fragment	red	7.5R 4/6	5.4	17.4	23.9	10.8	amorphous rock that easily marks deep red; possible use as pigment stone, no apparent use marks
TP-01	65	saddle quern	incomplete	light gray	5Y 7/1 to 10YR 7/1		13.5	37.1	14.5	three-fourths of a saddle quern; top surface is polished from use-wear; length and width measurements are incomplete
TP-04	143	Quartzite chunk	fragment	white	white	10.8	21.4	37.4	14.3	fragment of quartzite; does not appear to be chipped or worked; natural stone, possibly imported to site for flux or temper use

**Table N.3.** Metal objects from the excavation units

Area	PD	Type	Material	Condition	Color	Munsell	Weight (g)	Width (mm)	Length (mm)	Thickness (mm)	Notes
TP-01	35	indeterminate	iron	fragment	dark reddish brown	5YR 3/4	0.2	6.5	9.7	2.7	fragment of an indeterminate object; slightly flat; heavily rusted ; magnetic
TP-01	35	indeterminate	iron	fragment	dark reddish brown	5YR 3/4	0.1	4.1	7.8	2.1	fragment of an indeterminate object; slightly flat; heavily rusted ; magnetic
TP-01	35	indeterminate	iron	fragment	dark reddish brown	5YR 3/4	0	3.4	4.5	1	fragment of an indeterminate object; slightly flat; heavily rusted ; magnetic
TP-01	47	indeterminate	iron	fragment	dark reddish brown	5YR 3/3	3.2	11.3	25.2	8.2	fragment of a shaft or rod with lenticular to rectangular cross-section; heavily rusted; magnetic
TP-01	53	indeterminate	lead?	fragment	light gray to brown	10YR 7/2 to 10YR 5/3	1.3	11.3	11.4	4.8	scratch reveals metallic dark grey material below patina; may be a fragment of an ornament or intrusive modern object; wall thickness is 0.8-1.3mm; not magnetic
TP-01	61	nail	iron	fragment	dark reddish gray	5YR 3/2	1.2	5.5	16.5	0	circular cross-section, most likely a nail fragment; narrows at one end
TP-03	93	ring	lead	complete	dark gray	Gley1 4/N	27.3	31.2	38.4	19.6	bent lead 'ring'; does not connect, but overlaps at one end; appears to have been bent; cross-section is lenticular to flat and shoveled at the tips; surface is white, but a scratch reveals dark grey interior; cross-section thickness = 3.5-4.7mm; not magnetic

(continued)

**Table N.3.** continued

Area	PD	Type	Material	Condition	Color	Munsell	Weight (g)	Width (mm)	Length (mm)	Thickness (mm)	Notes
TP-03	95	disk	lead	complete	dark gray	Gley1 4/N	8.8	16.5	0	5	lead disk; flat sides; faces have irregular indentations in center- not identifiable as image or script; possibly a coin/ coin blank, a weight, or bulk lead
TP-04	129	indeterminate	iron	fragment	reddish brown	2.5YR 4/4	3.3	9	23.9	8.8	thins and becomes flat at one end, thicker and round cross-section at the other; magnetic
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley 1 4/5G	0	0	0	0.4	flat fragment; magnetic
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley 1 4/5G	0	0	0	0.4	flat fragment; magnetic
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley 1 4/5G	0	0	0	0.4	flat fragment; magnetic
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley 1 4/5G	0	0	0	0.4	flat fragment; magnetic
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley 1 4/5G	0	0	0	0.4	flat fragment; magnetic
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley 1 4/5G	0	0	0	0.4	flat fragment; magnetic

(continued)

**Table N.3.** continued

Area	PD	Type	Material	Condition	Color	Munsell	Weight (g)	Width (mm)	Length (mm)	Thickness (mm)	Notes
TP-04	140	indeterminate	iron?	fragment	dark greenish gray	Gley1 4/5G	0	0	0	0.4	flat fragment; magnetic
TP-04	147	rod	bronze?	fragment	greenish gray	Gley1 5/10Y	3.1	3.5	28.4	0	rod narrows from 3.9 mm at top to 3.4 mm at bottom; round to oval cross-section; not magnetic, not rusted

**Table N.4.** Fired clay balls

PD	Area	Condition	Color	Munsell	Weight (g)	Width (mm)	Length (mm)	Thickness (mm)	Notes
48	TP-01	complete	reddish yellow	5YR 6/6	5	17.4	0	0	pitted surface
48	TP-01	complete	light brown	7.5YR 6/3	3.8	15.1	0	0	one side is slightly dented/ finger impressed
48	TP-01	complete	pink	7.5YR 7/3	10.8	22.1	0	0	one side is dented/ finger impressed
48	TP-01	complete	reddish brown	2.5YR 5/4	6.8	18.2	0	0	
50	TP-01	complete	light gray	10YR 7/2	4	14.2	16.3	0	not perfectly round, slightly elongated and almost flat on one end
50	TP-01	complete	very pale brown	10YR 7/3	2	12.5	0	0	chip taken out of side
64	TP-01	complete	light red	2.5YR 5/6	4	15.5	0	0	pitted surface
64	TP-01	complete	very pale brown	10YR 7/3	4	16.3	0	0	two chips taken out of side
90	TP-03	complete	pink	7.5YR 7/4	3.4	15.5	0	0	one side is dented/ finger impressed
92	TP-03	complete	red	2.5YR 5/6	2.8	14.5	0	0	two small nicks and one side is slightly impressed
94	TP-03	complete	brown	7.5YR 5/2	3.9	15.1	0	0	smooth surface
95	TP-03	complete	red	2.5YR 5/6	2.9	14.4	0	0	chip out of one side
95	TP-03	fragment	red	2.5YR 5/6	2.4	16.8	0	0	half of a clay ball; core is completely oxidized
133	TP-04	complete	reddish brown	5YR 5/3	4.8	16.2	0	0	
130	TP-04	complete	reddish yellow	5YR 6/6	19.8	30.2		20.42	clay ball with center impressed by a finger to form an expedient cupule; function unclear

## BIBLIOGRAPHY

- Adams, R. M.  
1966 *The Evolution of Urban Society: Early Mesopotamia and Prehispanic Mexico*. Aldine Pub. Co., Chicago.
- Allchin, F. R.  
1995 Early Cities and States Beyond the Ganges Valley. In *The Archaeology of Early Historic South Asia: The Emergence of Cities and States*, edited by F. R. Allchin and G. Erdosy, pp. 123-151. Cambridge University Press, Cambridge.
- Anderson, D. D.  
2005 The Use of Caves in Peninsular Thailand in the Late Pleistocene and Early and Middle Holocene. *Asian Perspectives* 44(1):137-153.
- Anderson, J.  
2001 Reinterpreting the Rural-Urban Connection: Migration Practices and Socio-Cultural Dispositions of Buhera Workers in Harare. *Africa* 71:82-112.
- Arnauld, M. C., L. R. Manzanilla and M. E. Smith (editors)  
2012 *The Neighborhood as a Social and Spatial Unit in Mesoamerican Cities*. The University of Arizona Press, Tucson.
- Aung, H.  
1967 *A History of Burma*. Columbia University Press, New York.
- Aussavamas, D.  
2012 Technology of Dvaravati Pottery: A View from Petrographic Analysis. *Bulletin of the Indo-Pacific Prehistory Association* 31:4-16.
- Baines, J. and N. Yoffee  
2000 Order, Legitimacy, and Wealth: Setting the Terms. In *Order Legitimacy, and Wealth in Ancient States*, edited by J. Richards and M. V. Buren, pp. 13-17. Cambridge University Press, Cambridge.

Barram, A.

2003 Dating 'Dvaravati'. *Bulletin of the Indo-Pacific Prehistory Association* 23:59-63.

2004 A Report on Excavations at U-Thong, Thailand (a re-examination of the excavations of the Thai-British Expedition of 1969-70). M.A. thesis, Australian National University.

Barram, A. and I. Glover

2008 Re-thinking Dvaravati. In *From Homo Erectus to the Living Traditions. Choice of Papers from the 11th International Conference of the European Association of Southeast Asian Archaeologists*, edited by J. Pautreau, A. Coupey, V. Zeitoun and E. Rambault, pp. 175-182. European Association of Southeast Asian Archaeologists, Bougon.

Bayard, D. T.

1972 Excavations at Non Nok Tha, Northeastern Thailand 1968: An Interim Report. *Asian Perspectives* 13:109-143.

1980 An Early Indigenous Bronze Technology in Northeast Thailand: Its Implications for the Prehistory of East Asia. In *The Diffusion of Material Culture*, edited by H. H. E. Loofs, pp. 191-214. University of Hawai'i, Honolulu.

Beal, S.

1884 *Buddhist Records of the Western World*. Trübner, London.

Bellina, B.

2001 Témoignages Archéologiques d'Échanges entre l'Inde et l'Asie du Sud-Est, Morphologie, Morphométrie et Techniques de Fabrication des Perles en Agate et en Cornaline (VIe Siècle avant Notre Ère – VIe Siècle de NotreÈre). thèse de doctorat, Université Sorbonne Nouvelle, Paris III.

2003 Beads, Social Change and Interaction between India and South-east Asia. *Antiquity* 77:285-297.

2006 The Archaeology of Trans-Asiatic Exchange: Technological and Settlement Evidence from Khao Sam Kaeo, Peninsula Thailand. *Bulletin de l'Ecole Francaise d'Extreme-Orient* 93:249-390.

2007 *Cultural Exchange between India and Southeast Asia: Production and Distribution of Hard Stone Ornaments (VI c. BC-VI c. AD)*. Collection "Référentiels". Éditions de la Maison des sciences de l'homme, France.

- Bellina, B. and I. Glover  
 2004 The Archaeology of Early Contact with India and the Mediterranean World, from the Fourth Century B.C. to the Fourth Century A.D. In *Southeast Asia: From Prehistory to History*, edited by I. Glover and P. Bellwood, pp. 21-40. Routledge Curzon, London.
- Bellina, B. and P. Silapanth  
 2006 Khao Sam Kaeo and the Upper Thai Peninsula: Understanding the Mechanisms of Early Trans-Asiatic Trade and Cultural Exchange. In *Uncovering Southeast Asia's Past: Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists*, edited by E. A. Bacus, I. C. Glover and V. C. Pigott, pp. 379-392. National University Press, Singapore.
- Bellwood, P.  
 2004 The Origins and Dispersal of Agricultural Communities in Southeast Asia. In *Southeast Asia: From Prehistory to History*, edited by I. Glover and P. Bellwood, pp. 21-40. Routledge Curzon, London.
- 2005 *First Farmers: The Origins of Agricultural Societies*. Blackwell, Oxford.
- Bernet Kempers, A. J.  
 1988 *The Kettledrums of Southeast Asia: A Bronze Age World and Its Aftermath*. Modern Quaternary Research in Southeast Asia, Vol. 10. Balkema, Rotterdam.
- Bhumadhon, B.  
 1983 *The History of Lopburi during the Dvaravati Period*. Krung Siam Press, Bangkok.
- 1987 *The Archaeology of Muang Dongkorn* (in Thai). Amarin Printing Group, Bangkok.
- Blanton, R. E.  
 1976 Anthropological Studies of Cities. *Annual Review of Anthropology* 5:249-264.
- Boeles, J. J.  
 1964 The King of Sri Dvaravati and His Regalia. *Journal of the Siam Society* 52(1):99-110.
- Boisselier, J.  
 1965a Récentes Recherches Archéologiques en Thaïlande: Rapport Préliminaire de Mission (25 Juillet-28 Novembre 1964). *Arts Asiatiques* XII:125-174.



- 1965b U-T'ong et Son Importance pour l'Histoire de Thaïlande. *Silpakorn Journal* 9(1):27-30.
- 1968 *Nouvelles Connaissances Archéologiques de la Ville d'U-T'ong*, Bangkok.
- 1970 Récentes Recherches à Nakhon Pathom. *Journal of the Siam Society* 58(1):55-65.
- 1975 *The Heritage of Thai Sculpture*. Asia Books, Bangkok.
- Boyd, W. E., C. F. W. Higham and R. J. McGrath  
 1999 The Geoarchaeology of Iron Age "Moated" Sites of the Upper Mae Nam Mun Valley, N.E. Thailand. I. Palaeodrainage, Site-Landscape Relationships and the Origins of the "Moats". *Geoarchaeology* 14(7):675-716.
- Boyd, W. E., R. J. McGrath and C. F. W. Higham  
 1999 The Geoarchaeology of the Prehistoric Ditched Sites of the Upper Mae Nam Mun Valley N.E. Thailand (2): Stratigraphy and Morphological Sections of the Encircling Earthworks. *Bulletin of the Indo-Pacific Prehistory Association* 18(169).
- Bradley, R.  
 1998 *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*. Routledge, New York.
- Bronson, B.  
 1976 Excavations at Chansen and the Cultural Chronology of Protohistoric Central Thailand English. Ph.D dissertation, Department of Anthropology, University of Pennsylvania.
- 1979 The Archaeology of Sumatra and the Problem of Srivijaya. *Early South East Asia*:395-405.
- Bronson, B. and G. F. Dales  
 1972 Excavations at Chansen, Thailand, 1968, 1969: A Preliminary Report. *Asian Perspectives* 15(1):15-46.
- Brown, R. L.  
 1996 *The Dvāravatī Wheels of the Law and the Indianization of South East Asia*. Studies in Asian Art and Archaeology, vol. 18. E.J. Brill, Leiden.
- Brown, R. L. and A. M. MacDonnell  
 1989 The Pong Tuk Lamp: A Reconsideration. *Journal of the Siam Society* 77(2):9-20.

- Champakalakshmi, R.  
1996 *Trade, Ideology and Urbanization: South India 300 BC to AD 1300*. Oxford University Press, New Delhi.
- Chataratiyakarn, P.  
1984 The Middle Chi Research Programme. In *Prehistoric Investigations in Northeast Thailand*, edited by C. F. W. Higham and A. Kijngam, pp. 565-643. British Archaeological Reports (International Series) 231.
- Chavannes, E.  
1894 *Mémoire Composé à l'Époque de la Grande Dynastie T'ang sur les Religieux Éminents qui Allèrent Chercher la Loi dans les Pays d'Occident par l'Tsing*. Ernest Leroux, Paris.
- Childe, V. G.  
1950 The Urban Revolution. *The Town Planning Review* 21(1):3-17.
- Childs, S. T.  
2000 Traditional Iron Working: A Narrated Ethnoarchaeological Example. In *Ancient African metallurgy: the socio-cultural context*, edited by J. O. Vogel, pp. 199-254. Alta Mira Press, New York.
- Chokngamwong, R. and L. S. Chiu  
2008 Thailand Daily Rainfall and Comparison with TRMM Products. *Journal of Hydrometeorology* 9:25.
- Chongkol, C. and H. W. Woodward  
1966 *Guide to the U-Thong National Museum, Suphanburi* (in Thai with English translation). Fine Arts Department of Thailand, Bangkok.
- Christaller, W.  
1933 *Die zentralen Orte in Süddeutschland: eine ökonomisch-geographische Untersuchung über die Gesetzmässigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen*. Gustav Fischer, Jena.  
  
1966 *Central Places in Southern Germany*. Translated by C. W. Baskin. Prentice-Hall, Englewood Cliffs, N.J.
- Chuenwattana, N.  
2010 Rice Grain Charring Experiments: Can We Distinguish Sticky or Plain Archaeologically? M.Sc. thesis, Institute of Archaeology, University College London.

Ciarla, R.

1992 The Thai-Italian Lopburi Regional Archaeological Project: Preliminary Results. In *Southeast Asian Archaeology 1990: Proceedings of the Third Conference of the European Association of Southeast Asian Archaeologists*, edited by I. Glover, pp. 111-128. Centre for South-East Asian Studies, University of Hull, Hull.

Clarke, W.

2011 Return to P'ong Tuk: Preliminary Reconnaissance of a Seminal Dvaravati Site in West-central Thailand. M.A. thesis, Center for International Studies, Ohio University.

Coedès, G.

1928a The Excavations of Pong Tuk and Their Importance for the Ancient History of Siam. *Journal of the Siam Society* 21(3):195-209.

1928b *Les Collections Archeologiques du Musee National de Bangkok*. Ars Asiatica XII, Paris.

1929 *Recueil des Inscriptions du Siam. Deuxième Partie: Inscriptions de Dvāravatī, de Çrīvijaya et de Lāvo*. Bangkok Times Press, Bangkok.

1956 Une Roue de la Loi avec Inscription en Pāli Provenant du Site P'ra Pathom. *Artibus Asiae* 19(3/4):221-226.

1958 Nouvelles Données Épigraphiques sur l'Histoire de l'Indochine Centrale. *Journal Asiatique* 249:123-142.

1963 *Angkor*. Oxford University Press, Oxford.

1964 Découverte Numismatique au Siam Intéressant le Royaume de Dvāravatī *Comptes Rendus de L'Académie des Inscriptions*:285-291.

1968 *The Indianized States of Southeast Asia*. East-West Center Press, Honolulu.

Colani, M.

1927 L'Âge de la Pierre dans la Province de Hoa Binh. *Mémoires du Service Géologique de l'Indochine* 13(1).

Colombijn, F.

1994 *Patches of Padang: The History of an Indonesian Town in the Twentieth Century and the Use of Urban Space*. Center for Non-Western Studies, Leiden University, Leiden.

- Coningham, R. A. E.  
 1995 Monks, Caves and Kings: A Reassessment of the Nature of Early Buddhism in Sri Lanka. *World Archaeology* 27(2):222-242.
- 1999 *Anuradhapura, Volume 1: The Site*. Society for South Asian Studies Monograph no. 3. Archaeopress, Oxford.
- 2000 Contestatory Urban Texts or Were Cities in South Asia Built as Texts. *Cambridge Archaeological Journal* 10(2):348-354.
- 2001 The Archaeology of Buddhism. In *Archaeology and World Religion*, edited by T. Insoll, pp. 61-95. Routledge, New York.
- Coningham, R. A. E. and F. R. Allchin  
 1995 The Rise of Cities in Sri Lanka. In *The Archaeology of Early Historic South Asia: The Emergence of Cities and States*, edited by F. R. Allchin and G. Erdosy, pp. 152-185. Cambridge University Press, Cambridge.
- Cowgill, G. L.  
 1992 Social Differentiation at Teotihuacan. In *Mesoamerican Elites: An Archaeological Assessment*, edited by D. Z. Chase and A. F. Chase, pp. 206-220. University of Oklahoma Press, Norman.
- 2000 Intentionality and Meaning in the Layout of Teotihuacan, Mexico. *Cambridge Archaeological Journal* 10(2):358-361.
- 2004 Origins and Development of Urbanism: Archaeological Perspectives. *Annual Review of Anthropology* 33:525-549.
- Crown, P.  
 1994 *Ceramics and Ideology, Salado Polychrome Pottery*. University of New Mexico Press, Albuquerque.
- Dellios, R.  
 2003 Mandala: From Sacred Origins to Sovereign Affairs in Traditional Southeast Asia. In *Centre for East-West Cultural and Economic Studies Research Papers. Paper 10*.
- Deloche, J.  
 2007 *Studies on Fortification in India*. Collection Indologie 104. École Française d'Extrême-Orient, Pondicherry.
- Doungsakun, S.  
 2005 Paleo-Environmental Study at Khok Chang Din Ruins, U-Thong District, Suphanburi Province. M.Sc. thesis, Mahidol University.

Dupont, P.

1939 Rapport de M. P. Dupont sur sa Mission Archéologique en Thaïlande (18 Janvier-25 Mai 1939). *Bulletin de l'Ecole Française d'Extrême-Orient* 39(2):351-366.

1959 *L'Archéologie Mône de Dvaravati*. Publications de l'Ecole Française d'Extrême-Orient. École Française d'Extrême-Orient, Paris.

Dussubieux, L. and B. Gratuze

2000 *Indo-Pacific Beads*. Centre Ernest Babelon, Institut de Recherches sur les Archéomatériaux, Center National de la Recherche Scientifique, Orléans.

Evans, D., C. Pottier, R. Fletcher, S. Hensley, I. Tapley, A. Milne and M. Barbetti

2007 A Comprehensive Archaeological Map of the World's Largest Preindustrial Settlement Complex at Angkor, Cambodia. *Proceedings of the National Academy of Sciences* 104(36):14277-14282.

Feinman, G. M. and J. Marcus

1998 *Archaic States*. School of American Research Advanced Seminar Series. School of American Research Press, Santa Fe.

Fine Arts Department of Thailand

1998 *Ku Bua: A Relationship with Dvaravati Communities Nearby* (in Thai). Fine Arts Department, Bangkok.

2000 *Thungsetthi: An Ancient Dvaravati Site on the Phetchaburi Coast* (in Thai). Fine Arts Department, Bangkok.

2009 *Dvaravati Art: The Early Buddhist Art of Thailand* (in Thai with some English translations). Fine Arts Department and National Museum of Thailand, Bangkok.

Fine Arts Department of Thailand and Phra Pathom Chedi National Museum

2006 *Project of Study and Public Relations of the Culture along Bang Kaeo – Bang Khaem for Tourist Development* (in Thai). Petkasem Press, Nakhon Pathom.

Flannery, K. V.

1998 The Ground Plans of Archaic States. In *Archaic States*, edited by G. M. Feinman and J. Marcus, pp. 15-57. School of American Research Press, Santa Fe.

Fletcher, R., D. Evans, I. Tapley and A. Milne

2004 Angkor: Extent, Settlement Pattern and Ecology. Preliminary Results of an AIRSAR Survey in September 2000. *Bulletin of the Indo-Pacific Prehistory Association* 24(133-138).

- Fletcher, R., D. Penny, D. Evans, C. Pottier, M. Barbetti, M. Kummu and T. Lustig  
 2008 The Water Management Network of Angkor, Cambodia. *Antiquity* 82(317):658-670.
- Fogelin, L.  
 2003 Beyond the Monastery Walls: The Archaeology of Early Buddhism in North Coastal Andhra Pradesh, India. Ph.D. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.  
 2006 *Archaeology of Early Buddhism*. Alta Mira Press, Lanham.
- Foucault, M.  
 1977 *Discipline and punish: the birth of the prison*. Pantheon Books, New York.
- Fox, E. W.  
 1971 *History in Geographic Perspective*. Norton, New York.
- Fox, R. G.  
 1977 *Urban Anthropology: Cities in Their Cultural Settings*. Prentice-Hall, Englewood Cliffs.
- Francis, P.  
 2002 *Asia's Maritime Bead Trade: 300 B.C. to the Present*. University of Hawai'i Press, Honolulu.
- Fuller, D. and L. Qin  
 2009 Water Management and Labour in the Origins and Dispersal of Asian Rice. *World Archaeology* 41(1):88-111.
- Fuller, D., L. Qin, Y. Zheng, Z. Zhao, X. Chen, L. Hosoya and G. Sun  
 2009 The Domestication Process and Domestication Rate in Rice: Spikelet Bases from the Lower Yangtze. *Science* 323:1607-1609.
- Fustel de Coulanges, N. D.  
 1864 *La Cité Antique: Étude sur le Culte, le Droit, les Institutions de la Grèce et de Rome*. Durand, Paris.  
 1963 *The Ancient City: A Study of the Religion, Laws, and Institutions of Greece and Rome*. Doubleday, New York.
- Glover, I.  
 1980 Ban Don Ta Phet and Its Relevance to Problems in the Pre- and Proto-History of Thailand. *Bulletin of the Indo-Pacific Prehistory Association* 2:16-30.

1989 *Early Trade between India and Southeast Asia: A Link in the Development of a World Trading System*. Centre for South-East Asian Studies, University of Hull, Hull.

1990 Ban Don Ta Phet: The 1984-85 Excavation. In *Southeast Asian Archaeology 1986*, edited by I. Glover and E. Glover. BAR International Series 561, Cambridge.

1998 The Role of India in the Late Prehistory of Southeast Asia. *Journal of Southeast Asian Archaeology* 18:21-49.

2010 The Dvaravati Gap - Linking Prehistory and History in Early Thailand. *Bulletin of the Indo-Pacific Prehistory Association* 30:79-86.

Gosling, B.

2004 *The History of Thai Art*. River Books, Bangkok.

Grieco, M.

1995 Transported Lives: Urban Social Networks and Labour Circulation. In *The Urban Context: Ethnicity, Social Networks and Situational Analysis*, edited by A. Rogers and S. Vertovec, pp. 189-212. Berg, Oxford.

Groslier, B.

1974 Agriculture et Religion dans l'Empire Angkorien. *Études Rurales* 53-56(95-118).

Guillon, E.

1999 *The Mons: A Civilization of Southeast Asia*. Siam Society, Bangkok.

Gunawardana, R. A. L. H.

1979 *Robe and Plough: Monasticism and Economic Interest in Early Medieval Sri Lanka*. Association for Asian Studies, University of Arizona Press, Tucson.

Gutman, P. and B. Hudson

2004 The Archaeology of Burma (Myanmar) from the Neolithic to Pagan. In *Southeast Asia* edited by I. Glover and P. Bellwood, pp. 149-176. Routledge Curson, London.

Haaland, G., R. Haaland and S. Rijal

2002 The Social Life of Iron: A Cross-Cultural Study of Technological, Symbolic, and Social Aspects of Iron Making. *Anthropos*:35-54.

Hansen, M. H.

2000 *A Comparative Study of Thirty City-State Cultures: An Investigation Conducted by the Copenhagen Polis Centre*. Kongelige Danske Videnskabernes Selskab, Copenhagen.

2002 *A Comparative Study of Six City-State Cultures: An Investigation Conducted by the Copenhagen Polis Centre*. Kongelige Danske Videnskaberne Selskab, Copenhagen.

Heitzman, J.

1984 Early Buddhism: Trade and Empire. In *Studies in the Archaeology and Paleoanthropology of South Asia*, edited by K. A. R. Kennedy and G. L. Possehl. Oxford University Press, New Delhi.

1997 *Gifts of Power: Lordship in an Early Indian State*. Oxford University Press, Delhi.

Higham, C.

1989 *The Archaeology of Mainland Southeast Asia: from 10,000 B.C. to the Fall of Angkor*. Cambridge University Press, Cambridge.

1996 *The Bronze Age of Southeast Asia*. Cambridge World Archaeology. Cambridge University Press, Cambridge.

2000 The Symbolism of the Angkorian City. *Cambridge Archaeological Journal* 10(2):355-357.

2002 *Early Cultures of Mainland Southeast Asia*. River Books, Bangkok.

2004 Mainland Southeast Asia from the Neolithic to the Iron Age. In *Southeast Asia: From Prehistory to History*, edited by I. Glover and P. Bellwood, pp. 41-67. Routledge Curzon, London.

Higham, C. and R. Bannanurag

1990 The Excavation of Khok Phanom Di: A Prehistoric Site in Central Thailand. Volume I: The Excavation, Chronology and Human Burials. In *Reports of the Research Committee of the Society of Antiquaries of London*. vol. 47, London.

Higham, C. and T. Higham

2009 A New Chronological Framework for Prehistoric Southeast Asia, Based on a Bayesian Model from Ban Non Wat. *Antiquity* 83:125-144.

Higham, C., A. Kijngam and P. Chantaratiyakarn

1984 *Prehistoric Investigations in Northeast Thailand: Excavations at Ban Na Di, Non Kao Noi, Ban Muang Phruk, Ban Chiang Hian, Non Noi, Ban Kho Noi, and Site Surveys in the Upper Songkhram and Middle Chi Valleys*. BAR international series, Oxford.



- Higham, C., A. Kijngam and B. F. Manly  
 1982 Site Location and Site Hierarchy in Prehistoric Thailand. *Proceedings of the Prehistoric Society* 48:1-27.
- Higham, C., A. Kijngam and S. Talbot (editors)  
 2007 *The Origins of the Civilization of Angkor, Volume 2: The Excavation at Noen U-Loke and Non Muang Kao*. Fine Arts Department of Thailand, Bangkok.
- Higham, C. and R. Thosarat  
 1994 *Khok Phanom Di: Prehistoric Adaptation to the World's Richest Habitat*. Case Studies in Archaeology Series. Harcourt Brace College Publishers, Fort Worth.
- 1998a *The Excavation of Nong Nor, a Prehistoric Site in Central Thailand*. Otago University Studies in Prehistoric Anthropology no. 18, Dunedin.
- 1998b *Prehistoric Thailand: From Early Settlement to Sukhothai*. River Books, Bangkok.
- 2007 Ban Non Wat: The First Three Seasons. In *Uncovering Southeast Asia's Past: Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists*, edited by E. Bacus, I. Glover and V. Piggot, pp. 98-104. University of Hawaii Press, Honolulu.
- Ho, C.  
 1984 The Pottery of Kok Charoen and Its Farther Context. Ph.D. dissertation, University of London.
- 1992 An Analysis of Settlements Patterns in the Lopburi Area. In *Early Metallurgy, Trade and Urban Centres in Thailand and Southeast Asia*, edited by I. Glover, P. Suchitta and J. Villiers, pp. 39-45. White Lotus, Bangkok.
- Hurles, M.  
 2003 Can the Hypothesis of Language/Agriculture Co-dispersal Be Tested with Archaeogenetics? In *Examining the Farming/Language Dispersal Hypothesis*, edited by P. Bellwood and C. Renfrew, pp. 299-231. McDonald Institute for Archaeological Research, Cambridge.
- Indrawooth, P.  
 1983 *The Excavation at the Ancient Town of Nakhon Phatom, Tambon Phra Praton, Amphoe Muang, Changwat Nakhon Pathom* (in Thai). Silpakorn University Press, Nakhon Pathom.

- 1984 Results from the excavation within the ancient town of Nakhon Phatom, Tambon Phra Praton, Amphoe Muang, Changwat Nakhon Pathom (in Thai). *Journal of Silpakorn University Special Issue*:148-168.
- 1985 *Index Pottery of Dvaravati Period* (in Thai). Dept. of Archaeology, Silpakorn University, Bangkok.
- 1994 Dvaravati Culture in the Chi Valley: A Study on Muang Fa Daed Song Yang. *Muang Boran Journal* 20(1).
- 1999 *Dvaravati: A Critical Study Based on Archaeological Evidence* (in Thai with English summary). Aksonsmi, Bangkok.
- 2001 *Report on the Excavation at Muang Fa Daed Song Yang, Kamalasai District, Kalasin Province* (in Thai). Silpakorn University, Bangkok.
- 2004 The Archaeology of the Early Buddhist Kingdoms of Thailand English. In *Southeast Asia: From Prehistory to History*, edited by I. Glover and P. S. Bellwood, pp. 120-148. Routledge Curzon, New York.
- 2008 Recent Research on Dvaravati Cultural Workshop Sites in Petchaburi Province, Central Thailand. In *Interpreting Southeast Asia's Past, Volume 2: Monument, Image and Text*, edited by E. A. Bacus, I. Glover, P. D. Sharrock and V. C. Pigott, pp. 306-322. NUS Press, Singapore.

Indrawooth, P., S. Krabuansang and P. Narkwake

- 1991 Muang Fa Daed Song Yang: New Archaeological Discoveries. In *Récentes Recherches en Archéologie en Thaïlande: Deuxieme Symposium Franco-Thai*, pp. 98-111. Silpakorn University, Bangkok.

Izikowitz, K. G.

- 1951 *Lamet: Hill Peasants in French Indochina*. Etnologiska Studier 17. Etnografiska Museet, Goteborg.

Jaques, C.

- 1986 Le Pays Khmer Avant Angkor. *Journal des Savants* Jan.-Sept.:59-95.

Jirawattana, M.

- 2003 *The Bronze Kettledrum in Thailand*. The Office of National Museums, Fine Arts Department of Thailand.

Johnson, G. A.

- 1973a Aspects of Regional Analysis in Archaeology. *Annual Review of Anthropology* 6:479-508.

1973b Local Exchange and Early State Development in Southwestern Iran.  
*University of Michigan Museum of Anthropology, Anthropological Paper No. 51.*

Junker, L. L.

2006 Population Dynamics and Urbanism in Premodern Island Southeast Asia.  
In *Urbanism in the Preindustrial World: Cross-Cultural Approaches*, edited by G.  
R. Storey, pp. 203-230. The University of Alabama Press, Tuscaloosa.

Kaida, Y.

1976 Agro-Hydraulic Regions of the Chao Phraya Delta. In *Southeast Asia:  
Nature, Society, and Development*, edited by S. Ichimura, pp. 139-166. University  
of Hawai'i Press, Honolulu.

Kanjanajuntorn, P.

2006 Developing Social Complexity in Metal Age West-Central Thailand ca.  
500 BC - AD 500 English. Ph.D. dissertation, Department of Archaeology and  
Anthropology, University of Bristol, Bristol.

Kaongoen, P.

2002 *The Archaeology of Khok Chang Din* (in Thai). Fine Arts Department,  
Suphanburi.

Kautilya

1967 Kautilya's Arthashastra. 8th ed. Translated by R. Shamasastri. Mysore  
Printing and Publishing House, Mysore.

Kealhofer, L.

1996 The Human Environment during the Terminal Pleistocene and Holocene  
in Northeastern Thailand: Phytolith Evidence from Lake Kumphawapi. *Asian  
Perspectives* 35:229-254.

2002 Changing Perceptions of Risk: The Development of Agro-Ecosystems in  
Southeast Asia. *American Anthropologist* 104(1):178-194.

Kealhofer, L. and P. Grave

2008 Land Use, Political Complexity, and Urbanism in Mainland Southeast Asia.  
*American Antiquity* 73(2):200-225.

Keith, K.

2003 The Spatial Patterns of Everyday Life in Old Babylonian Neighborhoods.  
In *The Social Construction of Ancient Cities*, edited by M. L. Smith, pp. 56-80.  
Smithsonian Institution, Washington, DC.

- Khunsong, S.  
2009 *Preliminary Report on the Excavation at Hor-Ek Site, Ancient Nakhon Pathom* (in Thai). Department of Archaeology, Silpakorn University, Bangkok.
- Khunsong, S., P. Indrawooth and S. Natapintu  
2011 Excavation of a Pre-Dvāravatī Site at Hor-Ek in Ancient Nakhon Pathom. *Journal of the Siam Society* 99:150-171.
- Kijngam, A., C. Higham and W. Wiriyaromp  
1980 *Prehistoric Settlement Patterns in Northeast Thailand: The Result of Site Surveys Undertaken in January and February 1980*. University of Otago studies in Prehistoric Anthropology. Dept. of Anthropology, University of Otago, Otago, N.Z.
- Kim, N. C., L. V. Toi and T. H. Hiep  
2010 Co Loa: An Investigation of Vietnam's Ancient Capital. *Antiquity* 84:1011-1027.
- Kingmani, A., W. Thepsuriyanont and P. Kaongoen  
2002 *Archaeology of U-Thong* (in Thai). Fine Arts Department, Suphanburi.
- Kolata, A. L.  
1993 Understanding Tiwanaku: Conquest, Colonization and Clientage in the South Central Andes. In *Latin American Horizons: A Symposium at Dumbarton Oaks, 11th and 12th October 1986*, edited by D. S. Rice, pp. 193-224. Dumbarton Oaks Research Library and Collection, Washington D.C.
- Krachaechan, P.  
2001 The Excavation at Ban Nong Chik Archaeological Site: Dvaravati Handicraft Manufacturing Site (in Thai). *Muang Boran* 17(1):141-146.
- Krairiksh, P.  
1975 The Chula Pathon Cedi: Architecture and Sculpture of Dvāravatī. Ph.D. dissertation, Harvard University, Cambridge.
- Krom, N. J.  
1926 *Hindoe-Javaansche Geschiedenis*. Martinus Nijhoff, 's-Gravenhage.
- Lam, T. M. D.  
2009 Sa Huynh Regional and Inter-regional Interactions in the Thu Bon Valley, Quang Nam Province, Central Vietnam. *Bulletin of the Indo-Pacific Prehistory Association* 29:68-75.

- Lertcharnrit, T.  
 2006 The Moated Site of Promptin Tai and the Transition from Late Prehistory to Early History in Central Thailand. In *Uncovering Southeast Asia's Past: Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists*, edited by E. A. Bacus, I. C. Glover and V. Piggot, pp. 258-265. University of Hawaii Press, Honolulu.
- Lertrit, S.  
 2001 Ceramic Chronology for Central Thailand: A View From the Pasak River Valley. Ph.D. dissertation, Department of Anthropology, Washington State University.  
 2004 Sab Champa Revisited: Results of Recent Archaeological Field Investigations. In *Southeast Asian Archaeology: Wilhelm G. Solheim II festschrift*, edited by V. Paz and W. G. Solheim, pp. 504-521. University of the Philippines Press, Quezon City.
- Lertrit, S., P. Jumprom and A. Klinpoklab  
 2001 The 2001 Archaeological Excavation at Sab Champa: Results and Speculation. *Muang Boran* 29:72-87.
- Lewchaichan, B.  
 2006 *Sri Mahosot* (in Thai). Yumianulot Rawayoorit, Bangkok.
- Loofs, H. H. E.  
 1970 A Brief Account of the Thai-British Archaeological Expedition. *Archaeology & Physical Anthropology in Oceania* 5(3):177-184.  
 1979 Problems of Continuity between Pre-Buddhist and Buddhist Periods in Central Thailand. In *Early South East Asia - Essays in Archaeology, History and Historical Geography*, edited by R. B. Smith and W. Watson, pp. 342-351. Oxford University Press, London.  
 1991 Dongson Drums: Instruments of Shamanism or Regalia? *Arts Asiatiques* 49:39-49.
- Loofs, H. H. E. and W. Watson  
 1970 The Thai-British Archaeological Expedition: A Preliminary Report on the Work of the Second Season 1967. *Journal of the Siam Society* 58(2):67-78.
- Lösch, A.  
 1940 *Die Räumliche Ordnung der Wirtschaft: Eine Untersuchung Über Standort, Wirtschaftsgebiete und Internationalen Handel*. Gustav Fischer, Jena.  
 1954 *The Economics of Location*. Yale University Press, New Haven.

- Lyons, E.  
 1965 The traders of Ku Bua. *Archives of Chinese Art Society of America* 19:52-56.
- 1979 Dvaravati: A Consideration of Its Formative Period English. In *Early South East Asia*, edited by R. Smith and W. Watson, pp. 352-359. Oxford University Press, Oxford.
- Mabbett, I. W.  
 1977 The 'Indianization' of Southeast Asia: Reflections on the Historical Sources. *Journal of Southeast Asian Studies* 8(2):143-161.
- 1978 Kingship at Angkor. *Journal of the Siam Society* 66(2):1-58.
- Macdonald, W. K.  
 1980 Some Implications of Societal Complexity: Organizational Variability at Non Nok Tha, Thailand (2000-0 B.C.). Ph.D. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.
- Majumdar, R. C.  
 1952 *Greater India*. Motilal Banararsidas, Delhi.
- Mallert, L.  
 1959-63 *L'Archéologie du Delta Mekong*. 4 vols. École Française d'Extrême Orient, Paris.
- Manguin, P.-Y.  
 2004 The Archaeology of the Early Maritime Polities of Southeast Asia. In *Southeast Asia: From Prehistory to History*, edited by I. Glover and P. S. Bellwood, pp. 282-313. Routledge Curzon, New York.
- Manguin, P.-Y. and S. K. Vo  
 2000 Excavations at the Ba The/Oc Eo Complex (Viet Nam): A Preliminary Report on the 1998 Campaign. In *Southeast Asian Archaeology 1998*, edited by W. Lobo and S. Reimann, pp. 107-121. University of Hull, Centre for South-East Asian Studies, Hull.
- Marcus, J.  
 1998 The Peaks and Valleys of Ancient States: An Extension of the Dynamic Model. In *Archaic States*, edited by G. M. Feinman and J. Marcus, pp. 3-14. School of American Research Press, Santa Fe.
- Marcus, J. and K. Flannery  
 1996 *Zapotec Civilization: How Urban Society Evolved in Mexico's Oaxaca Valley*. Thames and Hudson, London.

- Marcus, J. and J. A. Sabloff  
2008a *The Ancient City: New Perspectives on Urbanism in the Old and New World*. School for Advanced Research Press, Santa Fe.
- 2008b Introduction. In *The Ancient City: New Perspectives on Urbanism in the Old and New World*, edited by J. Marcus and J. A. Sabloff, pp. 3-26. School for Advanced Research Press, Santa Fe.
- Marwick, B.  
2009 Biogeography of Middle Pleistocene Hominins in Mainland Southeast Asia: A Review of Current Evidence. *Quaternary International* 202(1-2):51-58.
- McCrindle, J. W.  
1877 Ancient India as Described by Megasthenês and Arrian. Thacker and Spink, Calcutta.
- McGrath, R. J. and W. E. Boyd  
2001 The Chronology of the Iron Age 'Moats' of Northeast Thailand. *Antiquity* 75(288):349-360.
- McIntosh, S. K. and R. J. McIntosh  
1993 Cities without Citadels: Understanding Urban Origins along the Middle Niger. In *The Archaeology of Africa: Food, Metals, and Towns*, edited by C. T. Shaw, P. Sinclair, B. Andah and A. Okpako, pp. 622-641. Routledge, London.
- Miksic, J. N.  
1999 Water, Urbanization, and Disease in Ancient Indonesia. In *Complex Polities in the Ancient Tropical World*, edited by E. A. Bacus and L. J. Lucero, pp. 167-184. American Anthropological Association, Arlington.
- 2000 Heterogenetic Cities in Premodern Southeast Asia English. *World Archaeology* 32(1):106-120.
- Moore, E. H.  
1988 *Moated Sites in Early North East Thailand*. BAR International Series 400, Oxford.
- 1989 Water Management in Early Cambodia: Evidence from Aerial Photography. *The Geographical Journal* 155(2):204-214.
- 1992 Water Enclosed Sites: Links between Ban Takhong, Northeast Thailand and Cambodia. In *The Gift of Water: Water Management, Cosmology and the State in South East Asia*, edited by J. Rigg, pp. 26-46. SOAS, London.
- 2007 *Early Landscapes of Myanmar*. River Books, Bangkok.

- Moore, E. H. and S. Win  
2007 The Gold Coast: Suvannabhumi? Lower Myanmar Walled Sites of the First Millennium A.D. *Asian Perspectives* 46(1):202-232.
- Morrison, K. D.  
1995 Trade, Urbanism, and Agricultural Expansion: Buddhist Monastic Institutions and the State in the Early Historic Western Deccan. *World Archaeology* 27(2):203-221.
- Mudar, K. M.  
1993 Prehistoric and Early Historic Settlements on the Central Plain: Analysis of Archaeological Survey in Lopburi province, Thailand. PhD. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.  
  
1995 Evidence for Prehistoric Dryland Farming in Mainland Southeast Asia: Results of Regional Survey in Lopburi Province, Thailand. *Asian Perspectives* 34(2):157-194.  
  
1999 How Many Dvaravati Kingdoms? Locational Analysis of First Millennium A.D. Moated Settlements in Central Thailand English. *Journal of Anthropological Archaeology* 18(1):1-28.
- Murillo-Barroso, M., T. O. Pryce, B. Bellina and M. Martínón-Torres  
2010 Khao Sam Kaeo – An Archaeometallurgical Crossroads for Trans-Asiatic Technological Traditions. *Journal of Archaeological Science* 37(7):1761-1772.
- Murphy, S. A.  
2010a The Buddhist Boundary Markers of Northeast Thailand and Central Laos, 7th-12th Centuries CE: Towards an Understanding of the Archaeological, Religious and Artistic Landscapes of the Khorat Plateau. Ph.D. dissertation School of Oriental and African Studies, University of London, London.  
  
2010b Dvaravati Period Sema Stones: Shifting Meanings and Definitions in Archaeology, Epigraphy, Texts and Religious Re-use. *Rian Thai: International Journal of Thai Studies* 3:259-282.  
  
forthcoming Buddhism and its Relationship to Dvaravati Period Settlement Patterns and Material Culture in Northeast Thailand and Central Laos ca. 6th -11th centuries CE: A Historical Ecology Approach to the Landscape of the Khorat Plateau. *Asian Perspectives*.
- Murphy, S. A. and P. Pongkasetkan  
2010 Fifty years of Archaeological Research at Dong Mae Nang Muang, an Ancient Gateway to the Upper Chao Phraya Basin. *Journal of the Siam Society* 98:49-74.



- Naroll, R.  
1962 Floor Area and Settlement Patterns. *American Antiquity* 27:587-589.
- Natapintu, S.  
2003 Progress on the Archaeological Research at the Site of Ban Pong Manao, Tambon Huay Khunram, Amphoe Phanat Nikhom, Lopburi Province (in Thai). *Muang Boran* 29(2):1-7.
- Nguanphienphak, U.  
2009 Fouilles Récentes au Phra Pathon Chedi. In *Dvâravatî aux Sources du Bouddhisme en Thaïlande*, pp. 145-149. Musee Guimet, Paris.
- Nichols, D. L. and T. H. Charlton  
1997 *The Archaeology of City-States: Cross-Cultural Approaches*. Smithsonian Series in Archaeological Inquiry. Smithsonian Institution Press, Washington.
- Nitta, E.  
1994 Archaeological Meanings of the Heger 1 Drums Newly Found in the Mekhong Basin. *Historical Science Reports, Kagoshima University* 41:9-23.
- Noonsuk, W.  
2009 *The Isthmian Civilizations: The Significance of Peninsular Siam in the Southeast Asian Maritime World*. Lambert Academic Publishing.
- Nuamboonlue, S.  
1996 *An Investigation of the Ancient Settlement of Kamphaeng Saen of Kamphaeng Saen District* (in Thai). Amarin, Bangkok.
- O'Reilly, D. J. W.  
1999 A Diachronic Analysis of Social Organization in the Mun River Valley. Ph.D. dissertation, University of Otago, Dunedin, New Zealand.  
  
2000 From the Bronze Age to the Iron Age in Thailand: Applying the Heterarchical Approach. *Asian Perspectives* 39(1-2):1-19.  
  
2003 Further Evidence of Heterarchy in Bronze Age Thailand. *Current Anthropology* 44(2):300-306.  
  
2006 *Early Civilizations of Southeast Asia*. AltaMira Press, Lanham.
- Onsuwan Eyre, C.  
2006 Prehistoric and Proto-historic Communities in the Eastern Upper Chao Phraya River Valley, Thailand: Analysis of Site Chronology, Settlement Patterns and Land Use. Ph.D. dissertation, Anthropology, University of Pennsylvania.

- Parkinson, W. A. and M. L. Galaty  
 2007 Secondary States in Perspective: An Integrated Approach to State Formation in the Prehistoric Aegean. *American Anthropologist* 109(1):113-129.
- Pawley, A. K.  
 2003 The Austronesian Dispersal: Languages, Technologies and People. In *Examining the Farming/Language Dispersal Hypothesis*, edited by P. Bellwood and C. Renfrew, pp. 251-274. McDonald Institute for Archaeological Research, Cambridge.
- Pendleton, R. L.  
 1962 *Thailand: Aspects of Landscape and Life*. An American Geographical Society Handbook. Duell, New York.
- Piggot, V. and G. Weisgerber  
 1998 Mining Archaeology in Geological Context: The Prehistoric Mining Complex at Phu Lon, Nong Khai Province, Northeast Thailand. In *Metallurgica Antiqua: In Honor of Hans-Bert Bachmann and Robert Maddin*, edited by T. Rehren, A. Hauptmann and J. D. Muhly, pp. 135-162. Deutsches Bergbau-Museum, Bochum.
- Piggot, V., A. D. Weiss and S. Natapintu  
 1997 The Archaeology of Copper Production: Excavations in the Khao Wong Prachan Valley, Central Thailand. In *South-East Asian Archaeology 1992*, edited by R. Ciarla and F. Rispoli, pp. 119-157. Istituto Italiano per L'Africa e L'Oriente, Rome.
- Pisnupong, P.  
 1992 *History and Archaeology of Si Mahasod* (in Thai). Fine Arts Department, Bangkok.  
 1993 *History and Archaeology of Si Mahasod: Part two* (in Thai). Fine Arts Department, Bangkok.
- Pookajorn, S.  
 1984 *The Hoabinhian of Mainland Southeast Asia: New Data from the Recent Thai Excavation in the Ban Kao Area*. Thai Khadi Research Institute, Thammasat University, Bangkok.
- Pottier, C.  
 1999 Carte Archéologique de la Région d'Angkor, Zone Sud, Université Paris III - Sorbonne Nouvelle (UFR Orietn et Monde Arabe).

2000 Some Evidence of an Inter-relationship between Hydraulic Features and Rice Field Patterns at Angkor during Ancient Times (The Hydraulic City in Asia: The Huge Monuments in Terms of the Relationship between Agriculture and Water). *The Journal of Sophia Asian Studies* 18:99-119.

Pramankij, S. and V. Subhavan

2001 Preliminary Report on the Discovery of Evidence of the Oldest Hominids (2 million to 200,000 years old) in Thailand (in Thai). *Silpa Wattanatham* 23:38-47.

Pramojanee, P. and T. Jarupongsakul

1995 Evolution of Landforms and the Sites of Ancient Cities and Communities in Lower Chao Phraya Plain. In *Ayudhya and Asia*, edited by K. Jittasevi, pp. 15-35. Thammasat University Press, Bangkok.

Price, B. J.

1978 Secondary State Formation: An Explanatory Model. *Origins of the State: The Anthropology of Political Evolution*:161-186.

Rajanubhab, H. R. H. P. D.

1973 [1926] *Monuments of the Buddha in Siam*. 2nd ed. Translated by S. Sivaraksa and A. B. Griswold. The Siam Society, Bangkok.

Rajpitak, W. and N. J. Seeley

1979 The Bronze Bowls from Ban Don Ta Phet, Thailand: An Enigma of Prehistoric Metallurgy. *World Archaeology* 11(1):26-31.

Rapoport, A.

1982 *The Meaning of the Built Environment: A Nonverbal Communication Approach*. Sage Publications, Beverly Hills.

Rattanakun, S.

1968 Excavation of an Ancient Site in the Northern Part of Khok Chang Din, U-Thong District, Suphanburi Province. *Silpakorn Journal* 11:78-79.

1992 *The Archaeology of Muang Ku Bua* (in Thai). Fine Arts Department, Bangkok.

Ray, H. P.

1986 *Monastery and Guild: Commerce Under the Satavahanas*. Oxford University Press, Delhi.

1994 *The Winds of Change: Buddhism and the Maritime Links of Early South Asia*. Oxford University Press, Delhi.

2003 *The Archaeology of Seafaring in Ancient South Asia*. Cambridge World Archaeology. Cambridge University Press, Cambridge.

Redfield, R. and R. Singer

1954 The Cultural Role of Cities. *Economic Development and Social Change* 3:335-373.

Reid, A.

1993 *Southeast Asia in the Age of Commerce 1450-1680, Vol. 2: Expansion and Crisis*. Yale, New Haven.

Reinecke, A. and D. S. Le

2000 On New Discovered Sa Huynh Culture Site Go Mun in Central Vietnam. In *Archaeology*, pp. 54-75. vol. 1. Social Sciences Publishers, Hanoi.

Renfrew, C.

1975 Trade as Action at a Distance: Questions of Integration and Communication. In *Ancient Civilizations and Trade*, edited by J. A. Sabloff and C. C. Lamberg-Karlovsky, pp. 3-59. University of New Mexico Press, Albuquerque.

1986 Introduction: Peer Polity Interaction and Socio-Political Change. In *Peer Polity and Socio-Political Change*, edited by C. Renfrew and J. F. Cherry, pp. 1-18. Cambridge University Press, Cambridge.

Renfrew, C. and J. F. Cherry (editors)

1986 *Peer Polity and Socio-Political Change*. Cambridge University Press, Cambridge.

Revire, N.

2010 Iconographical Issues in the Archeology of Wat Phra Men, Nakhon Pathom. *Journal of the Siam Society* 98:75-115.

Reynolds, T. E. G.

1990 The Hoabinhian: A Review. In *Hoabinhian, Jomon, Yayoi, Early Korean States: Bibliographic Reviews of Far Eastern Archaeology*, edited by G. L. Barnes, pp. 1-30. Oxbow Books, Oxford.

Rice, P., M.

1987 *Pottery Analysis: A Sourcebook*. The University of Chicago Press, Chicago.

Rispoli, F.

1997 Late 3rd - Mid 2nd Millennium B.C. Pottery Traditions in Central Thailand: Some Preliminary Observations in a Wider Perspective. In *South-East Asian Archaeology 1992*, edited by R. Ciarla and F. Rispoli, pp. 59-97. Istituto Italiano Per L' Africa e L'Oriente, Rome.

2008 The Incised and Impressed Pottery Style of Mainland Southeast Asia: Following the Paths of Neolithization. *East and West* 57:235-304.

Robertson, I. G.

1999 Spatial and Multivariate Analysis, Random Sampling Error, and Analytical Noise: Empirical Bayesian Methods at Teotihuacan, Mexico. *American Antiquity* 64(1):137-152.

Rogers, J. D.

1990 *Objects of Change: The Archaeology and History of Arikara Contact with Europeans*. Smithsonian Series in Archaeological Inquiry. Smithsonian Institution Press, Washington.

Rowlands, M. and J. P. Warnier

1993 The Magical Production of Iron in the Cameroon Grassfields. In *The Archaeology of Africa*, edited by T. Shaw, P. Sinclair, B. Audah and A. Okpoko. Routledge, London.

Saraya, D.

1999 *(Sri) Dvaravati: The Initial Phase of Siam's History*. Muang Boran, Bangkok.

Scarborough, V. L.

2003a *The Flow of Power: Ancient Water Systems and Landscapes*. School of American Research.

2003b How to Interpret an Ancient Landscape. *Proceedings of the National Academy of Sciences* 100(8):4366-4368.

Schauffler, W.

1976 Archaeological Survey and Excavation of Ban Chiang Culture Sites in Northeast Thailand. *Expedition* (18):27-37.

Schopen, G.

1997 *Bones, Stones, and Buddhist Monks: Collected Papers on the Archaeology, Epigraphy, and Texts of Monastic Buddhism in India*. Studies in the Buddhist Traditions. University of Hawai'i Press, Honolulu.

Shaw, J. and J. V. Sutcliffe

2003 Water Management, Patronage Networks, and Religious Change: New Evidence from the Sanchi Dam Complex and Counterparts in Gujarat and Sri Lanka. *South Asian Studies* 19:73-104.

Shen, C.

2003 Compromises and Conflicts: Production and Commerce in the Royal Cities of Eastern Zhou, China. In *The Social Construction of Ancient Cities*, edited by M. L. Smith, pp. 290-310. Smithsonian Institution, Washington, DC.

Shoocongdej, R.

1996a Rethinking the Development of Sedentary Villages in Western Thailand. *Indo-Pacific Prehistory Association Bulletin* 14:203-215.

1996b Working Toward an Anthropological Perspective on Thai Prehistory: Current Research on the Post-Pleistocene. *Indo-Pacific Prehistory Association Bulletin* 14:119-132.

2000 Forager Mobility Organization in Seasonal Tropical Environments of Western Thailand. *World Archaeology* 32(1):14-40.

Silapanth, P.

2006 Dvaravati Settlements on the Phetchaburi Paleo-Shoreline. In *Uncovering Southeast Asia's Past: Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists*, edited by E. A. Bacus, I. C. Glover and V. C. Pigott, pp. 266-271. National University Press, Singapore.

Sinopoli, C. M.

1986 *Material Patterning and Social Organization: A Study of Ceramics from Vijayanagara, South India*. Ph.D. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.

1991 *Approaches to Archaeological Ceramics*. Plenum Press, New York.

1993 *Pots and Palaces: The Earthenware Ceramics of the Noblemen's Quarter of Vijayanagara*. Vijayanagara Research Project Monograph Series. Manohar, New Delhi.

2003 *The Political Economy of Craft Production: Crafting Empire in South India, c. 1350-1650*. Cambridge University Press, Cambridge.

Sinsakul, S.

1992 Evidence of Quaternary Sea Level Changes in the Coastal Areas of Thailand: A Review. *Journal of Southeast Asian Earth Sciences* 7(1):23-37.

2000 Late Quaternary Geology of the Lower Central Plain, Thailand. *Journal of Asian Earth Sciences* 18:415-426.

- Skilling, P.  
2003 Dvaravati: Recent Revelations and Research English. In *Dedications to Her Royal Highness Princess Galyani Vadhana Krom Luang Naradhiwas Rajanagarindra on her 80th birthday*, edited by C. Baker, pp. 87-112. The Siam Society, Bangkok.
- Smith, A.  
2003 *The Political Landscape: Constellations of Authority in Early Complex Polities*. University of California Press, Berkeley.
- Smith, M. E.  
2007 Form and Meaning in the Earliest Cities: A New Approach to Ancient Urban Planning. *Journal of Planning History* 6(1):3-47.  
  
2009 V. Gordon Childe and the Urban Revolution: A Historical Perspective on a Revolution in Urban Studies. *Town Planning Review* 80(1):3-29.
- Smith, M. L.  
2003a Early Walled Cities of the Indian Subcontinent as "Small Worlds". In *The Social Construction of Ancient Cities*, edited by M. L. Smith, pp. 269-289. Smithsonian Institution, Washington, DC.  
  
2003b Introduction: The Social Construction of Ancient Cities. In *The Social Construction of Ancient Cities*, edited by M. L. Smith, pp. 1-36. Smithsonian Institution, Washington, DC.  
  
2003c *The Social Construction of Ancient Cities*. Smithsonian Institution, Washington, DC.  
  
2006 The Archaeology of South Asian Cities. *Journal of Archaeological Research* 14:97-142.
- Solheim II, W. G.  
1982-83 Remarks on the Lingling-O and the Bi-Cephalous Ornaments. *Journal of the Hong Kong Archaeological Society* 10:107-111.
- Sørensen, P.  
1979 The Ongbah Cave and Its Fifth Drum. In *Early Southeast Asia*, edited by R. B. Smith and W. Watson, pp. 78-97. Oxford University Press, Oxford.  
  
1988 The Kettledrums from Ongbah Cave, Kanchanaburi Province. In *Archaeological Excavations in Thailand. Surface finds and Minor Excavations*, edited by P. Sørensen, pp. 95-156. Scandinavian Institute of Asian Studies Occasional Papers No. 1, Copenhagen.

- Sørensen, P. and T. Hatting  
1967 *Archaeological Investigations in Thailand. Vol. II, Ban Kao. Part 1: The Archaeological Materials from the Burials.* Munksgaard, Copenhagen.
- Stark, M. T.  
2006 Early Mainland Southeast Asia Landscapes in the First Millennium A.D. *Annual Review of Anthropology* 35:407-432.
- Stark, M. T., D. C. W. Sanderson and R. G. Bingham  
2006 Monumentality in the Mekong Delta: Luminescence Dating and Implications. *Bulletin of the Indo-Pacific Prehistory Association* 26:110-120.
- Steponaitis, V. P.  
1981 Settlement Hierarchies and Political Complexity in Nonmarket Societies: The Formative Period of the Valley of Mexico. *American Anthropologist* 85:320-365.
- Storey, G. R.  
2006 *Urbanism in the Preindustrial World: Cross-Cultural Approaches.* University of Alabama Press, Tuscaloosa.
- Streicker, J.  
1997 Spatial Reconfigurations, Imagined Geographies, and Social Conflicts in Cartagena, Columbia. *Cultural Anthropology* 12(1):109-128.
- Strong, J. S.  
1983 *The Legend of King Asoka: A Study and Translation of the Asokavadana.* Motilal Banarsidass, Delhi.
- Struve, O.  
1952 Proposal for a Project of High-Precision Stellar Radial Velocity Work. *The Observatory* 72:199-200.
- Suchitta, P.  
1985 Early Iron Smelting Technology in Thailand and Its Implications. In *Research Conference on Early Southeast Asia*, pp. 25-40. Silpakorn University, Bangkok.
- Sulaksananont, A.  
1987 The Study of Muang Phra Rot, Amphoe Phanat Nikhom, Chonburi, from Material Culture and Stratigraphy (in Thai). M.A. thesis, Silpakorn University, Bangkok.



- Supajanya, T. and P. Vanasin  
1983 *The Inventory of Ancient Settlements in Thailand* (in Thai). Toyota Foundation.
- Supajanya, T. and P. Vanasin  
1986 The Inventory of Ancient Settlements in Thailand on Aerial Photographs (in Thai). *Journal of the National Research Council of Thailand* 18(2):21-38.
- Suvrathan, U.  
2013 Complexity on the Periphery: A study of regional organization at Banavasi, c. 1st – 18th century A.D. Ph.D. dissertation, Department of Anthropology, University of Michigan.
- Tambiah, S. J.  
1976 *World Conqueror and World Renouncer: A Study of Buddhism and Polity in Thailand against a Historical Background*. Cambridge University Press, Cambridge.
- Tampoe, M.  
1989 *Maritime trade between China and the West : an archaeological study of the ceramics from Siraf (Persian Gulf), 8th to 15th century A.D.* B. A. R. 555, Oxford.
- Theunisson, R., P. Grave and G. Bailey  
2000 Doubts on Diffusion: Challenging the Assumed Indian Origin of Iron Age Agate and Carnelian Beads and Southeast Asia. *World Archaeology* 32:84-105.
- Trautmann, T. R.  
1971 *Kautilya and the Arthashastra: A Statistical Investigation of the Authorship and Evolution of the Text*. E. J. Brill, Leiden.
- Umitsu, M., S. Tiypairach, N. Chaimanee and K. Kawase  
2002 Late Holocene Sea-Level Change and Evolution of the Central Plain, Thailand. In *Proceedings of the Symposium on Geology of Thailand*, pp. 201-206. Department of Mineral Resources, Bangkok.
- Vallibhotama, S.  
1984 The Relevance of Moated Settlements in the Formation of States in Thailand. In *Southeastern Asian Archaeology at the XV Pacific Science Congress*, edited by D. T. Bayard, pp. 123-128. Studies in Prehistoric Anthropology 16. Otago University, Dunedin.

1986 Political and Cultural Continuities at Dvaravati Sites. In *Southeast Asia in the 9th-14th Centuries*, edited by D. G. Marr and A. C. Milner, pp. 229-238. Australian National University and the Institute of Southeast Asian Studies, Singapore.

1991 Phetchaburi: a City of History. *Muang Boran* 17(4):17-42.

Vallibhotama, S.

1992 Early Urban Centres in the Chao Phraya Valley of Central Thailand English. In *Early Metallurgy, Trade and Urban Centres in Thailand and Southeast Asia*, edited by I. Glover, P. Suchitta and J. Villiers, pp. 123-129. White Lotus, Bangkok.

van Heekeren, H. R. and E. Knuth

1967 *Archaeological Excavations in Thailand. Vol. I, Sai Yok*. Monksgaard, Copenhagen.

Veerapan, M.

1979 The Excavation at Sab Champa. In *Early South East Asia*, edited by R. B. Smith and W. Watson, pp. 337-341. Oxford University Press, Oxford.

Wales, H. G. Q.

1946 Recent Malayan Excavations and Some Wider Implications. *Journal of the Royal Asiatic Society* (2):142-149.

1957 *Prehistory and Religion in South-east Asia*. Quaritch, London.

1969 *Dvaravati: The Earliest Kingdom of Siam (6th to 11th century A.D.)*. Quartich, London.

Wangsook, K.

2000 The Cultural Development in the Mun River Basin: A Case Study of the Archaeological site at Muang Sema Sung Noen District Nakhon Ratchasima Province (in Thai). M.A. thesis, Silpakorn University, Bangkok.

Watson, W.

1968 The Thai-British Archaeological Expedition. *Antiquity* 42:302-306.

Watson, W. and H. H. E. Loofs

1967 The Thai-British Archaeological Expedition: A Preliminary Report on the Work of the First Season, 1965-66. *Journal of the Siam Society* 55(2):237-262.

Weber, M.

1958 *The City*. Free Press, Glencoe.

- Weber, S., H. Lehman, T. Barela, S. Hawks and D. Harriman  
 2010 Rice or Millets: Early Farming Strategies in Prehistoric Central Thailand. *Archaeological and Anthropological Sciences* 2:79-88.
- Weeraprajak, K.  
 1986 *Inscriptions in Thailand, vol. 1* (in Thai). Fine Arts Department, Thailand.
- Welch, D. J.  
 1985 Adaptation to Environmental Unpredictability: Intensive Agriculture and Regional Exchange at Late Prehistoric Centers in the Phimai Region, Thailand. Ph.D. dissertation, University of Hawai'i-Manoa.  
 1989 Late prehistoric and early historic exchange patterns in the Phimai Region, Thailand. *Journal of Southeast Asian Studies* 20(01):11-26.
- Welch, D. J. and J. R. McNeill  
 1991 Settlement, Agriculture, and Population Changes in the Phimai Region, Thailand. *Bulletin of the Indo-Pacific Prehistory Association* 11:210-228.  
 2004 The Original Phimai Black Site: A New Look at Ban Suai, Phimai, Thailand. In *Southeast Asian Archaeology: Wilhelm G. Solheim II Festschrift*, edited by V. Paz, pp. 522-543. University of the Philippines Press, Manila.
- Wheatley, P.  
 1971 *The Pivot of the Four Quarters: A Preliminary Enquiry into the Origins and Character of the Ancient Chinese City*. Aldine Pub. Co., Chicago.  
 1983 *Nāgara and Commandery: Origins of the Southeast Asian Urban Traditions*. Department of Geography, The University of Chicago, Chicago.
- White, J. C.  
 1988 Early East Asian Metallurgy: The Southern Tradition. In *The Beginning of the Use of Metals and Alloys*, edited by R. Maddin, pp. 175-181. MIT Press, Cambridge.  
 1995a Incorporating Heterarchy into Theory on Socio-political Development: The Case from Southeast Asia. In *Heterarchy and the Analysis of Complex Societies*, edited by R. Ehrenreich, C. Crumley and J. Levy, pp. 101-123. American Anthropological Association, Washington D.C.  
 1995b Modeling the Development of Early Rice Agriculture: Ethnoecological Perspectives from Northeast Thailand. *Asian Perspectives* 34(1):37-68.  
 1997 A Brief Note on New Dates for the Ban Chiang Cultural Tradition. *Bulletin of the Indo-Pacific Prehistory Association* 16:103-106.

- White, J. C. and V. Piggot  
 1996 From Community Craft to Regional Specialization: Intensification of Copper Production in Prestate Thailand. In *Craft Specialization and Social Evolution: In Memory of V. Gordon Childe*, edited by B. Wailes, pp. 151-175. University Museum of Anthropology, University of Pennsylvania, Philadelphia.
- Wilaikeo, J.  
 1991a Archaeological Work at U-Taphao, Chainat Province (in Thai). *Silpakorn Journal* 34(2):1-20.  
 1991b *The Archaeology of Muang U-Taphao* (in Thai). Fine Arts Department, Bangkok.
- Wilen, R.  
 1992 Mortuary Traditions and Cultural Identity in the Khorat Plateau Piedmont, Northeast Thailand. In *Southeast Asian Archaeology, 1990*, edited by I. Glover, pp. 103-110. Center for South-East Asian Studies, University of Hull.
- Willey, G. R.  
 1945 Horizon Styles and Pottery Traditions in Peruvian Archaeology. *American Antiquity* 11(1):49-56.
- Williams-Hunt, P. D. R.  
 1950 Irregular Earthworks in Eastern Siam: An Air Survey. *Antiquity*:30-37.
- Wolters, O. W.  
 1968 Ayudhya and the Rearward Part of the World. *Journal of the Royal Asiatic Society* (3 & 4):166-178.  
 1982 *History, Culture, and Region in Southeast Asian Perspectives*. Studies on Southeast Asia. Institute of Southeast Asian Studies, Singapore.
- Woodward, H. W.  
 1993 The Thai Chêdî and the Problem of Stûpa interpretation. *History of Religions* XXXIII(1):71-91.  
 1997 *The Sacred Sculpture of Thailand*. River Books, Bangkok.  
 2005 *The Art and Architecture of Thailand, From Prehistoric Times through the Thirteenth Century*. Brill, Boston.
- Wright, A.  
 1907 *Twentieth Century Impressions of Ceylon: Its History, People, Commerce, Industries, and Resources*. Lloyds Greater Britain Publishing, London.

- Wright, H. T.  
 1977 Recent Research on the Origin of the State. *Annual Review of Anthropology* 6:379-397.
- 2005 The Polycentricity of the Archaic Civilizations. In *A Catalyst for Ideas: Anthropological Archaeology and the Legacy of Douglas Schwartz*, edited by V. L. Scarborough, pp. 149-167. School of American Research, Sante Fe.
- Wright, H. T. and G. A. Johnson  
 1975 Population, Exchange, and Early State Formation in Southwestern Iran. *American Anthropologist* 77(2):267-289.
- Yamamoto, T.  
 1979 East Asian Historical Sources for Dvāravatī Studies. In *Proceedings of the Seventh IAHA Conference*. vol. 2. Chulalongkorn University Press, Bangkok.
- Yao, A.  
 2008 Culture Contact and Social Change Along China's Ancient Southwestern Frontier, 900 B.C.-100 A.D. Ph.D. dissertation, Department of Anthropology, University of Michigan, Ann Arbor.
- Yoffee, N.  
 2005 *Myths of the Archaic State: Evolution of the Earliest Cities, States and Civilizations*. Cambridge University Press, Cambridge.
- 2009 Making Ancient Cities Plausible. *Reviews in Anthropology* 38:264-289.
- Yoffee, N. and N. Terrenato  
 forthcoming Introduction: A History of the Study of Early Cities. In *Early Cities and Comparative History*, edited by N. Yoffee. A New Cambridge World History, Vol. 3, M. Wiesner-Hanks, general editor. Cambridge University Press, Cambridge.
- Yupho, D.  
 1967 *Quartzite Buddha Images of the Dvaravati Period*. Department of Fine Arts, Bangkok.
- Zeder, M.  
 2003 Food and Provisioning in Urban Societies: A View from Northern Mesopotamia. In *The Social Construction of Ancient Cities*, edited by M. L. Smith, pp. 156-183. Smithsonian Institution, Washington, DC.