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The pots and potters of Assyria : technology and organization of production, ceramics sequence and vessel function at Late Bronze Age Tell Sabi Abyad, Syria

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APPENDIX C
DETAILED DESCRIPTIONS OF POTTERY KILNS²³⁰

All pottery kilns are two-chambered updraft kilns. An updraft kiln basically consists of a lower fire chamber in which the fuel is burnt. The upper chamber is the actual pottery chamber, in which the vessels are stacked to be fired. The floor of the pottery chamber has flue holes to let the hot gases pass from the fire chamber through the stack of vessels. The floor rests on arches.²³¹ Two different types of updraft kiln construction were used at Tell Sabi Abyad.

1. A large kiln with real arches supporting the pottery chamber floor. The side walls of the fire chamber are usually made of half bricks in normal masonry.
2. A smaller kiln with two bricks leaning on the side walls and touching each other in the middle, forming a pointed arch supporting the pottery floor. The side walls of the fire chamber can be made of half bricks in normal masonry. However, less well-constructed forms of this type have only upright bricks covering the fire chamber wall, use existing walls as a fire chamber wall, or have just a layer of plaster against the inside of the fire chamber pit.

Ethnographic studies show that updraft kilns like the ones at Sabi Abyad are generally used by specialized potters or a well developed ceramic industry. Simple updraft kilns are occasionally used in a household-industry type of production, but in general updraft kilns (and especially the large ones like the Sabi Abyad kiln K in square J7 or kiln Q in square N11) are mostly found in individual workshops, nucleated workshops and manufactories (Peacock 1982, Annis 1988). Updraft kilns require some skill and investment to build them, and sometimes specialized kiln builders work in areas with many pottery workshops (Peacock 1982: 42). Especially when potting is a regularly recurring event, potters seem to have invested in kiln building because of the advantages compared to open firing (P. Arnold 1991, Rice 1987: 162). Once a kiln is built it saves time each next time vessels are fired because the same kiln can be used several times. Although a kiln needs constant maintenance and repair, it has a reasonably long lifespan (Swan 1984: 33). Temperatures are generally somewhat higher than in open firings and easily reach 900-1000 °C, and the rise of the temperature and the kiln atmosphere can be controlled much easier. Moreover, a kiln saves fuel and the amount of firing losses tends to be smaller than in open firings (Rice 1987: 162, P. Arnold 1991: 109, Rye 1981: 98-100).

In this Appendix a detailed description of all ten updraft pottery kilns found at Tell Sabi Abyad is presented. A table listing the dating and the summary data on kiln sizes is included at the end of the Appendix (table C.1).

²³⁰ Not all stratigraphical and architectural documentation was already available in detail during the preparation of this appendix. Please await the final publication of stratigraphy and architecture for detailed information.

²³¹ Updraft pottery kilns have been found at many other sites in the pre-classical Near East, cf. e.g. Alizadeh 1985, Al-Maqdissi and Badawi 2002, Anderson 1987, 1989, Bounni 1974, Crawford 1981, Dämmer 1985, Kletter and Gorzalczy 2001, Machule et al. 1990: 30-31 and Abb. 16, Majidzadeh 1975, Nicholson 1989, Salonen 1964, Simpson 1991.

N11 – Kiln Q

Level:	6
Orientation:	N-S
Dug from elevation:	324.59
Upper elevation:	324.74-65
Fire chamber floor elev.:	322.55
Upper construction:	2.70 m x 2.10 m (preserved)
Fire chamber top:	2.25 m x 1.26 m
Fire chamber inside:	1.76 m x 0.78 m
Fire chamber near floor:	1.52 m x 0.54 m
Depth of fire chamber:	2.25 m (total)
Brick size:	36 x 37 x 12 cm, 18 x 37 x 12 cm
Samples:	none
Figures:	C.1-7, V.2.

Description:

This was a very large updraft kiln preserved up to the pottery chamber floor. It was free-standing. It had a rectangular fire chamber with a semi-circular fueling entrance in the south. The fire-chamber pit tapered towards the bottom, creating sloping sides (fig. C.2). The sides of the fire-chamber pit on the north side and at the semi-circular fueling entrance in the south were covered with whole bricks standing on their sides. There were four courses of bricks on top of each other. The longer, eastern and western sides of the pit were covered in 10 courses of half bricks in normal masonry, although the section shows that bricks on their sides were occasionally used here as well. Sometimes sherds and plaster were used between bricks to fill up holes and create the slanting angle needed to cover the tapering walls. The lower 39 cm of the walls of the firing-chamber pit was not covered in bricks but only plastered with a thick mud plaster. Three real arches, made of whole bricks set obliquely against the fire-chamber wall, covered the fire chamber and supported the pottery-chamber floor (fig. C.3). Only the first part of the arches was preserved, while the pottery-chamber floor was only preserved at the sides of the kiln (figs. C.4 and C.5). The arches were most probably pointed as in the case of kiln K in J7 (see below). The space between the arches was filled with plaster and debris, leaving four flue holes along the sides of the floor. Probably the pottery-chamber floor originally had 16 flue holes. The whole inside of the fire chamber, including the brickwork, arches and inside of flue holes, was covered in at least 5 layers of thick mud plaster, resulting in a plaster layer now 8 cm thick (figs. C.6 and C.7). This repeated plastering points to at least four occasions of repair work carried out on the kiln. The plaster layers alternated in colour between bright green and dark green. All brickwork and plaster were heavily fired and sintered due to the high temperatures in the fire chamber. The upper pottery-chamber construction was most probably built in normal masonry using whole mud bricks surrounding the fire chamber pit.

Description of the fire-chamber fill:

No sections have been made through the kiln fill; one section was made east-west through the fire chamber wall to study the construction (fig. C.2).

The top of the kiln fill consisted of brown-green medium-hard soil, with no ash or charcoal parts. Probably this deposit mainly consisted of rubble from the pottery floor and upper structure. Next, up to an elevation of 324.00, the soil was dark brown and soft, mixed with ashes and small red burnt debris fragments, as well as animal bones, pieces of green sintered plaster, sherds and unfired ceramics. Large pieces of broken mud brick, rubble from the upper construction, were still present. This deposit seems to consist of garbage, perhaps used to fill up the oven to level the surface for later construction. Up to an elevation of 322.85, the soil became looser, dark in colour, mixed with more ashes. Sherds and plaster fragments were still present, but no more mud-brick debris. The lowest fill, around 20 cm (up to 322.65), consisted of a soft layer of almost pure white and grey/black ash, with some

charcoal fragments. The last 10 cm of fill were similar, but mixed with the brown earth of the floor surface. The floor of the kiln was reached at 322.55.

Most finds from the kiln fill came from the upper part of the kiln fill, probably a layer of garbage. Finds included unbaked pottery, a bowl fragment, a pestle, a pierced disc and a jar stopper. From the bottom of the kiln came a fragment of a bowl. Sherds were found in the whole fill, about 100 diagnostics, in a large variety of shapes and sizes.

N12 – kiln L

Level:	6
Orientation:	N-S
Dug from elevation:	324.46? Or from floor F at 324.61?
Upper elevation:	324.65
Fire chamber floor elev.:	ca. 323.36
Upper construction:	not preserved
Fire chamber top:	-
Fire chamber inside:	1.74 x 0.90
Fire chamber near floor:	-
Depth of fire chamber:	at least 1.20 m
Brick size:	36 x 37 x 12 cm, 18 x 37 x 12 cm
Samples:	none
Figures:	C.8-10 and V.2, V.5.
Remarks:	2 Middle Assyrian burials covered with large sherds were placed inside the kiln after the kiln had gone out of use.

Description:

Kiln L was a large updraft kiln. The arches supporting the pottery chamber floor were partly preserved but the floor itself was not. It was dug into the corner of a courtyard. It had a rectangular fire-chamber pit, probably with a fueling hole in the south. The construction of the fueling hole was not very well preserved. The fire-chamber walls tapered slightly towards the bottom, but not much. All sides were covered in whole mud bricks standing on their sides, three courses high. The mud bricks at the south side were placed slanting towards the south, allowing for the fueling hole opening, but seem to have been damaged here by a pit (perhaps created when the burials were put in). Two arches made of whole mud bricks covered the fire chamber and supported the pottery-chamber floor. The arch construction was not preserved very well and its shape is unclear. The pottery-chamber floor probably originally had nine flue holes. The bricks on the inside of the fire chamber do not seem to have been plastered. The whole preserved structure was heavily fired and greenish-grey due to the high temperatures in the firing chamber. Nothing was preserved of the upper structure, although it might be suggested that wall J was part of it.

Kiln L was possibly dug from elevation 324.46, the Neolithic tell surface. According to the daynotes floor F, at an elevation of 324.61 in this room, is 10-20 cm above the surface of the Neolithic site, recognized at 324.48-30. Floor F probably did not cover the remains of L, because remains of L were already visible when the floor was cleaned. It is also possible that L was dug from slightly higher up, because the kiln seems to have been made only after the door in the northern wall had been blocked.

Description of the fire-chamber fill:

No sections have been made through the kiln fill. The deposition inside the fire chamber was described as a sandy soil with some small bones, sherds, unbaked bricks, and unfired pottery. This is the soil covering the burial, and therefore it is of a secondary and mixed nature. From the excavation of the rest of the deposit in 2005 no documentation is available as yet.

N13 – kiln H

Level:	5
Orientation:	N-S
Dug from elevation:	not preserved
Upper elevation:	higher than 324.71 (rubble of the kiln already seen at approximately 325.33?).
Fire chamber floor elev.:	323.89
Upper construction:	> 2.65 x 2.54, not preserved up to pottery floor (estimate from field plans).
Fire chamber top:	-
Fire chamber inside:	> 1.85 x 1.10 (estimate from field plans)
Fire chamber near floor:	-
Depth of fire chamber:	> 0.80 m
Brick size:	-
Samples:	none
Figures:	C.11 and V.14
Remarks:	part of the kiln is still preserved in southern section baulk of square N13.

Description:

Kiln H was a large updraft kiln, but it was not very well preserved. It was located just under the topsoil; only the lower part of the fire chamber was preserved. The inside of the fire-chamber walls was covered in a thick mud plaster. The shape of the plaster suggests that the flue holes started not much higher, but if that is true the fire chamber would have been very undeep compared to its width. Behind the plaster, burnt brickwork in normal masonry was visible, but it is unclear whether this belonged to the kiln construction or not. No proper drawings and documentation are available as yet.

It is unclear from what level kiln H was constructed. According to the daynotes, the rubble from the upper kiln construction reached up to at least 324.71 and probably some 20 cm higher than that. The depositions surrounding the kiln all seem to belong to the levels into which the kiln was dug. Also the preserved depth of the fire chamber (0.80 m) seems to be very low for a kiln this size: most probably the construction was originally considerably deeper than this (cf. also the sizes of other, similar kilns, table C.1). Possibly the kiln was dug from a level no longer preserved in N13, perhaps level 5.

Description of the fire-chamber fill:

No sections have been made through the kiln fill. Up to an elevation of around 324.25, the fill of the fire chamber consisted of sandy soil with pieces of baked bricks, many sherds and pottery objects. Down to 323.95, soil was more ashy, black and grey and soft, and contained fewer sherds. Down to 323.89, where the earth floor was reached, the fill was an ashy layer.

L8 – Kiln AR

Level:	5B or earlier
Orientation:	N-S
Dug from elevation:	not preserved, higher than 326.13
Upper elevation:	326.10
Fire chamber floor elev.:	324.53
Upper construction:	2.25 x 1.26 m
Fire chamber top:	-
Fire chamber inside:	1.76 x 0.78 m
Fire chamber near floor:	-
Depth of fire chamber:	1.60 m
Brick size:	38 x 39 x 14 cm
Samples:	SN03-182, charcoal and burnt grains.

Figures: V.22
 Remarks: backfilled, the kiln still has to be drawn.

Description:

Kiln AR was a large updraft kiln. The fire chamber was preserved up to the start of the air flues and the beginning of the arches that supported the pottery-chamber floor, but the arches themselves were not preserved. It was dug into the corner of a room. It had a rectangular fire chamber with a semi-circular fueling hole in the south. The walls of the fire chamber tapered towards the bottom, creating sloping walls. Against all sides of the fire chamber pit whole mud bricks had been placed on their sides, three courses high on the long sides and two courses high on the short side. The lower 39 cm of the fire chamber pit were not covered in mud bricks but just plastered. The bottom of the fire chamber is an earthen floor. Along the long sides, the beginning of three flue holes on each side were visible. The pottery-chamber floor originally probably had nine flue holes. Two arches were probably made of whole mud bricks in a real arch construction, but they are only very fragmentarily preserved. The whole inside of the fire chamber, including the flue holes, was plastered with at least four layers of mud plaster fired to alternating blue and green colours. The total layer of plaster is now 4 to 8 cm thick. All plaster and bricks were heavily burnt, the bricks were grey and reddish in colour.

Description of the fire-chamber fill:

No sections have been made through the kiln fill. On the kiln floor, up to elevation 325.15, a layer of almost pure white and dark-grey ash was found. A bronze ring, a baked clay wedge (kiln furniture? fig. V.7, O03-198) and a clay sealing were found in this ash. On top of this fill ashy soil was found, on top of which soft soil including burnt mud-brick pieces and debris of the collapsed kiln construction was deposited. This fill contained stones, burnt bone, burnt and sintered plaster pieces and mud-brick pieces and some pottery slag.

M11/M12 – Kiln AC/AI

Level:	5B
Orientation:	N-S
Dug from elevation:	326.12-05 (floor AN)
Upper elevation:	top of arch in southern section M11 at approximately 326.35, bin W in M12 upper fill 326.24, lowest level 326.12
Fire chamber floor elev.:	325.07
Upper construction:	not preserved, perhaps bin W? (>1.10 x 1.10 m)
Fire chamber top:	-
Fire chamber inside:	1.50 x 0.90 m
Fire chamber near floor:	-
Depth of fire chamber:	1.28 m
Brick size:	?
Samples:	none
Figures:	V.13
Remarks:	Bin W, the northern part of the fire chamber and the southern part were found separately on either side of the section baulk, the middle part in the section baulk was excavated later. The kiln is heavily damaged by later pits, and its position in the section baulk initially hampered proper identification and excavation.

Description:

Kiln AC/AI was a smaller updraft kiln, badly preserved and badly damaged by later pits. It was free-standing. Most probably bin W in square M12 was part of the upper structure, and perhaps the east wall of bin X was, too. The fire chamber was an irregular oblong oval pit

with a rounded part or a semicircular fueling hole in the north. The sides of the pit tapered towards the fire-chamber floor. It is not clear whether the sides of the fire chamber were covered in mud bricks like those of the other kilns. Some mud bricks were visible in the section but they were not very clear. The inside of the fire-chamber pit was plastered. Over the northern and southern part of the fire chamber, two whole bricks were put leaning on the fire-chamber edge and meeting in the middle, forming two simple arches over the fire chamber and supporting the pottery-chamber floor. The whole inside of the fire chamber and the arch were burnt to a reddish colour. Part of the floor was still preserved in the middle part of the kiln, and perhaps in the lower level of bin W. If bin W is part of the structure, it extended a bit more to the south than the fire-chamber pit itself (cf. kiln CJ/V in square K8, see below).

Description of the fire- chamber fill:

Soft brown/grey fill with ash pockets and a lot of unbaked-clay vessel fragments, some sherds and small bone fragments. The fill of W was soft brown soil, dark grey-brown ashy material with charcoal, and patches of burnt loam. The fill of W also contained baked bricks.

M11 – kiln T/U

Level:	5B
Orientation:	E-W
Dug from elevation:	326.15-04 (floor AN)
Upper elevation:	326.66
Fire chamber floor elev.:	325.80
Upper construction:	1.53 x 0.89
Fire chamber top:	-
Fire chamber inside:	1.30 x 0.55
Fire chamber near floor:	-
Depth of fire chamber:	approximately 0.60 m
Brick size:	?
Samples:	none
Figures:	C.12 and V.13
Remarks:	Initially not recognized as a double-chambered updraft kiln. Not very well preserved.

Description:

Kiln T/U was a smaller updraft kiln, not very well preserved. It was built in the corner of courtyard 2. It had a rectangular and undep fire chamber with a rounded western end, without a clear fueling hole. A rectangular wall made of half mud bricks surrounded the fire-chamber edge on the western, southern and part of the northern side, and was probably part of the upper structure. Wall P formed the side of the kiln on the eastern side. The inside of the fire chamber was covered in thick mud plaster. Part of the plaster of an arch over the fire chamber was still present. The whole inside was heavily fired.

Description of the fire-chamber fill:

On the fire-chamber floor, black and grey ashy soil with some burnt pottery was found. Higher up in the fill, the soil was browner, and still contained burnt pottery as well as some big stones and large sherds. To the south of the kiln structure there was a grey ashy layer perhaps associated with this kiln.

H8 – kiln H/AE

Level:	between 5B and 4D
Orientation:	E-W
Dug from elevation:	unknown, higher than 326.95.
Upper elevation:	326.95
Fire chamber floor elev.:	325.85
Upper construction:	not preserved
Fire chamber top:	-
Fire chamber inside:	1.44 x 0.68 m
Fire chamber near floor:	-
Depth of fire chamber:	1.10 m
Brick size:	40 x 40 x 10 cm
Samples:	none
Figures:	C.13 – 17 and V.20, 21.
Remarks:	the surface from which kiln H/AE was dug and used was cut away by the levelling activities for making floor F at elevation 326.95-83.

Description:

Kiln H/AE was a smaller updraft kiln. Only the lower part of the fire chamber was preserved. The whole structure cut floor J and was cut and levelled by floor F. It was built in the corner of room 14. It had a rectangular fire chamber with a rounded western side. The fueling hole was probably located on this side. The fire chamber tapered slightly towards the earthen floor. The southern side of the fire-chamber pit had been covered with half mud bricks in normal masonry; six courses were preserved. The western and northern part had been covered with whole mud bricks on their sides; two courses were preserved. In the east, wall E/AB served as the fire-chamber wall. The inside walls of the fire chamber were plastered with mud plaster. Both bricks and plaster were heavily fired to a bright green colour, just as the part of wall E/AB that served as a kiln wall. Perhaps wall AB was repaired in this spot with the building of floor F.

Description of the fire-chamber fill:

The upper part was filled with mud-brick debris. Under the debris, very soft red-brown ashy soil with red burnt and unburnt loam pieces was found. Three kiln wasters and a lot of unbaked vessel fragments were found in this fill. A lot of clay lumps and burnt sherds were found as well. Under this was a layer containing baked pottery and red or green loam pieces, covering red brown ashy soil and grey ashes.

H8 – Kiln I

Level:	between 5B and 4D
Orientation:	N-S
Dug from elevation:	unknown, higher than 326.95
Upper elevation:	at least 326.80, plaster and bricks of wall C are burnt up to elevation 327.46?
Fire chamber floor elev.:	325.88
Upper construction:	not preserved
Fire chamber top:	-
Fire chamber inside:	1.12 x 0.65
Fire chamber near floor:	-
Depth of fire chamber:	0.90 – 1.58
Brick size:	?
Samples:	none
Figures:	V.20

Remarks: the surface from which kiln I was dug and used was cut away by the levelling activities for making floor F at elevation 326.95-83.
Middle Assyrian burial B1 cut kiln I.

Description:

Kiln I was a smaller updraft kiln. Only the lower part of the fire chamber was preserved. It was built in a corner of the walls in room 14. The fire chamber tapered slightly towards the floor on the eastern side; on the western side it made use of wall C. The eastern side of the fire-chamber pit had been covered by whole mud bricks on their sides, possibly two courses were preserved. Sherds were stuck inbetween for stability. The lower part of the pit was not covered in bricks but plastered with a thick mud plaster, and so was the southern part. The northern and western side used the bricks of wall B and C as a fire chamber wall. The whole inside of the fire chamber was heavily burnt, changing the bricks of the walls and the kiln to a bright green colour. In the southern part of the fill a Middle Assyrian child burial was found. The burial cut the kiln wall.

Description of the fire chamber fill:

Two levels were visible in the fill: the lower part was filled with blue-grey ashes, on top of which soft blue-grey, grey-brown oven fill was found, containing ash, loam, burnt loam, and mud-brick fragments.

K8 – Kiln CJ/V

Level:	between 5B and 4B
Orientation:	N-S
Dug from elevation:	326.80
Upper elevation:	327.62
Fire chamber floor elev.:	326.16
Upper construction:	ca. 1.60 x 1.00 m
Fire chamber top:	-
Fire chamber inside:	approximately 1.40 x 0.68 m
Fire chamber near floor:	-
Depth of fire chamber:	1.06
Brick size:	35 x 15 x 10 cm (half bricks)
Samples:	SN99-5, ash with burnt grains. Not analysed yet.
Figures:	C.21 – 25, and V.22.

Description:

Kiln CJ/V was a smaller updraft kiln, preserved up to the pottery chamber floor and lower part of upper structure. It was built in the corner of the walls behind the former city gate. The kiln was dug into the fill and debris of an unused room; at elevation 326.80 there was no real floor. It was built after the city gate had gone out of use, but before the gate and the recesses were blocked up. The kiln rested against wall M/AO but did not make use of its bricks. The kiln cut floor CM (level 5B) and was covered by a surface dating to level 4B. A rectangular fire-chamber pit was dug into the soil, with sides slightly tapering towards the concave earthen floor. The sides of the fire chamber were covered with whole mud bricks on their sides, two courses high. Then, around the fire-chamber pit, the rectangular walls of the kiln were built with half mud bricks in normal masonry; six courses had been preserved. The upper structure of the kiln is longer than the fire chamber, extending about 35 cm more towards the south. On the northern side of the upper structure an arched fueling hole was left open. In the middle of the fire chamber, two mud bricks had been set on their sides on top of the side walls and touching a half brick in the middle, thus creating a simple arch. The spaces next to the arch were filled with brick parts, plaster and sherds creating the pottery-chamber floor, in which six flue holes were still preserved. The original floor probably had at least 12

flue holes. The whole inside of the fire chamber was plastered and fired to a greenish colour. The pottery-chamber floor and the preserved wall of the pottery chamber were plastered on the inside and outside, but only the inside was fired to a red and black colour. The walls seemed to be more burnt in the north than in the south, perhaps due to the location of the fueling hole. Perhaps the fueling hole was blocked with bricks during the firing of the kiln.

Description of the fire-chamber fill:

On the floor of the fire chamber, an approximately 4 cm thick layer of soft, pure fine black to grey ash was deposited, including charred grains. The botanical sample was taken from this layer. On top of it, there was loose brown and grey sandy and ashy soil. The fill of the pottery chamber contained brown soil with plaster fragments and charcoal.

J7 – Kiln K

Level:	4C
Orientation:	N-S
Dug from elevation:	327.10 (surface S)
Upper elevation:	327.35
Fire chamber floor elev.:	325.55
Upper construction:	3.00 x 2.34 m
Fire chamber top:	
Fire chamber inside:	2.16 x 0.64 m
Fire chamber near floor:	
Depth of fire chamber:	1.70
Brick size:	39 x 39 x 10; 20 x 39 x 10 (half bricks)
Figures:	C.26 – 31, and V.23, 24.
Samples:	SN98-10, slags in ashy layer; SN98-351, sintered plaster of fire chamber wall. Not analysed yet.
Remarks:	Published earlier in Akkermans and Duistermaat 2001.

Description:

Kiln K was a large updraft kiln, preserved up to and including the pottery-chamber floor. It was free-standing. It had a rectangular fire chamber with a semi-circular fueling hole at the south and at the north. The fire-chamber pit was more or less straight down to the slightly concave earthen floor. The sides of the fire chamber were covered in half bricks in normal masonry, seven courses high. The wall of the northern side was bonded with the walls on the long sides. The southern side of the fire-chamber pit was a bit curved, and covered in whole bricks standing on their sides, 2.5 courses high. At the top of the side walls, the fire-chamber pit widened a bit to give space to the whole bricks lying on the edge of the fire chamber pit and forming the start of the arches. Four real arches were built of whole bricks leaning inwards and touching at the top in a V-shape. A space of about 20 cm was left open between each arch. Around the fire-chamber pit a square wall was built to form the upper structure. The space between the wall and the arches, and between the arches themselves, was filled up with pieces of mud brick, plaster and sherds, leaving nine flue holes open in the pottery-chamber floor. The inside of the fire chamber, including the arches and the inside of the flue holes, were covered in thick mud plaster. From the inside, the bricks in the fire chamber and the arches have been fired to a bright green colour, fading to red/orange and then to unburnt bricks further away from the fire chamber.

Description of fire-chamber fill:

The first 45 cm or so on top of the unburnt fire-chamber floor consisted of alternating layers of blackish, yellowish and pink, very soft powdery ashes. Above that, the fire-chamber fill consisted of soft dark-grey and lighter-grey ashy soil with charcoal and some burnt mud-brick fragments. On top of that, the fill was more mixed containing dark-brown mud-brick debris,

Appendix C: Pottery Kilns

soft grey ashy soil, pieces of grey burnt mud bricks, sherds and bones. In the south part, in the ashy layers, some large jar bases and large sherds, animal bones and stones were found.

Level	Kiln	Outer structure (max. dimensions) L x W	Pottery- chamber floor (inside) L x W	Surface of pottery chamber (inside)	Fire chamber L x W	Depth of fire chamber	Volume of fire chamber
4C	J7 - K	3.00 x 2.34	(1.60 x 1.60)	(2.56 m ²)	2.16 x 0.64	1.70	2.35 m ³
5B - 4B?	K8 - CJ/V	(1.60) x 1.00	(1.46) x 0.60	0.88 m ²	(1.40) x 0.68	1.06	(1.00 m ³)
5B - 4D	H8 - H/AE	(1.84) x (1.10)	-	-	1.44 x 0.68	> 1.10	> 1.07 m ³
5B - 4D	H8 - I	(1.40) x (0.80)	-	-	1.12 x 0.65	> 0.90	> 0.65 m ³
5B	M11 - T/U	1.53 x 0.89	(1.25) x (0.70)	(0.88 m ²)	1.30 x 0.55	0.60	0.43 m ³ ?
5B	M11/M12 - AC/AI	> 1.10 x 1.10 (W)	(?) x (0.75) (W)	-	1.50 x 0.90	1.28	1.73 m ³
5B or earlier?	L8 - AR	2.25 x 1.26	(1.90) x (0.90)	(1.71 m ²)	1.76 x 0.78	> 1.60	(> 2.20 m ³)
5	N13 - H	> 2.65 x 2.54	(>2.13) x (1.68)	(> 3.58 m ²)	> 1.85 x 1.10	> 0.80	> 1.62 m ³
6	N12 - L	Not preserved	Not preserved	-	1.74 x 0.90	1.20	1.88 m ³
6	N11 - Q	2.70 x (2.45)	(2.27) x (1.73)	(3.92 m ²)	1.76 x 0.78	2.25	3.08 m ³

Table C.1: Sizes of updraft kilns at Sabi Abyad. Numbers between brackets are estimates.