

Assessment of pottery and ceramic building material from Greenhead Street, Burslem (GSB03)

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Excavations by Foundations Archaeology at Greenhead Street, Burslem, in 2003 (site code GSB03) produced a large assemblage of mid 18th-century stoneware waste and a small quantity of earlier and later material. The stoneware waste dates to a crucial period in the development of the Staffordshire potteries, prior to the major factories of Whieldon and Wedgwood, and helps to put the achievements of those potters into context.

The finds come from two areas: in the first a kiln base of late 19th or, probably, 20th-century date was excavated, together with underlying layers (Table 1). In the second, finds came from the filling of a large quarry pit, possibly dug for clay (lower layer: context 513, upper layer context 508) and from a sealing layer (context 507). The material from contexts 513 and 508 is almost identical in character and includes a few cross-joins. There are a few sherds of early 18th-century date but the majority of the sherds, over 1000, are of white salt-glazed stoneware of which about 15% were decorated in scratch-blue style, in which cobalt paint was inserted into impressions in the pot surface. Vessels decorated in this manner are conventionally dated (following Noel-Hume) to the mid 18th century (c.1740-65) and later but the character of the assemblage here suggests that this group belongs to the very early years of this production, perhaps the late 1740s. The early date and distinctive style of the material and the large proportion of scratch-blue decorated vessels makes it potentially a very important group for the study of the Staffordshire pottery industry.

Table 1

Context	Description	Date and character of finds
423	Brick floor of kiln	Mixed collection of 18 th and 19 th century pottery and production waste. Latest datable find is a moulded whiteware wall tile.
424	Firebox of kiln	A moulded roof tile, probably of 20 th -century date.
429	Layer below kiln	Late 19 th /20 th -century wall tiles and a fragment of kiln furniture incorporating a fragment of similar wall tile.
433	Layer below 429	A saggar and fragments of early to mid 18 th -century pottery, none definitely waste.
434	Layer below 433	Very late 17 th to early 18 th -century pottery and roof tile. No evidence for pottery production.

Description

The finds were identified and recorded in an Access database by sherd count and weight. For each group of sherds from the same context, ware and form an estimate of the number of vessels present was also made. However, this is likely to be an over-estimate because of the impossibility of assigning small body sherds to individual vessels. A better, but more time-consuming, method of quantification would be by Estimated Vessel Equivalents (EVEs).

Ceramic building material

Roof tile

Two fragments of flat roof tile were found. One, from context 434, is a thick tile made in the traditional manner, in a sanded former with excess clay scraped off. The fabric is a poorly mixture of red and yellow-firing Coal Measure clays. The other, from context 424, is made in a sandy dark red fabric in a press mould. Such technology was introduced in the second half of the 19th century but this particular example is probably 20th-century in date. It is likely that a specialist in recent architectural ceramics might be able to provide a closer date.

Wall tiles

Seven fragments of whiteware wall tiles were recovered. Six came from context 429 and one from context 423. In addition, a square fragment of an identical wall tile was incorporated in a piece of kiln furniture from context 429.

The tiles were press-moulded and have a series of raised strips on the base. These were produced by the machine used for moulding the tiles and often incorporate maker's marks. In this case, however, the majority of the surface is covered with a grey mortar which obscures the surfaces. The upper surface of the tiles was covered in a thick glossy glaze, except in three cases where the tiles were unglazed. The glaze is of three colours: an oxblood red, a copper green and a lighter green. Only one tile had a measurable dimension: 51mm.

Kiln furniture

Two fragments of kiln furniture were recovered, from contexts 423 and 429. Both were made from a poorly mixed Coal Measures white-firing clay and are thick slabs with semi-circular cutouts in the sides. In one case the upper surface of the slab is covered with a pool of light green glaze, to which a square of re-used wall tile is stuck, at right angles to the slab. In the other case the upper surface has traces of several, overlapping whiteware trivets, indicating repeated use. The surface of this slab is covered with a brown glaze.

It is likely that these slabs are removable shelves from a firing chamber, perhaps used to produce wall tiles. Like the wall tiles, these fragments are partly covered with a greyish mortar, indicating reuse.

Clay tobacco pipe

A single fragment of clay tobacco pipe stem was recovered from context 508. The bore diameter is consistent with a late 17th to mid 18th-century date.

Pottery

Late 17th to late 18th-century wares

Staffordshire wares of very late 17th to late 18th century date were recovered from contexts 423, 433, 434, 507 and 508 (Table 00). There is no evidence that any of these sherds are production waste. The earliest types found were mottled ware made in a light-firing Coal Measures clay (STMO). This ware was apparently first produced in the late 17th century but is mainly found in early 18th century and later contexts. Four sherds were found in total, of which three were definitely tankards, the most common mottled-ware form in the early to mid 18th century. Two sherds of Slip-decorated hollow wares made in a light-firing Coal Measures clay were found (STSL). Both come from posset pots. The earliest examples of this type include vessels with dates in the 1680s and 1690s applied as jewellery around the rim but the type continued to be popular into the mid 18th century. A vessel made from a red-firing clay (STRE) with a black glaze from context 433 has a cylindrical body of similar size to that of the Staffordshire tankards but a narrower base, similar to that found on the slipware posset pots. It is an unusual type and probably of early 18th-century date.

A single press-moulded plate sherd was found (STCO). This example had trailing of light coloured and light brown slip over a dark brown slip background. This type of decoration is typical of mid to late 18th century examples, replacing the two-colour marbled and combed slip-decorated vessels of the later 17th and early 18th century. The vessel had clearly been used and shows numerous knife scratches in the glaze. It came from the sealing layer over the waster pit, context 507, and is the latest datable type present in the context.

Lastly, two sherds of unglazed refined redware (REFR) were found in context 433. One is part of a teapot and the other a tea pot lid. The lid has a band of white slip around the edge of the lid. The teapot is represented by a round-sectioned spout and is coated inside and out with what appears to be unfired white slip (the thickness is variable but in places in excess of 2,0mm, so probably not immature glaze). It is possible that the vessel was reused on a production site although one would not have been able to pour slip from a teapot with the required precision to use in decoration. Unglazed vessels such as these were first produced in Staffordshire c. 1720. Production of similar unglazed red stoneware/hard fired earthenware teapots continued into the 19th century however. Nevertheless, the associated finds are all consistent with an early 18th-century date.

Sherds of slipped white salt-glazed tankards, made from a local Coal Measures clay with a refined slip, probably dating to the early 18th century, c.1710-1730, were found in contexts 507 and 508. Finally, sherds of white salt-glazed stoneware vessels (a chamber pot and a jug) were found in contexts 423 and 507 respectively. These are mid 18th-century types.

Table 2

cname	Form	423	433	434	507	508	Grand Total	
REFR	TPOT			1			1	
	TPOTLID			1			1	
REFR Total				2			2	
STCO	DISH					1	1	
STCO Total						1	1	
STCOAR	BOWL				2		4	
	SAGGAR		1	1			2	
STCOAR Total			1	1	2		6	
STMO	TANK			1	1		3	
	-					1	1	
STMO Total				1	1	1	4	
STRE	TANK			1			1	
STRE Total				1			1	
STSL	POSS			1	1		2	
STSL Total				1	1		2	
SWSG	TANK					1	1	
	CHP		1				1	
	JUG					1	1	
SWSG Total			1			2	3	
Grand Total			2	6	4	4	3	19

Examples of saggars made of Coal Measures clays, were present in contexts 423 and 433. The latter fragment has a high iron content and was clearly intended to be used with earthenwares rather than stonewares. It is a complete profile and probably considerably shorter than those found in the salt-glazed waster assemblage. Neither example has any glaze or other traces of use.

Mid 18th-century wares from waster pit (508/513)

Two groups of pottery from pit 508/513 are treated together here since there is no evidence for any difference in the range of material found in the two assemblages and there is some evidence for parts of the same vessel being present in both deposits. In most cases the sherds themselves show little sign of being waste although examples with slight overfiring and warping are present. The quantity of material, and the association with kiln furniture, is, however, clear evidence that this is production waste. A case can also be made for a full attempt to reconstruct vessel profiles, merging the material from the two contexts. Ideally, all the pottery would be marked beforehand so that it would still be possible to re-assemble the two groups.

All of the pottery in this pit was produced on the wheel. There is no evidence for the use of moulds on the stoneware at all. After throwing, the pieces were then lathe-turned to produce footings. Sometimes the rim was also treated in this way. A distinction is made here between simple turning, where a short cylindrical footing was produced, and complex, where curvilinear profiles were produced. There is some correlation between the type of form being produced and the type of profile given to the rim and base but the classification used here is based on the overall profile, and size, of the vessels.

Refined redware (REFR)

Two refined redware vessels are present, both represented by more than one sherd. They have a clear, yellowish glaze over a brown body and are typical of early to mid 18th-century refined redwares found in Staffordshire. One vessel is a globular teapot with a single applied pad on the girth (DN102). The pad is moulded in an indistinct leaf pattern, similar to those found at Shelton (Mountford 1975, Fig 3 No. 11; Fig 5 No. 27). The other is a conical coffee pot with a simple turned base (DN101). This vessel had a reeded handle. Similar vessels were present in a group of refined redware wasters found at Shelton (1975, Fig 4 Nos 18 and 19).

These vessels are lead glazed earthenwares and could not have been fired in the same firings as the stoneware. Nor is there any definite evidence for their being production waste. Such vessels were probably destined for a moderately well-off market, however, and it is unlikely that they would have been present in this group unless they were produced in the same manufactory.

Refined Blackware

A single vessel is made from a similar clay to the refined redware but was deliberately fired at a higher temperature and had a black glaze inside and out. The vessel is a large globular teapot (DN100) with a complex footring base. There is evidence for a spout but no indication as to its precise shape. Such vessels apparently were first produced in Staffordshire in the late 1740s and this piece therefore provides a *terminus post quem* for the deposition of the group.

White salt-glazed stoneware (SWSG)

One thousand sherds of white salt-glazed stoneware were recovered from contexts 508 and 513. Of these, a large quantity consisted of small chips of undiagnostic body sherds (407 in total). For the more unusual forms an attempt to identify individual vessels was made but this could not include a systematic cross-fitting exercise because the sherds were unmarked and, in any case, such a study is very labour-intensive.

The material was quantified by sherd count (Table 3), a maximum vessel count and weight. None of these methods is satisfactory and the assemblage really requires quantification by Estimated Vessel Equivalent, in which the proportion of the rim present is measured, together with the diameter (see *Further Work*, below). Nevertheless, this preliminary quantification at least gives some indication of the range of types being produced.

Twenty-two different named forms were present but in many cases there is considerable in the shape and size of vessels within each group.

Table 3

Form	Plain		Plain total	Scratch Blue		Scratch Blue total	Grand Total
	508	513		508	513		
Context	508	513		508	513		
?	4		4				4
BOWL	70	19	89	10	2	12	101
BOWL/CUP	1		1				1
BOWL/JAR	6		6		2	2	8
CHP	1	2	3				3
COFFEE CUP	25	2	27				27
CREAM JUG	3		3				3
CUP	15	16	31	69	12	81	112
DISH	67	6	73	1	1	2	75

DISH/CUP	21		21				21
EGGCUP				1		1	1
KILNF	25	3	28				28
LARGE TANKARD	6		6				6
MEDIUM CUP	43		43				43
MEDIUM TANKARD	16		16				16
MILK JUG	8	1	9				9
MINI CUP	1		1				1
PLATE	1		1				1
SMALL CUP	20		20				20
SMALL TANKARD	3	4	7		2	2	9
STRAINER	2		2				2
TANK	35	5	40	2	1	3	43
TPOT	40	7	47	2	1	3	50
TPOT?	1		1				1
TPOT?/CUP		1	1				1
TPOTLID	2	1	3	2	2	4	7
UNSORTED	313	94	407				407
Grand Total	729	161	890	87	23	110	1000

Bowls

Several different shapes of bowl were produced. Most were of small/medium size and a high proportion were decorated with scratch blue or have complex footrings and rims (Table 4).

Three main bowl shapes were produced: the most common has a rounded base but straight walls (“straight-sided”), which might be expanded into a flaring rim either produced by hand (“flaring”) or template (“flaring moulded”). Other forms include a conical form, similar but deeper to the conical-bodied dishes, probably designed for use as pie dishes (DN055). Hemispherical forms are uncommon and the examples of this type may be large cups (DN032). A single example with a slightly bulbous body (i.e. slightly constricted above the girth) was found (DN014). The bowls almost all have moulded footing bases (the one exception is the possible large cup, DN032). Decoration consisted of combed scratch blue plant motifs, termed here “palm trees”, freehand scratch blue decoration, of which the only known pattern is the rose branch, and a single example of combed scratch blue lattice (DN034).

Table 4

DN	rim	base	body	decoration	Description
DN074		complex	straight-sided	plain	STRAIGHT-SIDED BOWL; MOULDED FOOTRING 65-70MM DIAM
DN055	flanged		conical	plain	FLANGED RIM; CONICAL BODY

DN036	complex	straight-sided palm trees	STRAIGHT-WALLED BODY;COMBED SCRATCHBLUE PALM TREES;MOULDED FOOTRING;MOULDED FLARING RIM
DN035	flaring moulded	straight-sided freehand	STRAIGHT-WALLED BODY;FLARING MOULDED RIM;FREEHAND SCRATCHBLUE
DN034	complex	straight-sided lattice	STRAIGHT-WALLED BODY;MOULDED FOOTRING;COMBED SCRATCHBLUE LATTICE
DN033		straight-sided flowers	STRAIGHT-WALLED BODY;FREEHAND SCRATCHBLUE FLOWERS
DN032	simple	hemisphericalflowers	HEMISPHERICAL BODY;SIMPLE FOOTRING;FREEHAND SCRATCHBLUE FLOWERS
DN014	flaring moulded	slightly plain bulbous	SLIGHTLY BULBOUS BODY;FLARING MOULDED RIM
DN013	moulded	straight-sided plain	STRAIGHT-SIDED BOWL;MOULDED RIM
DN011	flaring moulded	straight-sided plain	STRAIGHT-SIDED BOWL;FLARING RIM
DN010	moulded	straight-sided plain - grooved	STRAIGHT-SIDED BOWL;MOULDED RIM;HORIZ GROOVES ON BODY
DN009	flaring	straight-sided plain - grooved	STRAIGHT-SIDED BOWL;FLARING RIM;HORIZ GROOVES ON BODY;SMALL DIAM
DN008	flaring	straight-sided plain - grooved	STRAIGHT-SIDED BOWL;FLARING RIM;HORIZ GROOVES ON BODY
DN007	flaring	straight-sided plain - grooved	STRAIGHT-SIDED BOWL;FLARING RIM;HORIZ GROOVES ON BODY
DN099	flaring moulded	straight-sided palm trees	STRAIGHT-SIDED BOWL;FLARING MOULDED RIM;CORDON NEAR BASE;COMBED SCRATCHBLUE PALM TREES AND INVERTED PALM TREES
DN095	rolled out	hemisphericalplain - grooved	LARGE BOWL;ROLLED-OUT RIM;LIGHT GROOVES ON EXTERIOR;CF DN64 FOR RIM

Bowl or cup

One base has a moulded footring with a diameter of 55mm and may be either a bowl or a cup (DN075).

Bowl or jar

A number of sherds come from vessels with a cylindrical body and a sharp carination at the junction of the body and the base, with a conical wall between the two. These vessels can be plain with simple (DN069) or moulded (DN070) footrings or they may have combed scratch-blue decoration (DN096). No sherds which might form the upper part of the vessel were found (or recognised) which makes it likely that the upper part is indistinguishable from the straight-walled bowls.

Chamber pots

Chamber pots are a common mid/late 18th century white salt-glazed stoneware form. Only a handful of sherds were found in the waster deposit including a moulded base with a wide moulded handle (DN068) and a simple everted rim (DN094). All the sherds are plain.

Coffee cups

A number of cup sherds have a taller profile than normal, with a slightly bulbous body. These are likely to be coffee cups. Examples with simple footring bases (37mm diameter, DN060) and moulded footring bases (DN071 and DN093) are present. The vessels have a single handle but no actual handles survive.

Cream jugs

Small jugs with a bulbous body and flaring rim, i.e. like the same form as the coffee cups but larger, are rare. A large portion of one vessel was present (DN050). It has a moulded footring (44mm diameter). The vessels presumably had a pouring lip but none survives.

Cups

Cups are a very common form. They mirror some of the shapes found in the bowls and there may be an overlap in size and function between the two. Only a few examples have evidence for handles and it is likely that the majority were tea-bowls, copying the handle-less form of contemporary Chinese porcelain vessels.

Most are decorated with scratch blue designs (Table 5). There are only three recognised designs: a roller-stamped (rouletted) band just below the rim with 'palm trees' below; 'palm trees' with no roller-stamping; freehand flowers (roses?) and leaves. Most of the vessels have slightly flaring rims with no moulding and simple footring bases. One large example has a template-moulded rim (DN005). At least four of the vessels have handles, unlike the Chinese porcelain prototypes (DN005, DN006, DN040 and DN018).

Table 5

REFNO	base	rim	handle	decoration	Description
DN040	simple		yes	plain	SMALL HEMISPHERICAL BOWL;SIMPLE FOOTRING 30-35MM DIAM;HANDLE SCAR
DN003	Simple	Plain		Plain	PLAIN HEMISPHERICAL BOWL;SIMPLE ROUNDED RIM
DN005		moulded	yes	Plain	PLAIN HEMISPHERICAL BOWL; MOULDED RIM;RIDGE AT BASE;HANDLE SCAR
DN006		flaring	Yes	Plain	PLAIN HEMISPHERICAL BOWL; FLARING RIM;HANDLE
DN027	simple			palm trees and roller stamp	HEMISPHERICAL BODY;SIMPLE FOOTRING;ROLLER-STAMP AROUND RIM

			FILLED WITH BLUE;COMBED SCRATCHBLUE PALM TREES AND SCRATCH BLUE LINE AROUND BODY
DN026	simple	palm trees and roller stamp	HEMISPHERICAL BODY;SIMPLE FOOTRING;ROLLER-STAMP AROUND RIM FILLED WITH BLUE;COMBED SCRATCHBLUE PALM TREES AND SCRATCH BLUE LINE AROUND BODY
DN025	simple	palm trees and roller stamp	HEMISPHERICAL BODY;SIMPLE FOOTRING;ROLLER-STAMP AROUND RIM FILLED WITH BLUE;COMBED SCRATCHBLUE PALM TREES AND SCRATCH BLUE LINE AROUND BODY
DN016	simple	flowers	HEMISPHERICAL BOWL;SIMPLE FOOTRING;FREEHAND SCRATCHBLUE FLOWERS
DN015	simple	flowers	HEMISPHERICAL BOWL;SIMPLE FOOTRING;FREEHAND SCRATCHBLUE FLOWERS
DN030	moulded	plain	MOULDED FOOTRING BASE;GROOVES ON LOWER BODY;CF TEAPOT BUT POSSIBLY TOO SMALL
DN020	plain	scratch blue combed	STRAIGHT-SIDED BOWL;PLAIN RIM;SCRATCHBLUE COMBED
DN018	flaring	yes palm trees	STRAIGHT-SIDED BOWL;PLAIN HANDLE;B/H FOLDED BACK AND SQUASHED;SCRATCHBLUE COMBED PALM TREES
DN012	flaring	plain	STRAIGHT-SIDED BOWL;FLARING RIM;SMALL DIAM
DN028	flaring	palm trees and roller stamp	STRAIGHT-SIDED BOWL;SIMPLE FLARING RIM;ROLLER-STAMP AROUND RIM FILLED WITH BLUE;COMBED SCRATCHBLUE PALM TREES
DN019	flaring	palm trees	STRAIGHT-SIDED BOWL;PLAIN FLARING RIM;SCRATCHBLUE COMBED PALM TREES
DN017	flaring	flowers	SLIGHTLY BULBOUS BOWL;FLARING RIM;FREEHAND FLOWERS
DN098	flaring	flowers	HEMISPHERICAL BODY;SLIGHTLY FLARING RIM;FREEHAND SCRATCHBLUE FLOWERS
DN029		palm trees	STRAIGHT-SIDED BOWL;COMBED SCRATCHBLUE PALM TREES IN TWO BANDS SEPARATED BY HORIZ SCRATCHBLUE LINE

Dishes

Dishes are another common form in the waster assemblage. Two basic shapes are found (Table 6). The most common is a shallow form with a curved wall and simple rim. Most of these were plain vessels like DN039 and DN046 but examples with scratch blue designs occur. The designs of the decorated dishes mirror those of the cups, either having freehand flowers (DN049 and DN097) or a roller-

stamped base from which spring combed “palm trees”. It is likely that these vessels were used with the cups although they do not have a cup-shaped recess like later saucers. In this respect they too follow the early 18th-century Chinese prototypes.

The other dish form is a shallow pie dish with a straight wall and flanged or rolled-out rim. All known examples are undecorated.

Table 6

REFNO	shape	base	rim	decoration	Description
DN048	hemispherical	simple	simple	roller-stamp and palm trees	HEMISPHERICAL BOWL;SIMPLE RIM;SIMPLE FOOTRING;ROLLER-STAMPED CIRCLE WITH COMBED PALM TREES COMING OFF IT
DN046	hemispherical	simple	simple	plain	HEMISPHERICAL BOWL;SIMPLE RIM;SIMPLE FOOTRING;55M DIAM
DN039	hemispherical	simple		plain	SMALL HEMISPHERICAL BOWL;SIMPLE FOOTRING
DN097	hemispherical	simple		flowers	SIMPLE FOOTRING 51MM DIAM;FREEHAND SCRATCHBLUE FLOWERS INT
DN049	hemispherical			flowers	HEMISPHERICAL BOWL;FREEHAND SCRATCHBLUE FLOWERS
DN062	conical	simple		plain	SMALL CONICAL DISH;SIMPLE FOOTRING BASE
DN064	conical	moulded	rolled-over	plain	LARGE CONICAL DISH;ROLLED-OUT RIM;MOULDED FOOTRING
DN066	conical	moulded	flanged	plain	LARGE CONICAL DISH;FLANGED RIM;WIDER FLANGE THAN DN65;MOULDED FOOTRING
DN065	conical	moulded	flanged	plain	LARGE CONICAL DISH;FLANGED RIM;MOULDED FOOTRING
DN063	conical	moulded		plain	MEDIUM CONICAL DISH;MOULDED FOOTRING BASE
DN067	conical		rolled-over	plain	LARGE CONICAL DISH;ROLLED-OVER RIM
DN061	conical		flanged	plain	SMALL CONICAL DISH;FLANGED RIM

Egg cup

A single example of an egg cup was found. It has an ovoid bowl and a solid pedestal with a flaring base of similar diameter to the bowl. The vessel appears to have been thrown in one and the base subsequently turned. The bowl is decorated with freehand scratch blue (DN037)

Kiln furniture

Several examples of white stoneware spacers were found. They appear to have been made out of flat strips of clay which were overlapped and luted rather than thrown, even though they have marks which look like throwing grooves on the surfaces. Several well-preserved or complete examples were present and it is clear that they were made in two sizes, with diameters of 22-25mm (DN002 and

DN086) and 35-45mm (DN001) respectively. There are 5 examples of the smaller size and 23 of the larger. The spacers were knife-trimmed to produce points, minimising the points of contact. In one example only the cutouts only occur on one side of the spacer (DN086). There is no direct evidence for which vessel forms were separated using these spacers (see Barker 1998 for a discussion of kiln furniture).

Tankards

Tankards were a common form with 90 sherds from no more than 75 vessels. For the featured sherds (rims and bases) the sherds were sorted into size classes which are best expressed in terms of the base diameter (since bases are much better preserved than rims). Large vessels include an example with a diameter of 113mm, medium sized vessels have bases between 72mm and 90mm diameter and small vessels include an example with a base diameter of 55mm.

Most of the vessels, of all sizes, have bases turned with a template (“moulded”) whilst the rims are all produced with a template which is either applied to the vertical rim or a slightly flared rim. A single example of a medium-sized vessel with a simple turned base was present (DN082). Most of the vessels were plain but scratch blue decorated vessels also occurred. All the known examples have freehand decoration, probably all flowers and leaves (DN089, DN090, DN022, DN021 and DN092). A number of handles were found and these too probably vary in size according to the size of the vessel. They include both reeded and plain oval examples but since there are few examples attached to a body it is not possible to correlate in detail. However, there is one 15mm wide reeded example attached to a large tankard, plain and reeded examples attached to medium-sized vessels (both 10mm wide), and 7mm and 9mm reeded examples and a plain example attached to small tankards.

Table 7

REFNO	Form	base	rim	decoration	Description
DN079	LARGE TANK	moulded			MOULDED FOOTRING
DN078	LARGE TANK	moulded			MOULDED FOOTRING
DN077	LARGE TANK	moulded			MOULDED FOOTRING
DN076	LARGE TANK	moulded			MOULDED FOOTRING;DIAM 113MM
DN083	MEDIUM TANK		moulded		MOULDED RIM;DIAM 85-90MM
DN082	MEDIUM TANK	plain			PLAIN BASE;DIAM 72MM
DN080	MEDIUM TANK	moulded			MOULDED FOOTRING;DIAM 88MM
DN081	SMALL TANK	moulded			MOULDED FOOTRING;DIAM 55MM
DN090	SMALL		flaring	flowers	FLARING MOULDED RIM;FREEHAND

	TANK	moulded		SCRATCHBLUE FLOWERS
DN089	SMALL TANK	moulded	freehand	MOULDED RIM;FREEHAND SCRATCHBLUE
DN088	SMALL TANK	moulded		SMALL;MOULDED RIM;PLAIN OVAL HANDLE
DN022	TANK	moulded	flowers	MOULDED RIM;FREEHAND SCRATCHBLUE LEAVES
DN021	TANK	moulded	flowers	MOULDED FOOTRING;FREEHAND SCRATCHBLUE LEAVES
DN092	TANK	flaring moulded	flowers	CYLINDRICAL BODY;MOULDED FLARING RIM;FREEHAND SCRATCHBLUE FLOWERS

Milk Jugs

Examples of 9 jugs with a similar bulbous body form to that of the cream jugs but larger were found. Several examples with added triangular spouts were present (DN054) but an example with a pulled lip was also present (DN053). Examples with reeded (DN091) and plain oval-sectioned handles are known.

Miniature cup

A single example of a very small hemispherical cup with a simple footring was present (DN038). At this date toy vessels would be unusual (pers comm J Young) and the function of the vessel is unknown.

Plate

A single example of a plate was found (DN045). The vessel has a plain flanged rim and appears to have been thrown and then inverted and turned. This is in contrast to the later, mid 18th-century plates whose upper surfaces were moulded.

Strainers

Sherds from three strainers were found. All three are similar to the bowl forms but have a series of circular holes pierced through the base. Comparison with the Castleford Creamware pattern book, albeit half a century later, suggests that these vessels were intended for straining the pap and pips from lemon juice. One example, DN051 had a moulded flaring rim and a straight-sided bowl body whilst another has a simple footring base (DN052).

Tea pots

Tea pots were a common form in the waster assemblage and are recognised either by their simple cylindrical rims, designed to take a flanged lid, or from their spouts or handles (which appear to have been all round-sectioned unlike those on any other form. The bases, however, are similar to those found

on larger cups and bowls. Examples with polygonal spouts and round-sectioned spouts occur. The vessels clearly vary considerably in size but there is no apparent correlation of form and size with polygonal spouts known on vessels of all sizes (Table 8). Most of the examples are plain but examples with scratch blue decoration are known. These include both the combed “palm tree” and roller stamped (rouletted) pattern (DN087) and freehand flowers (DN023).

Table 8

REFNO	Description
DN044	VERTICAL RIM LARGER THAN DN41
DN043	GLOBULAR BODY;MOULDED FOOTRING;LARGER THAN DN41
DN042	ROUND-SECTIONED SPOUT
DN041	SMALL GLOBULAR BODY;MOULDED FOOTRING;ROUND-SECTIONED HANDLE;POLYGONAL SPOUT
DN024	GLOBULAR BODY;GROOVE NEAR BASE;COMBED SCRATCHBLUE PALM TREES
DN023	GLOBULAR BODY;GROOVE NEAR BASE;FREEHAND SCRATCHBLUE LEAVES
DN087	SCRATCHBLUE ROLLER-STAMPED BAND AROUND GIRTH;COMBED SCRATCHBLUE PALM TREES BELOW

An example of a globular bodied vessel with a simple footing base may be from a teapot although the footing appears to be too small to support a vessel with a spout and handle (DN031).

Tea pot lids

Several well-preserved examples of tea pot lids were present in the collection (Table 9).

These include plain and scratch blue decorated vessels of varying sizes, matching the size range in the tea pots. All the lids have the same form and were made in the same way, being thrown with a knob finial and then inverted and turned. Presumably, if this was indeed the case, a means of support for the inverted lid must have been used but no sign of such could be seen. Most of the lids have a square, rectangular or circular pierced hole near the top although this is clearly not the case in some near-complete examples. Scratch blue decoration occurs. Examples of combed “palm trees” (DN056 and Dn057) and freehand flowers were found (DN085) as well as a single example from a small vessel with a freehand chrysanthemum pattern (DN084).

Table 9

REFNO	Description
DN059	AS DN58 BUT LARGER

DN058	FLANGED LID THROWN UPSIDE DOWN AND TURNED EXT; SQUARE PIERCED HOLE
DN057	FLANGED LID THROWN UPSIDE DOWN AND TURNED EXT; COMBED SCRATCHBLUE PALM TREES
DN056	FLANGED LID THROWN UPSIDE DOWN AND TURNED EXT; COMBED SCRATCHBLUE PALM TREES
DN085	MEDIUM; THROWN UPSIDE DOWN AND THEN TURNED; KNOBBED; FREEHAND SCRATCHBLUE FLOWERS; RECT PIERCED HOLE
DN084	SMALL; THROWN UPSIDE DOWN AND THEN TURNED; KNOBBED; FREEHAND SCRATCHBLUE CHRYSANTHEMUM; COMPLETE SO NO PIERCED HOLE

Coal Measure Whiteware

Examples of several crudely made saggars were present in contexts 508 and 513 as well as a very similar assemblage from context 507. All of these examples were thickly coated with salt glaze, which also covered broken edges. The vessels have a flat base, cylindrical walls, a rounded rim and circular cutouts in the walls. The inside of the base is covered with a thick deposit of white crumbly material, the exact nature of which is unclear. This material, known as bitstone, formed an adsorbent layer at the base of the saggar to ensure that the contents did not stick to the floor. (Barker 1998).

Late 18th to 20th-century wares

A fragment of a pearl ware plate with blue shell edge was recovered from context 423. This type was produced from the 1770s onwards but is extremely popular and long-lived. A fragment of a willow pattern plate with a partial impression of a maker's mark on the base came from the same context. The legible part of the mark reads "union pottery". Since the Society of Operative Potters operated the works on this site in the 1840s this piece may be a product. Its context, however, is definitely late 19th or 20th century and so this cannot be proved (Stoke on Trent Archaeology Service Brief).

Shell

A single oyster shell was recovered from context 423.

Discussion

Production waste from waster pit 508/513

It is argued here that almost all the pottery from contexts 508 and 513 is production waste. It is, however, possible that the lead-glazed redware vessels are not wasters, and they certainly could not have been produced at the same time or in the same kiln(s) as those used for the stoneware. They are important both because they may be products of the same factory as the stoneware and because they are a well-known form to collectors, who assign a 1720s and later date to the type.

The lack of moulded plates and scratch blue or plain chamber pots (with one exception), both of which are ubiquitous in assemblages of c.1740-65 strongly suggest that this material either pre-dates the

foundation of the Whieldon and Wedgwood industries or belongs to a very early phase of operation whilst the presence of a single refined blackware probably dates the group to the late 1740s. However, there were apparently already over 43 potteries operating in Burslem in the period c.1710-15 (1865 1865, 191-2) and it is unlikely, therefore, that we can assign this waste to a specific factory. Since the pottery fills a clay pit rather than being associated with a kiln it is possible that the material was not made on the precise site where it was found and, indeed, dumping of waste is likely to have taken place on derelict sites rather than within a factory. Nevertheless, it is important to ascertain the ownership of the Greenhead Street site (apparently High Street, Burslem, in the 18th century).

The salt glazed stoneware shows numerous signs of being the product of relatively few potters over a relatively short time span. The clearest indication of this is the very limited range of designs employed on the scratch blue decorated wares and the similarity in treatment of rims, bases and handles across most of the vessel forms.

The restricted time-span of the assemblage and the simple range of products makes it possible to place this collection in the history of Staffordshire potting. This would require comparative study of unpublished assemblages of salt-glazed stoneware from other sites in the potteries and a library search for dated examples of the forms present here.

The importance of this material for ceramic studies is increased because in north America, where historical archaeology is widely practiced, scratch blue decorated white salt-glazed stoneware is a type-fossil for the 1740-65 period and any means of refining this chronology could be very useful.

Production waste from 400s contexts

There is evidence for pottery or tile production from several contexts related to the kiln but since the material is found both in contexts later than the abandonment of the kiln and pre-dating its construction it is likely that it is not associated with the functioning of the kiln at all. It is likely that much of the waste comes from a kiln producing wall tiles and it would probably be possible to tie down the date of this activity through consulting a specialist on architectural ceramics, much of which is still *in situ* in dated structures.

Assessment

The salt-glazed stoneware waste from contexts 508 and 513 forms a very importance group of material for the reasons explained above:

- a) it predates the main period of scratch-blue decorated white salt-glazed stoneware production
- b) it is contemporary with the refined redware waste from Shelton and with other published and unpublished assemblages, but is different in composition from those groups.

- c) The material shows signs of being produced by a limited number of potters, probably a single workshop for a limited period of time.
- d) The period c. 1720-1760 is very poorly represented by pottery wasters or production-related structures in Burslem, although documentary evidence is good and suggests a period of growth and investment in production.

For these reasons it is recommended that the pottery is given further study and a report prepared for publication, perhaps in *Post-Medieval Archaeology* or a similar journal with an international readership.

The remaining finds are of only local interest, although it would probably be possible to narrow down the date range of the whiteware wall tiles.

Further work

The pottery from contexts 508 and 513 requires quantification by EVEs (estimated vessel equivalents, 1993). The value of the collection would also be enhanced if it were possible to link rim and base profiles and complete scratch blue designs known only from fragments. This would require a comprehensive search for joining sherds between the two contexts. Since the sherds are not marked this search would have to be conducted carefully so as not to lose track of which sherds came from which context.

Documentary research on the ownership of the Greenhead Street site in the early to mid 18th century should also be undertaken to try and provide a closer date and a social context on the finds.

Comparative study of other Salt-glazed stoneware assemblages and collections needs to be carried out to see if the suggested early date can be confirmed (or disproved). This would involve spending a day at the Potteries Museum examining waste collections from other sites and making a search of the art historical literature and sales catalogues for dated pieces of scratch blue decorated stoneware.

A fully-referenced report suitable for publication in an international archaeological journal needs to be produced.

Costing

Task	Description	Cost
1	Search for sherd links between contexts 508 and 513	1 day at £176 plus VAT
2	Quantification by EVEs	1 day at £176 plus VAT
3	Illustration of 101 selected pieces, scanning	Awaiting estimate, probably close to £1000

	and arranging on page, adding numbering and scale.	
5	Direct comparison of Greenhead Street and comparative material at The Potteries Museum	1 day at £176 plus VAT plus travel by car to Stoke @ £60
5	Library research	1 day at £176 plus VAT plus travel by train to London @ £40
6	Writing report for publication	2 days at £176 plus VAT
Total		Probably about £2200 plus VAT including illustration

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