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SUMMARY

In October 2007, North Pennines Archaeology Ltd carried out an archaeological evaluation and excavation out on the site of The Pothouse, within the former The St. George's Works complex on St George's Quay, Lancaster (SD 4689 6227) on behalf of Scott Wilson Ltd. An archaeological assessment by Lancaster University Archaeological Unit (LUAU 2000) had highlighted the presence of the building, a pottery, which was known from documentary evidence to have produced Lancastrian delftware in the 18th century; the pottery and its products were largely unknown, and as such the site was highlighted as being of regional if not national significance. The site was granted outline planning permission (Application No: 01/01287/OUT) on condition of an archaeological evaluation being carried to fulfil condition 7 of the consent.

Parts of the site had been occupied by a modern building, the Grubbs Building, which was demolished prior to excavation starting. The concrete pad on which the building had been constructed was removed by machine under archaeological supervision, and an evaluation trench, Trench 1, was excavated along the northern side of the site. On excavation of the trench, it became immediately apparent that the foundations and floor surfaces of the pottery buildings were very well preserved, and following the agreed methodology set out in the Project Design (Broughton 2006), and with acceptance from all parties, the site went immediately to excavation.

An area equating to the building foundations of the pottery known from cartographic sources, measuring c.28m by 20m, was excavated by machine under archaeological supervision down to the level of the highest significant archaeological horizon, and was then subject to manual excavation. The excavation uncovered sandstone walls and cobbled floors relating to the 18th century pottery, and also succeeded in uncovering the kiln and shardruck, the waste tip. The kiln was a '*continental style*' kiln, typical of the production of delftware, and was square in plan, and constructed of stone with brick flues and floor. Remnants of the final firings were recovered from the floor, as well as large quantities of saggers and pottery. The shardruck was only partially uncovered during the excavation, and following discussions with all parties, the excavation area was extended east to examine these deposits in greater depth. The shardruck was found to be approximately 1m deep, and tip-lines for the successive dumps of sagger, biscuitware and delftware were visible within the excavated sections. A methodology for removing the pottery was established, and approximately 30 tonnes of pottery waste was removed in bulk, from four different areas, by truck to the NPA offices at Nenthead. Control samples were taken from most identified layers, and as much delftware as possible was collected over the extension period.

This assessment examined the results of the excavation, and assesses the potential for future analysis of each category of data with regard to the project's research aims. The process has been designed to correspond to the objectives laid out in the guidance document *Management Of Archaeological Projects* 2nd edition (English Heritage 1991b). An updated research design is presented, and an appropriate programme of analysis outlined. It is recommended that, after analysis, the site be published as a monograph.

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Further invaluable information on the site was provided by Alan James, James Price, and Dr Andrew White, Former Curator of Lancaster City Museum. Paul Thompson, Museums' Manager North at Lancashire County Council, is cordially thanked for taking time to visit the site, as are all the staff of Lancaster's City and Maritime Museums for also taking such a keen interest. Barbara Blenkinship has provided endless support and encouragement, and has also looked at some of the pottery in her own time and at her own expense, for which we are eternally grateful.

The fieldwork was undertaken by Angus Clark, Nicky Gaskell, Frank Giecco, Joe Jackson, Alan James, Claire Mason, Martin Sowerby, and Matthew Town. Angus Clark and Cat Peters quantified the finds, and Jo Dawson of Greenlane Archaeology and Barbara Blenkinship commented on the pottery. The assessment report was written by Matthew Town, and the drawings were produced by Matthew Town and Cat Peters. The report was edited by Juliet Reeves and Laura Broughton. The project was managed by Frank Giecco, Technical Director for NPAL.

1. INTRODUCTION

1.1 CONTRACT BACKGROUND

1.1.1 The St. George's Works complex forms a parcel of land to the south of St George's Quay in Lancaster (centred on SD 4689 6227 (Figure 1)), and originally comprised the location of the Pothouse (c1754-1785), The Lancaster Gas Light Company (1826-1958) and Williamson's St George's Works (1847-1948) (LUAU 2000). Following the closure of the last of the works, part of the site was occupied briefly by Grubb's Builders Depot, but the remainder of the site has gradually declined, and the site is now occupied by semi-derelict buildings and remnants of the gasworks, including the footings of the gasometers.

1.1.2 A proposal for redevelopment of the land as mixed use development has been put forward by CTP Ltd, and the works have been granted outline planning permission (Application No: 01/01287/OUT), based on certain conditions. The redevelopment of the land has required a programme of site investigation, demolition, remediation and landscaping, and archaeological works were included as one of the recommendations of the works.

1.1.3 The archaeological works follow on from an assessment of the development site carried out by Lancaster University Archaeological Unit in November 2000, which was commissioned by Lancaster City Council (LUAU 2000). The assessment highlighted the probable presence of remains of the Pothouse surviving within the development area, and suggested that any future development would have a detrimental impact on the physical remains which could survive on the site. The Pothouse, an 18th century delftware pottery, was established in 1754 and ran for only 30 years, ceasing production around 1787 (LUAU 2000). Few records of the site exist, and no pieces of delftware have ever been firmly attributed to the site. After it ceased production, the pottery was converted into tenements, before finally being demolished in or around 1938 (ibid).

1.1.4 Scott Wilson Ltd, on behalf of their client and in consultation with LCAS, prepared a Project Design detailing the methodologies to be employed for the below-ground works (Broughton 2006). Initially one evaluation trench (Trench 1) was to be excavated on the site, to test for the survival of archaeological remains. If this proved to be negative, a second trench (Trench 2) was to be excavated parallel and south of the first. If this also proved negative, the works would be complete. If either trench uncovered remains of the Pothouse, the works would then proceed immediately to excavation. An area measuring 28m by 20m, accurately surveyed to target the known location of the Pothouse, would be excavated under controlled

archaeological conditions, and the surviving remains recorded following recommended IFA guidelines (2000) and accepted best practice.

1.1.5 NPAL was commissioned by Scott Wilson to undertake the evaluation, (summarised in Section 3.1), which was implemented between 15th and 29th October 2007. The aim of the evaluation was to identify the presence or absence of buried deposits of archaeological significance. Activity associated with the pottery was immediately identified in Trench 1 and it was agreed, in conjunction with LCAS and Scott Wilson Ltd, to proceed with an excavation of the site. NPAL was duly commissioned to carry out the excavation which was undertaken between the 22nd of October and the 14th of November 2007, monitored by LCAS and Scott Wilson Ltd. The excavation was guided by the Project Design throughout (*Appendix 1*).

1.2 LOCATION AND TOPOGRAPHY

1.2.1 The site (Figure 1, SD 4690 6225) is situated on the flood-plain forming the south bank of the river Lune, some way west of the historic medieval core of the town of Lancaster. The site is bounded by the 19th century St George's Works to the east, the former Glasson Dock railway to the south, Scaleford House to the west, and St George's Quay and the river to the north. The excavation area forms an irregular rectangular-shaped plot in the north-western corner of an area of waste ground. The site is broadly flat, approximately 578m^2 in area, with the highest point being at *c*7 m OD.

1.2.2 The solid geology of Lancaster consists predominantly of Silesian (Upper Carboniferous) grey-brown or reddened, medium to coarse grained sandstones of the Pendle Grit Formation, which is part of the Millstone Grit Group (British Geological Survey 1992). These sandstones are thickly bedded with thin siltstone partings, but with mixed sandstone/siltstone units near the top. The drift geology for the site has been mapped as glaciofluvial sheet deposits of clayey sands and gravels.

1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.3.1 Whilst Lancaster has a rich history stretching back into the prehistoric periods (cf LUAU 2000), the development site appears to have been largely peripheral to the settlement and marshland until the 18th century; in 1749, the river was subject to improvement and the quayside upgraded between 1750 and 1770, which gave a boost to trade with the West Indies, and Lancaster entered a period of prosperity with the creation of a number of fine buildings (ibid). It was against this background of regeneration that the pottery was established. The exact date of the establishment of the pottery is not known, but it is thought to date from 1754: a lease in the papers of the Lancaster Port Commission dated to the 11th of January of that year states that "*the Trustees*

of the Quay Lands in Lancaster conveyed to George Langton of Skerton, merchant, John Beakbane of Lancaster, grocer, William Chamley of Lancaster, sadler, William Preston of Lancaster, merchant, John Rowlandson of Lancaster, merchant, Edmund Bradley of Lancaster, pot painter, Edward Patton of Lancaster, pot turner and William Tillinghast of Lancaster, pot painter, a plot of land on the Quay lands for the purpose of building a pot house (at) £60 plus a yearly rent of 10/-" (Adams 1972a). The document continues saying "*the said purchasers intend to erect and build a Pott House and other works convenient and necessary for such a branch of business upon said lott of ground and have made a beginning thereof…*" (Adams 1972b), implying establishment at this time. A series of Fire Insurance policies taken out with the Sun Insurance Company on the 12th of June in the same year seem to confirm this, citing John Beakbane and William Chamley as the principal founders. The policy describes the building as a "*Pothouse only Stone Brick &Slated on the North End of the Quay Lands in Lancaster*" valued at £800 (Adams 1972b). By the 24th of March 1755, the value had increased to £1200, with an extra £400 of stock and also included, at £200, "*their Windmill only which grinds their Colours Stone built situate in a Field near the said Pothouse*" showing considerable growth (ibid), and also that the potters were not only making their ware but decorating it as well (Price 1973b). The existence of an established pottery is also given credence by a visit to Lancaster of John Baddeley of Shelton, who was associated with William Reid of Liverpool, a porcelain manufacturer. He visited for six days, and though the purpose of the visit is not stated, all his other visits at this time were connected to porcelain manufacture (Adams 1972b).

1.3.2 Nine potters are listed on the Lancaster Militia Ballot list of 1757, which excluded men below eighteen and above fifty years of age, and as such apprentices and older potters must have been excluded (White 2004). Those mentioned on the ballot list were: *George Fairhurst, William Tillinger* [presumably Tillinghast, one of the founders], *Peter Clarkson, John Masser* [Mercer?], *James Whosall, Edward Patton* [one of the founders], *Edward Bradley* [presumably Edmund, one of the founders], *William Chamley* [Founder], *and Thomas Blundell*. John Beakbane, who was born in Lancaster in 1720 and was elected as a Freeman in 1742 (Adams 1972b), does not appear, despite being of the right age; in contrast William Chamley's name always appears in documents either secondary to John Beakbane's or in a primary role. This appears to indicate that Chamley was the main active managing partner of the pottery, with Beakbane being more of a financial controller.

1.3.3 The Liverpool Poll List for the Parliamentary Election of 1761 between Sir William Meredith Bar and Charles Pole includes all the Liverpool Freemen allowed to vote, providing the names of many local potters, and including the names of seven potters who had left Liverpool to work at Lancaster (Adams 1972b). These were: *Thomas Blundell* [who also appears in the 1757

list], *Peter Clarkson* [appears in the 1757 list], *William Kenyon, John Mercer* [appears in the 1757 list as Masser], *Edward Patton* [Founder], *James Weaver, William Tillinghast* [Founder]. Edmund Bradley, another partner, also appears in the Liverpool parish registers between 1746 and 1750 (Adams 1972b).

1.3.4 No record existed of the type of pottery being produced until 1821, when Binns' survey and map of that year describes the building as the "*Pot House formerly a Delft ware manufactory*" (Figure 3). Delftware was the common name given to earthenware with a buff body glazed with lead made white by the addition of tin oxide, then painted with cobalt giving blue decoration. The pieces were then fired at low temperature to allow the glaze and decoration to become one (Price 1973a). Delftware was a development of the later medieval decorated pottery traditions of the Netherlands , and was a combination of imitations of Chinese designs fashionable during this period and this tradition (Crossley 1990). Delftware was mainly produced in three centres – Liverpool, Bristol and London – and was pre-eminent in Liverpool until replaced by creamware later in the century (ibid). The pottery at Lancaster clearly had strong links with the Liverpool potteries, and was ideally located to make use of its riverine and coastal position for the import of raw materials (e.g. the Carrickfergus clay required for its production – Francis 2000) and the export of pottery by sea along the coast and abroad (section 1.3.3). Price (1973a) suggests the quayside may have been made of dumped pottery, and this has certainly been the case on other sites (e.g. Pye's Warehouse in Lancaster – OA North 2003), though the Port Commission at Lancaster were keen to ensure the river was kept clear (LUAU 2000), and so this is perhaps not the case here.

1.3.5 Further details of the occupants of the pottery are given in the list of Lancaster Freemen and in the Apprentice Enrollment Book between 1763 and 1784 (Adams 1972a). Apprentices enrolled by John Beakbane and William Chamley include: *Hilton Thomas Blackburne (1754); James Leech (1754); William Parr (1755; elected a Freeman as a potter in 1767-8); William Ball (1757; elected a Freeman as a potter in 1767-8); William Kitchin (1757; elected a Freeman as a potter in 1767-8); James Wilson (1759; elected a Freeman as a potter in 1767-8); William Paris (1759); William Bale (1764); Thomas Holme (1765); Thomas Chamley (1779).* The freemen's list also included Pot Painters: *John Berry (1767-8); John Crone (1767-8); Thomas Cragg (1784-5); William Fairer (1769-70).*

1.3.6 In addition, in 1763, a John Chamley, potter, is listed; and later, in 1784, John Chamley, mariner, son of John Chamley (Adams 1972b). A pot merchant also listed in 1778-9, Thomas Charnley, may also be a Chamley, possibly John's son. John Chamley appears as a dealer in earthenware in Bailey's Northern Directory of 1781 (Price 1973a), implying he had moved into exporting rather than making pottery, perhaps in conjunction with his sons Thomas and John.

Lancaster was a thriving port at this time, and sea trade was no doubt more lucrative than pottery production. John Chamley is cited in the voyage book of Abram and John Rawlinson between 1784 and 1788, exporting pottery and glass to the West Indies (Adams 1972b); John Rawlinson might be John Rowlandson, one of the pottery founders of 1754, who is also listed as a merchant. John Beakbane's son Thomas, born 1760, was also a mariner., sailing to the West Indies, so there were clearly very strong family links between sea trade and the pottery production itself. Both John's and Thomas' names appear in the Cumberland Paquet of the 16th August 1785, importing rum, sugar, cotton and tamarinds in Thomas' ship, *Friends*.

1.3.7 On May 14th 1786 in the Cumberland Paquet, John Beakbane was announced to have died '*last week*'. In his will, he ordered his share of the pottery (left to his wife) be sold on his death (Adams 1972b; Price 1973a). It is unclear whether the business continued after this, and from references in the Freemen's Rolls it would appear the kilns had ceased working by 1785-6, and the workforce had either returned to Liverpool or moved into other businesses (White *pers. comm.*.). A *Plan of part of the Quay Lands as intended to be Sold in Lotts* dated to 1785 shows that the Pothouse was to be sold as a parcel with other land owned by a Mr. Brockbank (LUAU 2000), and White (2004) records the site as having been used as a shipyard for building large vessels by John Brockbank, presumably around this time (a reference from David Cragg's Diary of 1792, which records the *Clarendon* launched there – White *pers. comm.*.). Perhaps not coincidentally, John Brockbank is recorded as having built a ship, The Mary, in 1783, which became Thomas Beakbane's second ship in 1786. The pottery appears on the plan of Lancaster Marsh from 1796 (Figure 2), and this appears to be the earliest available depiction, showing an inverted U-shaped layout fronting on the quayside, with a possible small cottage to the rear. The windmill shown is unlikely to be related to the colour-grinding mill cited, as it is too far away from the pottery buildings.

1.3.8 Binns' survey and map of 1821 (Figure 3) shows a similar layout to that of the 1796 depiction, but with additional gardens (probably artistic representations) and buildings shown. Other than the addition of a few further outbuildings, the pottery appears again on the First Edition Ordnance Survey map of 1844 (Figure 4) with an identical layout to that shown on the Binns' map of 1821. 1.3.9 In 1826, the Lancaster Gas Light company occupied parts of the site immediately east of the Pothouse, with the development by 1849 of house for the work's engineer and an office building either side of the main gate on to the quayside (LUAU 2000). The gasworks became larger throughout the 19th century, and by the late 19th century the pottery was within the gasworks, '*its buildings* […] *debased as workshops and tenements*' (Adams 1972a; Plate 1). Harrison Hall's map of 1877 (Figure 5)

shows some of the outbuildings on the east side of the site demolished to make way for the gasometers. The Lancaster Corporation bought the works (and presumably the Pothouse too) in 1880, and by the Second Edition Ordnance Survey map of 1891 (Figure 6), further buildings had been lost to the south through the construction of another gasometer.

Plate 1: The Pothouse, February 12th 1895

1.3.9 The 20th century saw the continued decline of the building, isolated on the western side of the gasworks; little of their layout had visibly changed on the Third Edition Ordnance Survey map of 1919, and an aerial photograph from the 1920s shows the building arrangement (Plate 2).

1.3.10 The Pothouse buildings were finally earmarked for demolition as part of the Ministry of Health's '*clearance of unsanitary property*' in the 1930s (LUAU 2000). A 1937 plan of the buildings prior to their clearance records the buildings as owned by the Lancaster Corporation and shows them divided into numbered blocks for tenants (Figure 8). This is the clearest plan available of the building's layout. Thirty-seven tenants at the time of clearance are listed (the orders being made the 26th of May 1937, with no objections), the largest being a family of eleven in one house. After demolition, recorded as having occurred on the 11th March 1946 (but the plot shown as blank from 1938 - Figure 9), the site is recorded as having been used as a coal dump (Mr. L. Grubb, cited in Price 1973a). the gasworks closed in 1958 (LUAU 2000).

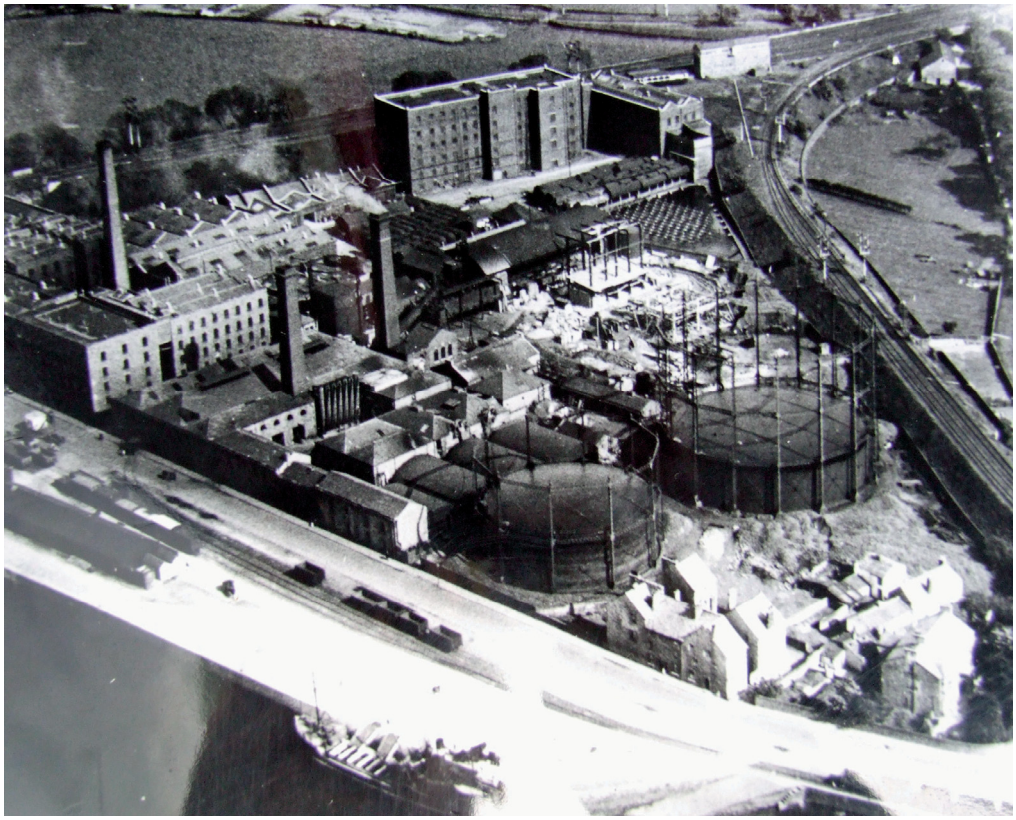

Plate 2: Luneside in the 1920s

1.4 LANCASTER DELFTWARE

1.4.1 No delftware has ever been given a Lancaster provenance, and Lancaster museum hold no pieces (Price 1973a). This is likely to be due in part to the use of trained craftsmen from Liverpool producing similarly stylized pottery in Lancaster to that manufactured there, with pieces wrongly categorized to the Liverpool kilns (LUAU 2000).

1.4.2 An 18th century delftware bowl decorated with three char, a trout-like fish particularly famous in the Lake District, was used as an illustration in Country Life in 1972, and given a Bristol provenance by its author (Adams 1972b); other such pots have been ascribed a Liverpool provenance (White pers. comm.). Char-pots are shallow flat-bottomed and vertical-sided dishes about six to ten inches in diameter, with fish painted on the inner bottom and around the outer face of the vertical sides (Plate 3). This char pot was designed for holding fish preserved in herb butter for transport over long distances (White pers. comm.). The fish *'as big as a small trout ... and the skin full of spotts'* only came from Lake Windermere in the Lake District. The fish was *'very rich and fatt'* (Victoria Art Gallery, Bristol, website: http://www.victoriagal.org.uk/), and was popular enough to always have a special type of pot made. Adams (1972b) argued that this was almost

certainly of Lancaster origin, being the nearest delftware manufactory to the area.

Plate 3: a char pot (left) and an inkstand (right) (after Grigsby 2000)

1.4.3 A further interesting piece comes from the Longridge collection (Plate 3); the piece, an inkstand, is thought have been made in Liverpool, but a Lancaster origin cannot be ruled out, particularly in view of the inscription and date. Grigsby (2000) indicates that the style of lettering also appears on a 1763 mug in the same collection, and shows similarities with a small jug of Liverpool origin, produced to commemorate the victory of Sir William Meredith in 1761 (for which there are historical links between the Lancaster potters and the election – Section 1.3.3). These are just a few examples of delftware pieces which may have originated in Lancaster, but have been incorrectly attributed to either Liverpool or Bristol.

1.5 PREVIOUS EXCAVATIONS ON THE SITE

1.5.1 Prior to 1972, the location of the pottery was well known, and sherds of delftware were being collected from the site (Adams 1972a), particularly during the construction of the Grubbs building in the 1950s (LUAU 2000). James Price (1973b) carried out limited excavations to the north and west of the Grubbs building in September 1972, but was unable to discern much stratigraphy due to the disturbed nature of the ground caused by the construction of the workshop. Over 170 pieces of biscuitware were recovered (hollow ware, jugs, teapots, dishes and pressed ware, and possible cast wares), as well as kiln furniture (a spur), but only a few sherds of decorated ware were uncovered, either with a blue flower or green design. No trace of the shardruck (tip of broken pottery and fired clay) was found, so little could be said of the wares being produced.

1.5.2 The site was further visited on the 19th October 2000, as part of the archaeological assessment phase for the current works (LUAU 2000). A four metre stretch of wall was identified protruding through the tarmac surface,

identified as part of the Pothouse, immediately west of the Grubbs building, and bases of undecorated delftware (biscuitware) were identified within the rubble along the edge of the site (ibid).

Plate 4: The Grubbs building, prior to demolition (courtesy Alan James)

1.6 THE POST-EXCAVATION ASSESSMENT

1.6.1 The aim of this assessment report is to evaluate all classes of data generated by the NPAL 2007 excavation, thus enabling an updated project design to be produced, detailing a programme of relevant analysis and publication (*Section 7*).

1.6.2 The assessment process has been designed to correspond to the objectives laid out in the guidance document *Management Of Archaeological Projects* 2nd edition (MAP2 English Heritage 1991b).

2. ORIGINAL PROJECT OBJECTIVES

2.1 GENERAL OBJECTIVES

2.1.1 The general objectives of the project were:

- to determine the presence/absence, nature, depth, extent and date of all archaeological deposits or features encountered;
- to determine the significance of any archaeological remains present;
- to achieve preservation by record through the identification, excavation, recording, assessment, analysis, publication and archiving of the archaeological resource in areas impacted upon by development proposals;
- to contribute to the regional and national heritage through dissemination of the results of the investigations.

2.2 SPECIFIC OBJECTIVES: EVALUATION

2.2.1 The specific objectives of the evaluation were:

- to assess rapidly the presence/absence of the Pot House;
- to use the results of the first evaluation trench to inform the future strategy of the archaeological work.

2.3 SPECIFIC OBJECTIVES: EXCAVATION

2.3.1 The specific objectives of the excavation were:

- to confirm and enhance the results of the evaluation;
- to establish a plan of the Pot House, identify its date and the change of use and form over time;
- to provide further information on the pottery assemblages of the site, particularly the delftware produced by the Pot House;
- to identify and catalogue as many types and forms of Lancastrian delftware as possible;
- to provide further information on the technological aspects of the delftware production at the Pot House.

3. SUMMARY OF THE RESULTS

3.1 INTRODUCTION

3.1.1 Despite fears that the establishment of the Grubbs building on the site might have truncated the archaeological remains in the area, or that the subsequent removal of the concrete pad could also have disturbed the remains, a considerable surface area was discovered undisturbed and relatively intact when excavated. The area of excavation measured 28m by 21m; the area was subsequently extended to the east by modern excavation, incorporating an additional area, measuring a further 6.8m by 21m.

Plate 5: breaking out the concrete pad

3.1.2 Initial works on-site involved the removal of the concrete pad by JCB 3CX, using a pecker. The concrete pad, **[100]**, was approximately 0.30m thick, and incorporated along its edges a series of concrete stanchions with iron I-beam uprights, which would have formed the super-structure of the Grubbs building. These were carefully removed in places, though some stanchions were too embedded to be removed and would have caused damage to the pottery building, and so were left *in-situ*.

3.1.3 On removal of the concrete pad, it became immediately apparent that a number of walls and other structures were visible, protruding through a thin layer of asphalt **[101]**, which appears to correspond with a car-park on the

site, presumably in place before the construction of the building. As specified in the Project Design (Broughton 2006), an evaluation trench (Trench 1) was excavated through the overburden to the first significant archaeological remains. It became immediately apparent that the pottery survived largely intact to foundation level, and following discussions with Scott Wilson and Lancashire County Archaeological Service, a decision was made to proceed immediately to excavation.

Plate 6: Trench 1 facing west

3.1.4 Excavation was undertaken by machine using a toothless ditching bucket; on-removal of the asphalt layer **[102]**, a series of rubble deposits were uncovered, comprising mainly sandstone and brick rubble, mortar lumps, occasional timbers, and slates (e.g. context **(111)**); this dates to the demolition of the building in the late 1930s. The removal of the rubble exposed a number of chambers within the building, and the rubble from each area was separately contexted to provide some spatial distribution to the finds, should this prove significant, despite the homogeneous nature of the material

removed. The full plan of the building, and parts of the rear yards, were exposed, though the street frontage could not be exposed, as it extended underneath the existing northern boundary wall of the site; excavation was therefore halted approximately 1.5m from the wall, as a Health and Safety precaution. On removal of the rubble, all subsequent excavation was undertaken by hand, in accordance with the Project Design, Paragraphs 7.31-7.38 (Broughton 2006).

3.1.5 To aid interpretation and description, each room identified was given a number, and reference to this will be made in the following text e.g. *Room 3*. In addition, where relevant, reference will be made to the building numbers depicted on the clearance plan of 1937 (Figure 8), as e.g. Structure 1.

3.2 PHASE I: MARSH DEPOSITS (PRE-1754)

3.2.1 The pottery appears to have been built directly onto the marshy floodplain deposits, adjacent to the Lune. Sondage 1 excavated in *Room 15* identified a deposit of bluish grey clayey silt **(265)** circa 5m above Ordnance Datum, which appears to correspond with these deposits, and excavation of the shardruck to the east of the buildings also identified the same deposits directly beneath the waste pottery dumps, with a definable horizon between the dumps and the silt, implying no other activity prior to the construction of the pottery, a fact borne out by the historical evidence (cf Section 1.3). The water table visibly rose through this deposit during excavation, and it must be concluded that the construction of a building on these deposits must have been some undertaking at the time, particularly as the plains at this time were only commencing to be improved through drainage.

3.3 PHASE II: THE POTTERY (C. 1754-1785)

3.3.1 The first definable activity relating to the construction of the pottery building itself appears to the construction of two north-south aligned rectangular buildings, corresponding to the footprint of Structures 1, 7 and 8 for the western building, and Structures 4, 5 and 6 for the eastern building (See Figure 8). Both buildings had apparently very deep foundations, presumably to compensate for the difficulty of constructing on the marshland. The eastern building comprised: walls **[245]** and **[262]** on the eastern side; wall **[261]** on the southern side, and walls **[129]** and **[126]** on the western side. The western building comprised: walls **[103]** and **[109]** on the eastern side; wall **[119]** on the southern side, and wall **[113]** on the western side. The northern wall of the buildings were not seen, being underneath the site boundary wall.

3.3.2 The eastern building, measuring 15m by 8.3m, was constructed of predominantly broad evenly coursed sandstone walls, using roughly dressed sandstone blocks bonded with lime mortar, with a rubble core. The walls

measured approximately 0.65m in width and varied in depth. Wall **[262]** extended to some 2.50m in depth, seen in Sondage 1 in *Room 15*, and had clearly been built directly onto the marsh deposits **(265)**. In contrast, wall **[129]** seen in *Room 8* only extended to 1.3m, whilst to the north, wall **[126]** was visible to fifteen courses and 1.85m in height. The contrasting heights are hard to explain, and suggest localized variations to the style of construction, perhaps dictated by the ground conditions or their required use (e.g. wall **[126]** marked the eastern side of a cellar, and acted as a revetment against the deposits in *Room 5*). The full extents of the walls were not seen throughout the building, and so little further comment can be made on their construction; the south wall, for example, could not be fully exposed due to Health and Safety Restrictions, it being quite close to the southern limit of excavation.

*Plate 7: Wall **[126]**, Room 4, facing east.*

3.3.3 The walls showed some variation of construction. The southern wall included a construction break approximately at its mid-point, which may mark the location of a doorway, since blocked up; this was hard to corroborate during the excavation, as the wall to the west of the break had largely been destroyed by a service line, which had removed any further evidence of construction breaks in the wall. The eastern wall, comprising walls **[245]** and **[262]**, appeared to have been slighted at its mid-point, approximating to the eastern side of *Rooms 9* and *12*. At this point, the wall had been partially covered by a concrete surface, implying the wall was not

standing to its full height when the surface was laid down. The variation to the wall appears to have occurred in the early part of the 20th century, as comparison between photographs taken in 1895 and the 1920s (Plates 1 and 2) show that parts of the building appear to have been taken down deliberately at this time, to create yards (see Section 3.5.2). The western wall **[126]**, adjacent to *Rooms 8* and *4*, also appears to have been deliberately constructed much thinner at 0.44m in width, perhaps at a later date, though the reason for this is unclear. If the northern wall is uncovered, the reason may become apparent.

3.3.4 The western building, measuring 14m by 9m, was also constructed of predominantly broad evenly coursed roughly dressed sandstone blocks bonded with lime mortar, with a rubble core. The walls measured approximately 0.70m in width and varied in depth. Walls **[103]** and **[113]**, seen in *Rooms 6* and *7* respectively, were visible to a maximum of seventeen courses and 2m in height with projecting foundation courses. The remainder of the walls were not fully exposed, but it must be presumed that, in a similar fashion to the eastern building, the wall foundations also varied in depth.

*Plate 8: Room 7, facing north-east, showing the angled wall **[112]***

3.3.5 In contrast to the eastern building, the western building showed little variation in its construction, being largely homogeneous. Incorporated in its eastern side, at the approximate midpoint between Walls **[103]** and **[139]**, was a contemporary entranceway, which was notable in that it was angled in a

NE-SW direction. The building also incorporated an east-west aligned internal division wall, **[117]** and **[112]**, which was bonded to the north-south aligned walls **[103]** and **[113]** and appeared contemporary; this wall had been truncated by a stanchion **[100]**. The wall formed the boundary between *Rooms 6* and *7* to the north, and *Rooms 10* and *11* to the south, and was angled to correspond with the angle of the entranceway, indicating a deliberate and planned construction. The wall was sixteen courses in height, with a very wide foundation course on the angled section, perhaps to support the extra pressure the angling of the wall had created. The wall appeared to be constructed directly on a clay deposit **(146)**, possibly naturally derived, and it appears likely that the wall was acting as a revetment to the deposits to the south, implying the main 18th walls to the south were not constructed as deep, though this could not be corroborated during the excavation. Parts of this wall, the western wall **[113]** and the southern wall **[119]** had also been truncated by the construction of service lines.

Plate 9: the Western Building, showing the variations in floor level

3.3.6 With the construction of the walls, the framework for the pottery had been established, and the internal layout could then be formalized. The next episode of construction is likely to have been the construction of a series of cellars, though interestingly the eastern building did not contain any, perhaps as they were not required in this area (the floors of the building appear likely to have been of timber at ground-floor level, built over-under-

floor voids; these voids were later in-filled – see Section 3.4.6). The western building had very deep cellars, which extended north from Walls **[112]** and **[117]**, and formed the northern half of the building layout. The cellars were approximately 2m deep at this point, and incorporated a series of cobbled floors, **[144]** seen in *Room 6*, and **[145]** seen in *Room 7* (Plate 8). These cellars probably extended as far as the street frontage originally, though had been subject to a various episodes of infilling in later periods (see Section 3.5.2). The cobbled floors may also have survived in *Room 1*, though due to the proximity of the site boundary wall and the danger of undermining this through excavation of the rubble deposit **(111)** this room was not fully excavated. South of Walls **[112]** and **[117]**, the floor level was raised, being approximately 1.10m above the cellar height to the north of the wall. The floors appear also to have been cobbled, illustrated in *Room 11* by the cobbled floor **[141]**, which appears to have extended into *Room 10* originally, and probably covered the entirety of the southern half of the building. These floors appear to have been replaced at a later date by brick floors, presumably a cheaper alternative to cobbles (see Section 3.4.2).

3.3.7 At around the time of the construction of the internal layouts, the central section between the eastern and western building appears to have been used for the first time, probably through the construction of a further phase of building; however, without uncovering the street frontage, the phasing is hard to verify with any certainty. The 1920s photo (Plate 2) clearly shows a different building arrangement in the centre, with a different pitch to the roof, and this appears to back-up the possibility of a later phase to the structure. Nevertheless, this phase must have almost immediately post-dated the first phase, as this building was constructed to house the pottery kiln.

3.3.8 An internal division wall **[121]** was built between the eastern and western buildings, abutting walls **[103]** and **[126]**. This wall survived to 2m and sixteen courses in height, and incorporated two square sockets for timber floor joists, which would have projected northwards toward the street frontage, and formed a timber ground floor for the building. The wall was constructed of evenly coursed and roughly dressed sandstone blocks, with little lime mortar visible. Projecting northwards from this wall were further cellars, at an identical depth with those seen in *Rooms 6* and *7*. The cellars, originally one open-plan area, but later sub-divided into two by a 19th century brick wall **[122]**, were only half uncovered; again, concerns regarding the undermining of the northern boundary wall limited their excavation fully. The western cell, *Room 3*, and the eastern cell, *Room 4*, both had cobbled floors, **[124]** and **[125]**, similar to those seen in the western building.

3.3.9 The southern boundary of the building was defined by the construction of another east-west aligned wall **[185]** (Figure 11); this wall visibly abuts wall **[139]** at the south-western corner of the eastern building, and presumably

abutted the western building originally, though has now been completely truncated away by modern services. This wall also appears to have deliberately slighted to ground level when the kiln area was converted into a yard (see Section 3.4.4). The wall consisted of six courses of well-dressed sandstone blocks, bonded with lime mortar.

Plate 10: The Kiln Working Area, facing south.

3.3.10 The main kiln working area, labelled as *Rooms 8* and *11* due to a later sub-division, extended south from wall **[121]** and survived in an excellent state of preservation. The kiln working area is presumed to have been built in the open-air, but may have been internal to the building. The cobbled floor seen in *Room 11*, **[141]**, extended through the angled doorway, and continued into the main kiln area as **[191]**, bounded on the north side by wall **[121]**, and to the south by a small low retaining L-shaped sandstone wall **[190]**. The latter wall consisted of five courses of well-dressed lime mortared sandstone. The cobbled surface incorporated a break across the line of the doorway, and a socket for a timber post, implying a wooden door existed between *Room 11* and *8*, the kiln area. The arrangement of walls and cobbled surface was mirrored on the opposite side, against the western edge of the eastern building; here a brick and cobble surface **[192]** had been set down, with a noticeable curve to the brick surface, implying this may have acted as the lip for a timber ramp, presumably leading up into the eastern building. The cobbled surface was bounded on the south side by a further low wall **[189]**, comprising eight courses of sandstone slabs, lime mortared. Between the two areas of cobbling, a north-south aligned working area **[187]** led to the front of the kiln. The working area comprised well-set regular unfrogged half-bricks,

in east-west aligned rows, which extended between the kiln and wall **[121]**; the arrangement suggests that there may have been a doorway in wall **[121]** leading into the building fronting the quayside. At the southern end of the main working area, a brick ramp **[186]** led into the kiln, presumably for barrowing in the fuel, probably wood. The working area was bounded on the east side by wall **[188]**, a small irregular wall of large sandstone blocks, perhaps added as a later revetting wall. Each side of the working area, and south of the two low walls, were square voids, apparently open at the time of the use of the kiln, as they were entirely filled with later deposits, laid down when the kiln went out of use. The purpose of these voids is unclear, but they may have been used to hold water, perhaps to dowse the flames once the firings were completed, and to act as a fire-break.

Plate 11: plan view of the Kiln, facing north

3.3.11 The kiln itself is illustrated in Figure 11 and Plate 11, and survived largely intact, though the kiln had been truncated through the construction of a later well and a number of services. The kiln was broadly square, and measured 9.25m in length by 8.45m in width. The main kiln structure comprised sandstone walls (**[175]** and **[176]**) measuring c1.0m in width, which only survived to foundation level. A sondage excavated into the kiln also showed it to have been built on a substantial stone foundation **[236]** approximating to the whole ground plan of the kiln, and visible to a depth of 0.60m, which

must have been required to support the immense weight of the structure. Incorporated within the sandstone walls were eight brick-constructed coffin-shaped flues, four on the east side **[180]** and four opposing on the west side **[181]**, which projected out beyond the sandstone walls and would have extended vertically up the outside of the kiln, to provide an even heating to the firing chamber where the pottery was stacked, which presumably was on the first floor. The inside of the sandstone walls were lined with a brick skin (**[173]** and **[174]**) comprising stretcher-set bricks, which had been severely heat-affected, particularly on the western side. The brick walls had a hard-fired clay-lining on the inside (**[171]** and **[172]**) which was c 2-3cm thick, and acted as a heat shield. Only the eastern and western walls of the kiln survived, the southern wall having been entirely truncated away by services.

Plate 12: section through kiln

3.3.12 The kiln floor itself (**[168]** and **[234]**) was constructed of about five layers of heat-affected half-bricks, well-set, which presumably corresponded to consecutive phases of replacement of the kiln floor; these were interleaved with the remains of previous firings, where a new floor had been laid directly

down on top of the remnants of the last usage. The policy of replacement of floors directly one over another may have been deliberate, as 'cork', a mix of loam, pottery and saggers, was often used for foundations (Barker and Goodwin 2006). When the kiln was excavated, a deposit relating to the final firing of the kiln prior to its demolition was found to 0.30m depth, approximating to the main kiln floor area. The deposit **(120)** comprised large quantities of sagger and brick rubble, in a loose reddish yellow gritty silty sand matrix. Also uncovered on the floor were deposits of baked-on pinkish yellow fired clay **[167]**, vitrified in places, which preserved sherds of biscuitware in places. The deposits were sampled as a matter of course, and have been subject to archaeomagnetic dating, the results of which will help date the last firing.

3.3.13 The exterior of the kiln area was cobbled on the east (**[182]**) south (**[183]**) and west (**[184]**) sides with well-set river cobbles set in a pink clay. It was notable that these cobbles sloped northwards into the voids on each side of the main working area (Plate 10), perhaps to allow water to run into the voids to be collected.

3.3.14 This type of kiln, styled by Crossley (1990) as a '*continental-style kiln*', is typical of delftware production sites, but most such kilns appear only to have been recorded in London, at Southwark and Lambeth, with few if any outside the capital (possible unpublished examples being cited at Bristol and Liverpool) (Crossley 1990). Parallels for kilns of this type illustrated within printed sources show them to have been of rectangular plan with tall arched superstructures, and in the 18th century, chimneys (*ibid*). Contemporary dutch engravings of delftware kilns show them to have stood to three stories in height (Plate 13), and this kiln is likely to have been of a similar size, in view of the three storey building which housed it. The kiln was probably demolished after the pottery changed use in 1785, with the southern wall **[185]** lowered at this time to open the area out into a yard.

3.3.15 To the south and east of the pottery, extensive deposits of waste pottery material had been tipped, extending beyond the limits of the excavation. The shardruck, comprising the broken and misfired pottery and furniture from the kiln, extended to approximately 1m in depth, and had been visibly formed by the successive tipping of pottery in episodic dumps, which showed as clearly defined strata with varying concentrations of pottery and sagger, usually in a clay matrix. Initially, the shardruck was only partially uncovered during the first excavation phase. It was located just inside the agreed excavation area, but due to Health and Safety issues little could be safely removed, due to risks of section collapse. Following agreements with all parties, the excavation area was extended to the east to examine these deposits more thoroughly. It became immediately apparent through tentative sondage excavation that very large quantities of delftware survived

within the deposits, as well as undecorated delftware (biscuitware) (some of which preserved pencil markings for the decoration), lists written on scrap pot sherds, and varied styles of kiln furniture. As time was limited, a strategy was devised whereby large quantities of the pottery waste were removed in bulk by truck to the NPA offices, to be assessed at a later date. Four areas were targeted for analysis, and each consigned an individual context number (**(142)**, **(219)** and **(220)** on the eastern side, from north to south, and **(159)** on the southern side). Further deposits were identified west of **(159)**, but due to diesel contamination in this area these could not be sampled. The assigning of context numbers allowed some preservation of spatial distribution, albeit only in crude form. In addition to the bulk sampling, pottery and saggers were also hand collected from each sampled area.

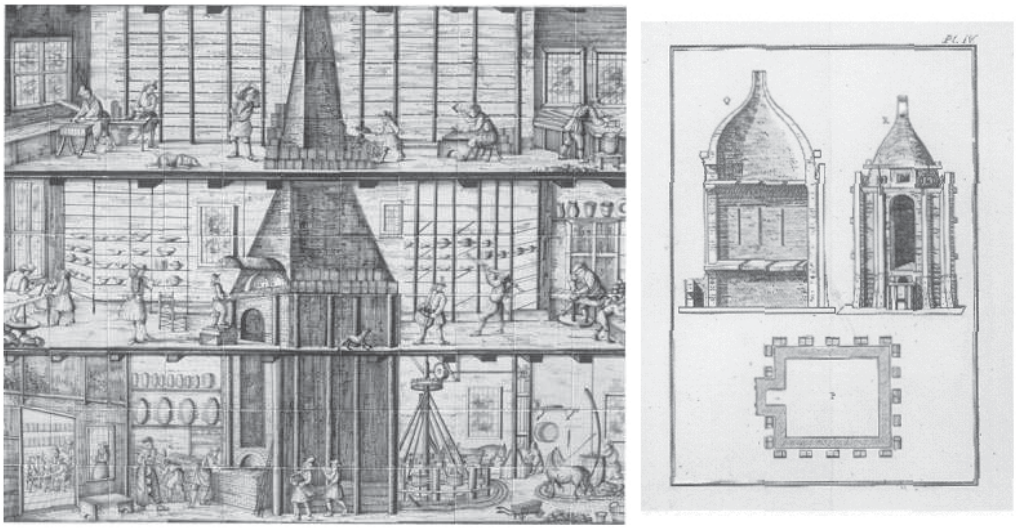

Plate 13: depictions of Dutch 18th century delftware pottery kilns

3.3.16 Due to rather 'blunt' sampling methodology, detailed sections were drawn illustrating each dumping episode, along the south excavation area, and through the shardruck deposits to the east (see Figure 10). Each dumping episode was assigned an individual context, and control samples were taken from most of the deposits. The sampling should allow some chronological information regarding the dumping, and any evidence of differing pottery production, to be preserved.

Plate 14: the Eastern Area, with piles of waste awaiting collection

3.4 PHASE III: TENEMENTS AND WORKSHOPS (C.1785 TO 1880)

3.4.1 Despite the decline of the pottery business, the building itself appears to have continued in use throughout the 19th century and some investment appears to have been put into in the structures at this time. Little recorded activity is given for this period, the buildings having become enveloped by the adjacent gasworks which was constructed from the 1820s onwards, though suggestions have been made that the buildings were used as a shipyard (Section 1.3). No archaeological evidence for this was uncovered, though this is to be expected, as most of the industrial activity presumably took place on the quayside rather than within the buildings, and, as with the pottery, left little physical imprint. The building itself was probably not radically altered therefore, but rather adapted from its 18th century form for its use as 19th century tenements.

3.4.2 The precise dating of these changes is at present problematic, as little dating material was uncovered for the building alterations. It seems likely that parts of the building were sub-divided off during the early part of the 19th century; wall **[118]** has been ascribed a probable pre-1880 date, as it forms an east-west aligned sub-division within the southern half of the western building. The wall was quite poorly made, and consisted of a random-coursed sandstone wall, lime mortared, containing occasional brick. A similar wall,

[259], was also identified in the eastern building, in approximately the same position. The building was taken over by the Lancaster Corporation in 1880, and was probably converted to the layout shown on the 1937 clearance plan around this time; the plan shows a north-south division between Structures 5 and 6 in the western building, and Structures 7 and 8 in the eastern building, so these east-west aligned divisions probably predate this change. The replacement of some of the floors in brick within the western building, **[156]** in *Room 10* and **[155]** in *Room 13*, was probably also undertaken prior to 1880. Excavation of a sondage into floor **[155]** showed it to have been bedded into a humic soil deposit **(232)**, which lay on a deposit of lime mortar **(230)** which in turn covered the natural **(231)**; the mortar may have been put down to inhibit weed growth.

3.4.3 A number of chimney bases were recorded during the excavation and these presumably relate to the conversion of the industrial pottery building to a residential tenement building, which probably occurred in the 19th century. A series of chimney bases and fireplaces were recorded broadly in a line and corresponding with the centres of the buildings fronting onto the quayside. Within wall **[103]** a fireplace **[104]** was inserted; the uprights for the sandstone fire surround were visible, as was the flagged base for the hearth itself. Between *Rooms 3* and *4*, the brick base for a chimney **[123]** was visible at basement level, presumably to support a chimney serving fireplaces on the upper floors. A further sandstone chimney base **[243]** was visible in *Room 5*, though no evidence of a hearth survived. Interestingly, little or no evidence for fireplaces was found towards the rear of the building, though there were clearly chimneys in this position in the late 19th and early 20th centuries (Plates 1 and 2); the sole example was **[263]**, a fireplace with sandstone fire surround, built into the corner of *Room 15*, and possibly part of a kitchen area. The absence of chimneys may indicate the areas to the rear were in use for other, perhaps industrial, activity in the 19th century, with the quayside structures forming the domestic areas, though this is tentative speculation at best.

3.4.4 The central building showed some quite extensive remodeling at this time, and this is presumed to have taken place pre-1880. A wall **[136]** was built across the north side of the kiln, corresponding to its northern wall, which it appears to have used as a partial foundation. The wall only survived to four courses in height, and appears to have incorporated a doorway in its centre, with a central stone showing sockets for a timber upright, implying it had a double door. The door led out southwards into a yard, which was formed over the demolished remains of the kiln; no evidence of a surface was visible, the yard having been formed of compacted rubble, the southern limit was defined by a stone kerb **[143]**. Into the demolition deposits, a sandstone well

[169], incorporating a timber draw-pipe, had been cut, providing water to the tenements.

3.4.5 To the north of wall **[136]**, and extending up to wall **[121]**, which was built up a further 0.6m in brick, were extensive makeup deposits. These comprised dumps of fine pale silt **(131)**, to a depth of 0.30m, with patches of iron-stained gritty silty sand **(130)**, overlying a dump of mortary silt **(138)**. Built onto these deposits, and running parallel to wall **[136]**, were the fragmentary remains of a further wall **[133]** sub-dividing the area, and apparently forming a corridor. The angled entrance through from *Room 11* was also blocked up by a wall **[116]** at this time. A small patch of cobbling **[135]** was noted in the south-west corner of this corridor. The area between walls **[133]** and **[121]** was flagged, as remnants of sandstone flagging **[132]** survived, and included stone settings; this may have been a kitchen area.

3.4.6 In the eastern building, the under-floor voids appear to have been infilled to allow the construction of cobbled floor surfaces, now mostly truncated by later activity. The marsh deposits (Section 3.2) appear to been covered over by a layer of loose pale brownish yellow sand **(239)** to 0.60m depth, and then a further deposit of fine silt **(238)**, to 0.30m depth, similar to that laid down in *Room 8*. In *Room 15*, patches of cobbling **[260]** survived on top of this silt layer, similar to the surfaces and deposits seen in *Room 8*.

3.4.7 The exterior of the building was radically altered to the south and east at this time. The Eastern Area preserved deposits of humic soil **(307)** overlying the shardruck deposits, to c.1.2m depth, and it would appear that this area became a garden in the 19th century, which fits with the cartographic evidence (e.g. Figure 3); a later wall, **[308]**, shown from the late 19th century (Figure 6), was seen at the eastern side of this area, but just outside the excavation limits. Between the Eastern Area, and *Room 16* (actually outside the building), was a similar wall **[264]**, comprising only a large foundation stone, and preserving the position of a gate at the corner between this wall and wall **[261]**. *Room 16* appears to have been a small yard, with a series of levelling and yard deposits identified overlying the earlier shardruck deposits (**(225)** to **(229)**). The western side of this yard was defined by an angled wall **[224]**, running south-east beyond the limit of excavation and presumed to terminate just within the excavation limits. This wall is shown unaltered throughout the 19th century until c1880 when the Lancaster Corporation took down this wall and some adjoining buildings to allow the construction of a new gasometer. Extending west from this wall, up to a further north-south aligned wall **[163]**, were two further deposits of garden soil **(222)** and **(223)**, a dark greyish brown and pale orangeish brown clayey silt respectively. These extended northwards, and probably formed a small kitchen garden; the deposits also directly overlay the earlier shardruck deposits.

3.4.8 Wall **[163]** formed the southern boundary of a yard, and extended westwards for 12.5m, terminating at a probable gateway. The wall only survived to foundation level, and was constructed of well-dressed sandstone blocks mortared with lime mortar. North of the wall, and extending up to kerb **[143]** was a well-set cobbled yard surface **[193]**, which survived largely intact, though parts of the western side had been truncated by services. This cobbled yard was built upon layers of makeup deposits, sealing and overlying earlier shardruck deposits (**(194)** to **(216)**). The western boundary of the yard was formed by a stone boundary wall **[161]**; the wall survived to five courses in height, and was mortared with lime mortar. The southern terminus of the wall was marked by a large sandstone block, which formed the western side of the gateway, whilst the northern end adjoined the existing western boundary wall at the dog-leg. West of this wall, and extending between this wall and the western boundary wall, was a cobbled lane **[160]**, truncated by a concrete surface **[162]**. This lane would have provided access to the rear of the building from the quayside; the drive and gate to Scaleford House now incorporate part of this lane.

Plate 15: the southern yard and western lane

3.5 PHASE IV: LANCASTER CORPORATION TENEMENTS (1880-1938)

3.5.1 The final phase marks the beginning of the decline of the building, leading to its eventual demolition in or around 1938. The Lancaster Corporation are presumed to have taken over ownership in 1880 when they also took over the gasworks, and they were certainly in ownership at the time of demolition. Most of the changes to the building at this time appear to mark

changes to the provision of sanitation facilities to the building; this is presumably in line with the legislation at the time (e.g. the Public Health Act of 1875) which required the improved provision of running water, drains and toilet facilities to the existing housing stock (cf Newman *et al* 2001).

3.5.2 The clearest evidence for such changes are the numerous service runs which were excavated through the building, often truncating walls and floors in the process (e.g. **[170]**). In addition, between 1895 and 1920 (compare Plates 1 and 2), the Corporation also appear to have taken down parts of the building to form small yards, best illustrated on the 1937 clearance plan (Figure 8). A yard was created between Structures 4, 5 and 6, apparently serving all three buildings. The yard was formed over the existing cellars, which were sub-divided by the construction of an east-west aligned wall **[105]**, later reinforced with a brick skin on its north side **[110]**. The wall was constructed of random coursed sandstone and brick, with concrete under-pinning, and formed the support for the southern wall of Structure 4. Incorporated within this wall was a doorway **[106]** through from *Room 2* into the yard. A privy structure **[148]** appears to have been inserted into the cellar, presumably shared between the buildings. The privy was abutted by a division wall **[152]**; the cellars were presumably accessed from Structures 5 and 6 (wall **[147]** perhaps marking the edge of a stair), and this division wall marks the boundary between the two properties. Within Structures 5 and 6 a raised area **[153]** may have marked a communal corridor into the privy. Within Structure 4, parts of the original cellar were infilled; *Room 2* was constructed over this infill, which was revetted on the west side by **[108]**, a brick wall, which preserved a timber floor beam **[107]** above it. The floor of *Room 2* was constructed in concrete **[102]**. Within *Room 1*, a stone staircase **[109]** led down into the cellar, presumably from a doorway on the street; however, neither the full extent of the steps or the base of the cellar were visible due to the cellar only being partially excavated.

3.5.3 A further yard was created within the eastern building, between Structures 1, 7 and 8, and clearly illustrated in Figure 8. Wall **[244]** formed the south side of Structure 1, and was constructed of three courses of random-coursed sandstone and brick wall, built directly onto the silt infill **(238)**. This was paralleled to the south by wall **[254]**, approximately 0.45m thick and surviving to foundation level only. This wall formed the north wall of Structure 7 and 8, and was also constructed of sandstone and brick. The area between the buildings was in turn sub-divided by a boundary wall **[248]** constructed of three to four courses of sandstone wall, forming two yards. The yard to the north served Structure 1, and comprised a concrete yard **[246]**; a rectangular structure is shown on 1937 clearance plan at the western side of this yard (Figure 8), and this corresponds with a void in the concrete, which marks its position. The structure was probably a privy; a linear break

in the concrete **(249)** marks the line of the sewer trench. The yards to the south served Buildings 7 and 8, and were also constructed of concrete **[250]**, incorporating a ceramic gutter **[253]** in each yard. A square brick structure **[251]** with internal sub-division **[252]**, central to the two yards, appears to be a further communal privy, presumably linked to the same sewer.

3.5.4 Within Buildings 7 and 8, the area between walls **[254]** and **[259]** appears to have been used for kitchens or possibly bathrooms. Two brick structures, **[256]** in Building 7 and **[258]** in Building 8, appear to mark the positions of sinks. The floor in Building 7 was concrete, **[255]**, whilst in Building 8 the floor had been tiled with square red ceramic tiles **[257]**. Despite these changes, by 1938 the buildings had been condemned as unsanitary, and this led to their eventual demolition.

4. RESULTS OF THE ASSESSMENT

4.1 AIMS AND OBJECTIVES OF THE ASSESSMENT

4.1.1 The primary aim of this assessment was to evaluate all classes of data from the excavations undertaken at The Pothouse, St George's Quay, Lancaster, in order to formulate a project design for a programme of further analysis appropriate to the potential of the site archive.

4.1.2 The objectives of this assessment correspond to, and are prescribed by, *Appendix 4* of *MAP2* (English Heritage 1991b). They are to:

- assess the quantity, provenance and condition of all classes of material: stratigraphical, artefactual and environmental;
- comment on the range and variety of that material;
- assess the potential of the material to address questions raised in the course of this project design;
- formulate any further questions arising from the assessment of this material.

4.1.3 This assessment will present:

- a factual summary, characterising the quality and perceived quality of the data contained within the site archive;
- a statement of the academic potential of these data;
- recommendations on the storage and curation of this data.

4.2 MATERIAL ASSESSED

4.2.1 The entire electronic, paper and artefact archive was examined for the purposes of this assessment. Quantifications are incorporated within the individual assessments.

4.3 PROCEDURES FOR ASSESSMENT

4.3.1 The method of assessment used varied with the class of information examined. The stratigraphic data was examined in full, whilst most classes of finds could only be summarily assessed, with observations supplemented by the finds records generated during the course of the excavation.

4.4 STRUCTURAL AND STRATIGRAPHIC DATA

4.4.1 ***Quantification:*** the site archive from the NPAL excavation in 2007 comprises the following:

context / sample / plan / section indices	10
context records	210
room records	18
sample records	2
digital outline CAD plan	2
plans on drawing film	8
digitally recorded sections	4
digital video footage (mpeg files)	60
digital photographs (jpeg files)	630
rectified elevation photographs	37
monochrome photographs	216
colour transparencies	222

4.4.2 The 210 context records relate to the following feature categories:

Phase I (pre 1754):	Deposits	4
	Structures	0
Phase II (1754-1785):	Deposits	64
	Structures	44
Phase III (1785-1880):	Deposits	22
	Structures	25
Phase IV (1880-1938):	Deposits	4
	Structures	29
Demolition (1938)	Deposits	15
Modern (post-1938)	Deposits and Structures	3

4.4.3 ***Evaluation:*** with the exception of the northern edge of the Pothouse building, which lies under the current boundary wall, excavation has allowed a complete stratigraphic record to be made of the whole building, kiln and associated deposits, and has charted its evolution from pottery through to tenements and finally demolition, providing evidence of activity from the mid 18th century to the 20th century. The pottery was wholly preserved beneath a layer of tarmacadam and concrete footings of later buildings, with very little truncation evident, and the extents of the waste pottery deposits and the survival of the associated buildings as depicted on the early cartographic sources can only be guessed at, as the excavation was confined only to the building footings and the immediate area around the Pothouse.

4.4.5 All contexts are shown on a site matrix. Broad phasing has been ascribed to all the contexts, and the phases are discussed in detail in Section 3.

4.5 THE FINDS ASSEMBLAGE

4.5.1 ***Quantification*:** due to the large number of artefacts recovered from the site, little processing of the material has been undertaken to-date, pending agreement of the post-excavation resource. Approximately 30 tonnes of pottery waste were removed from the site as a bulk sample. This sample has yet to be processed, but equates to approximately two thousand 10 litre sample tubs, unchartered.

4.5.2 Of the hand-recovered samples, a total of approximately 55 10 litre tubs of pottery and 44 large finds bags are yet to be processed. Due to the nature of the unprocessed status of these finds, some of the material has yet to undergo an identification and sorting process.

4.5.3 Some pottery has undergone a swift assessment, in order to provide a basic picture of the assemblage recovered, and this has identified a predominance of saggers with a large number of delft and biscuitware, as well as smaller quantities of clay pipe, other types of pottery and glass. An approximate total of 22 10 litre sample tubs contain processed pottery, with 64 examples of non-pottery finds. All material is summarised in tabular form in Appendix 3.

4.5.4 ***Methodology*:** for ease of this assessment report, the hand-recovered assemblage data has been separated into unprocessed pottery (4.5.2; Table 2 and 3), processed pottery (4.5.3; Table 4), and processed finds (4.5.9; Table 5). A preliminary break-down of the assemblage by fabric was prepared, and estimates of phasing and dating has been produced based on context and stratigraphy. Outline details of the above were entered into an Access database in order to prepare preliminary catalogues.

4.5.5 ***Evaluation*:** hand-recovered pottery was recovered from 54 contexts, most of them relatively undisturbed, albeit truncated. 3.75 10 litre tubs came from unstratified areas and are yet to be processed.

4.5.6 The majority of the finds came from contexts dated to Phase II of the site's history, between 1754 and 1785. 49.1 10 litre tubs from this period are yet to be processed, and the majority of the processed pottery relate to this phase. The majority of the processed pottery from this date is delftware, with high quantities of both biscuitware and saggers represented. In addition, 21.2 processed ten litre tubs date to Phase II.

4.5.7 Of lesser importance, due to the later nature of the material, are the samples taken from later contexts. No pottery or hand-recovered finds have yet been processed from within the later phases of the site's history. Three contexts are represented from Phase III (1785-80) constituted by 4 bags of unprocessed finds; two from the Phase IV (1880-1938), a total of 2 bags; and eight from the 1938 demolition rubble deposits, marking the final phase on-site, consisting of 1.5 10 litre tubs and 11 bags.

4.6 EARLIER POTTERY SAMPLES (PHASE II)

4.6.1 ***Quantification:*** none of the material found pre-dated 1754, with the earliest artefacts recovered dating to Phase II, between 1754 and 1785. Samples of this period amounted to 49.1 10 litre tubs of the unprocessed material and 21.2 litre tubs of the processed material, which accounts for 93.1% of the total 10 litre tubs recovered. This sample provides a rare opportunity to analyse such a large assemblage of early material.

4.6.2 ***Methodology:*** all artefacts were examined for the purposes of this assessment, by rapid scan.

4.6.3 ***Evaluation:*** the majority of the early material are fragments of saggers, although some of the unprocessed sample does consist of mixed material, which may yet provide a rare occurrence of delftware. A smaller quantity of biscuitware also makes up the processed sample. The majority of the unprocessed, and two thirds of the processed assemblage is representative of Phase II (1754-1785) and a larger quantity of non-sagger fragments is anticipated from this sample.

4.7 NON-POTTERY FINDS

4.7.1 ***Quantification:*** a total of 64 processed finds were hand-recovered and represent three different contexts, all relating to Phase II (1754-1785).

4.7.2 ***Methodology:*** all artefacts were examined for the purposes of this assessment, by rapid scan. Outline details of the objects were entered into an Access database in order to prepare a preliminary catalogue.

4.7.3 ***Evaluation:*** a total of 6 clay pipes, 5 of which were stems, and 1 of which was inscribed were recovered. 2 fragments of glass were recovered from the same context, thought to represent window glass fragments. Two examples of flint were recovered from the same context and one coin represents the assemblage. A total of 10 sherds of decorated pottery have been processed and 26 sagger pegs from two contexts were found. Other types of pottery, non-delft or biscuitware fragments were identified from the processed finds

assemblage and three brick fragments. 1 fragment of tile, 1 limestone fragment and 1 example of a shell also constitute the processed finds assemblage.

5. CURATION AND CONSERVATION

5.1 RECIPIENT MUSEUM

5.1.1 It is proposed that the ultimate place of deposition for the finds should be the Lancaster Maritime Museum, and this has been agreed with Paul Thompson (Museums Manager North, Lancashire Museums Service).

Lancaster Maritime Museum

Customs House

St George's Quay

Lancaster

Lancashire

LA1 1RB

Contact: Assistant Keeper (position not yet filled)

5.2 CONSERVATION

5.2.1 The most immediate and pressing conservation requirements stem from the storage of the pottery waste removed in bulk from contexts **(142)**, **(159)**, **(219)** and **(220)**. The waste corresponds to approximately 30 tonnes of sagger, pottery and other finds in a soil matrix, stored in separate piles in the NPAL yard. Currently, the bulk waste is covered by a mix of tarpaulin, wooden boards, and plastic sheeting in an attempt to keep the winter conditions from attacking the finds, but inevitably there has been an effect on the waste from frost and freeze/thaw action, which is of concern. It is therefore recommended that this material be processed as soon as possible, before any significant damage is undertaken to the finds.

5.2.2 The hand-collected pottery and other finds are stable, and there are no immediate conservation concerns for these. These still require full processing and storing in acid-free cardboard boxes.

5.3 STORAGE

5.3.1 The complete project archive, which will include records, plans, both black and white and colour photographs, digital media, and artefacts, will be prepared following the guidelines set out in *Environmental Standards for the permanent Storage of Excavated Material From Archaeological Sites* (UKIC 1984, Conservation Guidelines 3), *Guidelines for the Preparation of Excavation Archive for Long-Term Storage* (Walker 1990) and *Archaeological Archives - A guide to*

best practice in creation, compilation, transfer and curation by Duncan H. Brown, July 2007 (Archaeological Archives Forum).

5.3.2 All finds will be packaged according to the Museum's specifications, either in acid-free cardboard boxes, or in airtight plastic boxes for unstable material.

5.4 Discard Policy

5.4.1 On completion of the finds work, discussions will be held with the client to look for an agreement to discard the unstratified and demonstrably modern material.

5.5 General Conservation

5.5.1 Most of the assemblage is well-preserved and in good condition and thus the conservation requirement is low.

5.6 Packaging

5.6.1 All finds still require full processing and packaging, before any finds assessment can be completed. Box lists will need to be prepared and will be updated into a database when the identification of objects is complete.

6. STATEMENT OF POTENTIAL

6.1 INTRODUCTION

6.1.1 The proposed redevelopment of the St. George's Works site has provided a unique opportunity to study Lancaster's sole delftware pottery manufactory by means of a modern open area excavation. This has provided further a wealth of evidence of the use of the area throughout the 18th to 20th centuries, and has allowed the recovery of a large assemblage of hitherto unrecorded delftware, biscuitware and saggers. In addition, the recovery of post-medieval and modern features has provided confirmation of evidence, already suspected from cartographic sources, of land-use at the site during these periods.

6.2 PRINCIPAL POTENTIAL

6.2.1 The study of the industrial archaeology of the post-medieval period is recommended as a priority in the English Heritage document *Exploring Our Past* (1991a), which stated that this was a topic in which '*England can claim to have international pre-eminence'*. Fletcher (1996) highlights the general neglect of the topic in Lancashire, an area which had been seen as one of the cradles of modern industry. In 1996, only 20% of the Lancashire County SMR sites listed related to an industrial origin (*ibid)*, and the chief industries he cites relate to coal mining and the textile (chiefly cotton) industry, though potteries are not mentioned. Fletcher highlights the threat faced by industrial landscapes and buildings, the physical remains of often long-departed industries through development pressures (Fletcher 1996, 164), and though the statement was published over ten years ago, the situation remains one of concern.

6.2.2 Within the context of Industrial Archaeology, the study of ceramic production and coinage provides an interesting indicator of long-term economic continuity and change. Before 1650, ceramic innovation was slow, relying on old technologies. The arrival of tin-glazed earthenwares in the late 16th century marked a development of techniques, using specialist kiln types, the pottery being double-fired in protective saggers. The organization of the wares tended to be capitalized by entrepreneurs, who utilized a range of specialist craftsmen and who could encourage experimentation in forms and techniques due to the capitalized nature of the processes. The result was a growing diversity and complexity of technology used and a wider economic organization. Ceramics became a fashionable as well as a functional item, and a wider variety of forms, fabrics and finishes was produced (Courtney 2004). The 18th and 19th centuries saw a continued expansion in ceramic

production and consumption, seen as a '*ceramic revolution*' (Barker 2004). The increased production saw the development of the factory system and the increased number of workers employed.

6.2.3 Barker (2004) notes that '*the developments within the ceramics industry have generally been studied from the narrow perspectives of specific ware types and individual manufacturers, while the investigation of the manufacturing processes and of the factories lags behind*'. Development was a response to inter-related economic, social and technological factors. In the early 18th century, ceramic manufacture concentrated on lead-glazed earthenwares, fired only once, made in small workshops. In contrast, the production of delftware was different, requiring a greater degree of organization, particularly as the fuels and clay were not available locally. Investment was therefore required and partnerships between financial backers and potters were common. Larger workforces, including pot-painters, were also required, and more specialization in specific areas of the factory was therefore needed, and tailor-made factory buildings, rather than ad-hoc developments on the sides of dwellings, became more common (Barker 2004). By the late 18th century, the British share of the world ceramic market had increased, with greater exports abroad, particularly to the New World, and this resulted in larger factories, more rigid division of labour, and rationalization of complex processes (Barker 2004). Nevertheless, pottery production could not rely on machinery, and remained labour intensive, savings only being possible through economies of production (Barker 2004).

6.2.4 The known archaeology for the production of delftware in the United Kingdom is limited. Southwark in London appears to have been one of the earliest locations for delftware production, from about 1612 (Crossley 1990). The first movement from London was to Brislington, in about 1642; from there potters moved to Bristol in 1683, and then on to Wincanton until 1750. Southwark potters moved to Liverpool in 1710. Pottery was also produced in Dublin (1735-1770), Glasgow (1748 to late 18th century), and from the middle of the 18th century in Belfast, Limerick, Whitehaven, and, of course, Lancaster (*ibid*).

6.2.5 Excavations have not been carried out in all areas. In Bristol, Glasgow and Liverpool, only kiln-waste material has ever been recovered either from shardruck deposits or within pottery assemblages from excavations (cf Davey and McNeil 1980). Not one site of the well-known tin-glazed earthenware industry in Liverpool has been investigated (Newman and McNeil 2007a), though an unpublished circular delftware kiln in Liverpool has been recorded (Crossley 1990), and a potential kiln base from Bristol, for which all details have been lost. No published excavations of kilns has been undertaken outside of London. The kilns excavated in Southwark, Lambeth and Fulham are the continental–style kilns, with a rectangular plan and

arched superstructures, similar in style to the Pothouse kiln, though no apparent complete kiln is recorded (Crossley 1990).

6.3 REGIONAL PRIORITIES

6.3.1 The situation regarding ceramic studies in the North-West is summarised in detail in the *North-West Regional Research Framework*:

'Liverpool became a major producer and exporter of tin-glazed wares and porcelain in the 18th century and the industry continued there into the 19th, with the last works closing in 1840. There seems to be a correlation between the establishment of 18th century factory-scale potteries and ports, presumably because of a connection with the Atlantic trade, though this remains to be investigated. An industry developed at Whitehaven and a short-lived delftware works was set up on the quayside in Lancaster. Other not very successful attempts were made to introduce factory-scale pottery production in Chester, Kendal and Manchester. Of the factories, only the Lancaster manufactory has received even limited archaeological examination.'

There is a lack of archaeological evidence for the production of pottery in the region at all periods. No production units have been seriously investigated and published […]. Although a small number of production groups have been recovered from evaluation trenches in Liverpool, none of the sites have been subject to archaeological investigation' (Newman and McNeil 2006a, 157).

6.3.2 Given the commercial nature of the project, the main aim was to record and characterise the surviving archaeological remains on the site, particularly those relating to the 18th century delftware pottery buildings. Building on this, the second major aim was to contribute to existing archaeological knowledge relating to the production of post-18th century ceramics, as ceramic manufacture is not well-understood in the North-West (Newman and McNeil 2007a and 2007b). Little archaeological research has been undertaken on any factory sites in the North-West, other than at Prescot in Greater Manchester and Chester (*ibid*), and recently by NPA Ltd at Dearham in Cumbria (Town 2006). The importance of the Pothouse lies in the fact that little is known about the manufacture of delftware in Lancaster, and the site is believed to be the shortest-lived and least known of the delft manufactories. Little is apparently known regarding the kiln's function either in Lancaster or on other sites, or the production of delftware in Lancaster. Little documentary research has been undertaken into the delftware manufactory at Lancaster, and further research may highlight the history of this site. Crucially, there are no known complete Lancaster delftware pieces in existence. There is confusion between Lancaster delft and other delft due to this, and therefore the recovery of such large quantities of pottery from the excavations is of national importance.

6.3.3 In addition, little work has been undertaken on any ports in the North-West, particularly Lancaster, other than limited building recording (the notable exception being the extensive excavation recently undertaken by OA North in Liverpool). Little available excavated data is recorded for overseas trade in the North West (Newman and McNeil 2006b).

6.3.4 ***Stratigraphic Data:*** study of the stratigraphic record will potentially allow the phasing of all deposits which were not disturbed by post-medieval and modern truncation; the phasing of all deposits not subject to modern disturbances will allow a full stratigraphic sequence to be produced for this part of Lancaster. The stratigraphic data will provide the framework in which other analyses will take place and should enhance our understanding of the use of the area as a pottery, and set this in context with both later and earlier activity. Integrated study of the stratigraphy, the kiln, and of documentary sources should shed light on pottery manufacture in the extramural areas of Lancaster.

6.3.5 ***Finds Data:*** the archaeological finds assemblage from the North West as a whole is probably one of the smallest from the country. As a result, sites that generate stratified assemblages are important, as they can be used in the refining of primary type series (particularly of pottery but also of other material).

6.3.6 ***Post-Medieval Ceramic Vessels:*** the pottery assemblage provides a sound framework for dating. The focus of the assemblage lies within the 18th century, but the range, from c1750 to the c1780, may provide context to previous pottery assemblages and aid identification of future pottery types. Thermoluminescence dating from different layers may help date the pottery sequences identified (accuracy to c. 8-10%) (English Heritage 2006).

6.3.7 ***Burnt Clay:*** the assemblage removed from the kiln is of significance to the understanding of the production processes, and will sustain further scientific analysis.

6.3.8 ***Ironwork:*** the assemblage will contribute little to the understanding of the site and will sustain little further analysis beyond a consideration of its physical distribution throughout the site.

6.3.9 ***Stone Objects:*** the assemblage is of no significance to the understanding of the site, and will sustain no further analysis.

6.3.10 ***Glass:*** the assemblage is of no significance to the understanding of the site, and will sustain no further analysis.

6.3.11 ***Conclusion:*** the establishment of the Pothouse represents an important element in the initial stages of Lancaster's modern industrial history, and its importance should be seen in context of the economic growth of the city in the mid 18th century, as a result of expanding West Indies trade. The

Pothouse remains, and associated pottery assemblage, are of regional, if not national, importance.

6.3.12 At a local level, analysis of the site will add to the available body of knowledge of Lancaster, and make a contribution to an understanding, not only of the layout of the town and its changing appearance through time, but also make a significant contribution to any study of the population.

7. UPDATED PROJECT DESIGN

7.1 AIMS AND OBJECTIVES OF PROGRAMME OF ANALYSIS

7.1.1 ***Overall Aims:*** the overall aims are:

- to elucidate the development and chronological history of the site;
- to contribute to existing archaeological knowledge of post-medieval pottery (delftware) production in the North West;
- to relate the findings to the wider body of evidence for post-medieval pottery (delftware) production in the United Kingdom;
- to integrate the results with the findings of previous excavations in Lancaster.

7.1.2 ***Specific Objectives:*** the specific objectives are:

- to undertake further documentary research;
- to phase the shardruck, where possible, through analysis of the longitudinal tip-lines showing successive firings of different types of ware;
- to phase and date the other features and structures on the site;
- to enhance understanding of extramural activity in Lancaster, specifically the St George's Quay area;
- to study the post-medieval pottery, with a view to refining the stratigraphic sequence, characterising the nature of the pottery, and improving an understanding of locally produced wares;
- to provide appropriate study of, and comparison between, delftware pottery groups;
- to relate the evidence of pottery production to existing knowledge of such activity in the North West;
- to scientifically analyse the pottery wasters and fired materials.

7.2 PRESENTATION OF RESULTS

7.2.1 In accordance with the guidelines outlined in the English Heritage document MAP2 (English Heritage 1991b), it is proposed to present the results of the project in the following stages:

Publication Text: following the analysis and interpretation of the results of the project, a monograph will be prepared suitable for publication by the *Northern Ceramic Society*.

Project Archive: the completion of the project will result in an integrated project archive. The archive will be deposited with the Lancaster Maritime Museum.

7.3 PROGRAMME STRUCTURE

7.3.1 The post-excavation programme will be divided into the following stages:

- analysis;
- integration;
- synthesis;
- preparation of text and illustrative material;
- publication;
- archive deposition.

8. METHOD STATEMENT

8.1 INTRODUCTION

8.1.1 This statement relates the tasks outlined in the task list (*Appendix 4*) to the aims and objectives. The programme of work is tailored to address the specific objectives, which, when achieved, will secure the general objectives outlined in *Section 7.1* above.

8.2 START UP

8.2.1 ***Task 1:*** at the outset of the project a team meeting will be held to define and coordinate the programme of analysis.

8.2.2 ***Task 2:*** work would need to commence *immediately* on the processing of the pottery waste.

8.3 STRATIGRAPHIC ANALYSIS

8.3.1 ***Task 3:*** the stratigraphic sequence will form the contextual framework for an integrated report which, following the incorporation of artefactual data and information pertaining to the pottery, will facilitate the interpretation of the site.

8.3.2 The interpretative framework will focus on the resolution of the stratigraphic record into defined periods.

8.3.3 Detailed structural analysis will be undertaken on those features which are highlighted by the stratigraphic analysis as being of major interpretative importance to the site.

8.4 CERAMIC ANALYSIS

8.4.1 ***Task 4: Delftware Pottery, Biscuitware, and Saggers:*** the material will be fully catalogued, and a fabric series will be prepared which will be cross-referenced to that from other excavations; the dating of the assemblage will also be refined. A report will be presented in conventional fashion, and will be illustrated with examples of vessel types from significant stratigraphic groups. The report will include a brief discussion of any noteworthy features of the group, especially with regard to dating.

8.4.2 Specific questions may also need to be asked of the material, which may only be answerable by scientific methods. Thermoluminescence dating may be required to date the identified pottery and waster deposits; analysis of the different layers may identify the raw materials and firing regimes, using a

Scanning Electron Microscope; X-Ray Fluorescence or X-Ray Diffraction may also help identify the raw materials used (English Heritage 2006). Consideration should be given to this as part of the analysis.

8.4.3 ***Task 5: Other Pottery:*** the material will be fully catalogued, and fabric and illustrated form series will be prepared in conventional fashion and accompanied by a brief discussion of any noteworthy features of the group, especially with regard to dating and sources of supply.

8.4.4 All pottery will be assessed by Jo Dawson of Greenlane Archaeology, pending agreement.

8.5 OTHER FINDS

8.5.1 ***Task 6:*** identifiable, stratified or otherwise significant finds will be analysed. The quantity of material represented by these finds is so small as to render any attempt to group them by function or form unnecessary. An outline catalogue of ironwork will be prepared, with points of relevance discussed within a summary report. There will be no illustration requirement.

8.5.2 A catalogue will be prepared in standard format, and entries will include descriptions and basic comparanda. Exceptional objects will be accorded broader academic discussion; significant objects will be illustrated.

8.6 PUBLICATION

8.6.1 ***Task 7:*** following analysis and interpretation of the 2007 excavation results, a text will be prepared suitable for publication as a monograph by the *Northern Ceramic Society* or as a North Pennines Archaeology Ltd imprint. The report will address the research objectives of the project, presenting an integrated synthetic overview of the various analyses and, where appropriate, précis of the finds reports will be included, although more detailed data will remain in the archive.

8.6.2 ***The Structure of the Report:*** the following section represents a likely breakdown of the proposed publication. It should be noted, however, that this synopsis can only be regarded as a draft, based on the current understanding of the archive.

8.6.3 The text will be supported by a number of graphics, comprising line drawings and photographs, to illustrate the evidence, tables to summarise data and, where appropriate, interpretative phase drawings. The finished text will aim to present a high degree of integration between both finds categories and the structural/stratigraphical history of the site.

Summary 500 words

Acknowledgements	250 words
Introduction	
Project Location	500 words
Project Background	1000 words
Project Integration	750 words
Geology and Topography	450 words
Historical Background	2750 words
Archaeological Background	500 words
Research Aims	500 words
Location of Archive	100 words
Results	
Phase 1: pre-1754	450 words
Phase 2: The Pottery (1754-1785)	5000 words
The Kiln	1750 words
Phase 3: The Tenements (1785-1880)	1000 words
Phase 4: Lancaster Corporation and Demolition (1880-1938)	500 words
Pottery	
Delftware	5000 words
Biscuitware	2500 words
Saggers	1000 words
Other Pottery	500 words
Other Finds	500 words
Discussion	1000 words
Conclusion	
National Context and Importance	3500 words
Bibliography	
Appendix	
Type Series – Lancaster Pottery	
Total	30,000 words

9. RESOURCES AND PROGRAMMING

9.1 NAMED PROJECT TEAM

9.1.1 The team consists of a combination of internal NPAL staff, with an input from Jo Dawson, external consultant. The project will be managed by Frank Giecco.

Name	*Organisation*	*Tasks*
Frank Giecco	NPAL	Project Management
Laura Broughton	Scott Wilson	External Quality Control
Cat Peters	NPAL	Desk-Based Research
Matt Town	NPAL	Stratigraphic Analysis and Writing of Publication Text
Jo Dawson	Greenlane Archaeology	Pottery Analysis
Jo Beatty	NPAL	General Finds Analysis
Tony Liddell	NPAL	Illustrator
Site Assistants X 2	NPAL	Pottery Processing

9.2 MANAGEMENT STRUCTURE

9.2.1 NPAL operates a project management system. The team is headed by the Project Manager, who assumes ultimate responsibility for the implementation and execution of the Project Design, and the achievement of performance targets, be they academic, budgetary or scheduling.

9.2.2 The Project Manager may delegate specific aspects of the project to other key staff, who both supervise others and have direct input into the compilation of the report. They may also undertake direct liaison with external consultants and specialists who are contributing to the publication report, and the museum named as the recipient of the project archive. The Project Manager will define and control the scope and form of the post-excavation programme.

9.2.3 Communication between all concerned in the post-excavation programme is of paramount importance and it is essential that the specialists involved liaise closely in order that comparable data are obtained. To this end regular meetings and reviews are envisaged between all project staff and between particular groups of specialists. All information will be disseminated at regular intervals, thus ensuring that everyone is aware of current progress, strategy and thinking.

9.3 LIST OF TASKS

9.3.1 The project has been broken down into a series of summary tasks, which are set out in *Appendix 4*. In addition to the tasks outlined, there is some time allocated to general project monitoring and management. As these tasks are on-going and are not allocated to any specific days, they do not appear on the task sheet or the Gantt chart (*Appendix 5*).

9.3.2 ***Management tasks:*** the management and monitoring allocations include project monitoring, advice and co-ordination, and problem-solving.

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Appendix 1: Original Excavation Project Design

APPENDIX 2: SUMMARY CONTEXT LIST

Table 1: Summary Context List

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
100		Concrete Structure									1	
101		Asphalt Deposit									1	
102	2	Concrete Floor			1							
103	2,3,7,8	North-south Wall	1									
104	3	Fireplace		1								
105	1,2,6,7	East-west Wall			1							
106	2,7	Doorway			1							
107	1,2	Timber Beam			1							
108	1,2	North-south Wall			1							
109	1	Stone Steps			1							
110	1	Brick Structure			1							
111	1	Rubble				1						
112	7	Wall	1		1							
113	1,6,10,13	North-south Wall	1									
114	6,7	Clay Deposit								1		
115	2	Rubble				1						
116	8,11	Blocking Wall		1								
117	6,10	East-west Wall	1									
118	10,11,13	East-west Wall		1								
119	13	Wall	1									
120	14	Kiln Deposit					1					
121	3,4,8	East-west Wall	1									
122	3,4	Brick Wall		1								
123	3,4	Chimney Base		1								
124	3	Cobbled Surface	1									

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
125	4	Cobbled Surface	1									
126	4,5,9	North-south Wall	1									
127	3	Rubble				1						
128	4	Rubble				1						
129	8,12,14,15,16	North-south Wall	1									
130	8	Sand Deposit							1			
131	8	Silt Deposit							1			
132	8	Flagged Floor		1								
133	8	Wall		1								
134	8	Socketed Stone		1								
135	8	Cobbled Surface		1								
136	8,14	East-west Wall		1								
137	8	Rubble				1						
138	8	Mortar Deposit							1			
139	8,.11,13,14	North-south Wall	1									
140	8,14	Silt Deposit							1			
141	11	Cobbled Surface	1									
142	Yard	Shardruck Deposit						1				
143	14, yard	Stone Kerb		1								
144	6	Cobbled Surface	1									
145	7	Cobbled Surface	1									
146	6,7	Clay Deposit					1					
147	6	Buttress			1							
148	6,7	Privy Wall			1							
149	7	Stone Setting			1							
150	6	Rubble				1						
151	7	Rubble				1						
152	6,7	Dividing Wall			1							

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
153	10,11	Corridor Structure			1							
154	10	Brick Floor		1								
155	13	Brick Floor		1								
156	10	Rubble				1						
157	11	Rubble				1						
158	13	Rubble				1						
159	Yard	Shardruck Deposit						1				
160	Yard	Cobbled Surface		1								
161	Yard	Wall		1								
162	Yard	Concrete Structure			1							
163	Yard	Wall		1								
164	Yard	Cobbled Surface		1								
165	Yard	Asphalt Deposit									1	
166	14	Rubble				1						
167	14	Clay Deposit						1				
168	14	Brick Kiln Floor	1									
169	14	Well		1								
170	14	Services			1							
171	14	Clay Lining	1									
172	14	Clay Lining	1									
173	14	Brick Kiln Wall	1									
174	14	Brick Kiln Wall	1									
175	14	Sandstone Foundation	1									
176	14	Sandstone Foundation	1									
177	14	South-east Kiln Wall	1									
178	14	North-east Kiln Wall	1									
179	14	North-west Kiln Wall	1									
180	14	Flue	1									

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
181	14	Flue	1									
182	14	Cobbled Surface	1									
183	14	Cobbled Surface	1									
184	14	Cobbled Surface	1									
185	14	Wall	1									
186	8,14	Brick Structure	1									
187	8,14	Brick Structure	1									
188	8,14	Wall	1									
189	8,14	Wall	1									
190	8,14	Wall	1									
191	8,14	Cobbled Surface	1									
192	8,14	Brick and Cobbled Surface	1									
193	Yard	Cobbled Surface							1			
194	Yard	Fill of 195							1			
195	Yard	Possible Pit							1			
196	Yard	Black Deposit							1			
197	Yard	Sand Deposit							1			
198	Yard	Mortar Deposit							1			
199	Yard	Mortar Deposit							1			
200	Yard	Silt Deposit							1			
201	Yard	Mortar Deposit						1				
202	Yard	Dump of Flint						1				
203	Yard	Sagger Deposit						1				
204	Yard	Clay Deposit						1				
205	Yard	Silt Deposit						1				
206	Yard	Brick Deposit						1				
207	Yard	Red Deposit						1				
208	Yard	Mortar Deposit						1				

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
209	Yard	Grey Deposit						1				
210	Yard	Sagger Deposit						1				
211	Yard	White Clay Deposit						1				
212	Yard	Pink Clay Deposit						1				
213	Yard	Brown Clay Deposit						1				
214	Yard	Grey Clay Deposit						1				
215	Yard	Brown Clay Deposit						1				
216	Yard	Grey Clay Deposit						1				
217	Yard	Wall	1									
218	Yard	Wall	1									
219		Shardruck Deposit						1				
220		Shardruck Deposit						1				
221	16	Rubble				1						
222	16	Soil Deposit							1			
223	16	Soil Deposit							1			
224	16	Garden Wall		1								
225	16	Levelling Deposit							1			
226	16	Levelling Deposit							1			
227	16	Levelling Deposit							1			
228	16	Levelling Deposit							1			
229	16	Levelling Deposit							1			
230	13	Mortar Deposit								1		
231	13	Natural					1					
232	13	Dark Deposit								1		
233	14	Sand Deposit						1				
234	14	Brick Kiln Floor	1									
235	14	Sand Deposit						1				
236	14	Kiln Base	1									

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
237	Yard	Shardruck Deposit						1				
238	5,15	Silt Deposit							1			
239	5,15	Sand Deposit							1			
240	5	North-south Brick Structure			1							
241	5	East-west Brick Structure			1							
242	5	Rubble				1						
243	5	Chimney Base		1								
244	5,9	East-west Wall			1							
245	5,9	North-south Wall	1									
246	9	Concrete Floor			1							
247	9,12	Rubble				1						
248	9,12	East-west Wall			1							
249	9,12	Foundation Deposit								1		
250	12	Concrete Floor			1							
251	12	Brick Structure			1							
252	12	Dividing Wall			1							
253	12	Drain			1							
254	12	East-west Dividing Wall			1							
255	12	Concrete Floor			1							
256	12	Brick Structure			1							
257	12	Tiled Floor			1							
258	12	Brick Structure			1							
259	12,15	East-west Wall		1								
260	15	Cobbled Surface		1								
261	15,16	East-west Wall	1									
262	12,15	North-south Wall	1									
263	15	Fireplace		1								

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
264	16	North-south Wall		1								
265	15	Marsh Deposit					1					
266	15	Rubble				1						
267	Eastern Area	Shardruck Deposit						1				
268	Eastern Area	Shardruck Deposit						1				
269	Eastern Area	Shardruck Deposit						1				
270	Eastern Area	Shardruck Deposit						1				
271	Eastern Area	Shardruck Deposit						1				
272	Eastern Area	Shardruck Deposit						1				
273	Eastern Area	Shardruck Deposit						1				
274	Eastern Area	Shardruck Deposit						1				
275	Eastern Area	Shardruck Deposit						1				
276	Eastern Area	Shardruck Deposit						1				
277	Eastern Area	Shardruck Deposit						1				
278	Eastern Area	Shardruck Deposit						1				
279	Eastern Area	Shardruck Deposit						1				
280	Eastern Area	Shardruck Deposit						1				
281	Eastern Area	Shardruck Deposit						1				
282	Eastern Area	Shardruck Deposit						1				

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
283	Eastern Area	Shardruck Deposit						1				
284	Eastern Area	Shardruck Deposit						1				
285	Eastern Area	Shardruck Deposit						1				
286	Eastern Area	Shardruck Deposit						1				
287	Eastern Area	Shardruck Deposit						1				
288	Eastern Area	Shardruck Deposit						1				
289	Eastern Area	Shardruck Deposit						1				
290	Eastern Area	Shardruck Deposit						1				
291	Eastern Area	Shardruck Deposit						1				
292	Eastern Area	Shardruck Deposit						1				
293	Eastern Area	Shardruck Deposit						1				
294	Eastern Area	Shardruck Deposit						1				
295	Eastern Area	Shardruck Deposit						1				
296	Eastern Area	Shardruck Deposit						1				
297	Eastern Area	Shardruck Deposit						1				
298	Eastern Area	Shardruck Deposit						1				
299	Eastern Area	Shardruck Deposit						1				
300	Eastern	Shardruck Deposit						1				

Context No.	Room	Description	Structures (Phase 2: 1754-1785)	Structures (Phase 3: 1785 to 1880)	Structures (Phase 4: 1880 to 1938)	Demolition (1938)	Deposits (Phase 1: Marsh Deposits pre-1754)	Pottery Deposits (Phase 2: 1754-1785)	Deposits (Phase 3: 1785 to 1880)	Deposits (Phase 4: 1880 to 1938)	Modern Deposits and Structures	Totals
	Area											
301	Eastern Area	Shardruck Deposit						1				
302	Eastern Area	Shardruck Deposit						1				
303	Eastern Area	Shardruck Deposit						1				
304	Eastern Area	Shardruck Deposit						1				
305	Eastern Area	Shardruck Deposit						1				
306	Eastern Area	Shardruck Deposit						1				
307	Eastern Area	Garden Soil							1			
308	Eastern Area	Wall		1								
Totals			44	25	29	15	4	64	22	4	3	210

APPENDIX 3: FINDS LIST

Table 2: Unprocessed Pottery by Tub and Bag

	Number of 10L Tubs					Number of Bags				
Context No.	Saggers	Delftware	Biscuit Ware	Mixed	Notes	Saggers	Delftware	Biscuit Ware	Mixed	Notes
114									1	ceramic bottle sherds >60%
120	12			1					3	One bag of flint containing seven pieces. One piece of lead (Pb), possibly a nail. Small piece of colbolt.
127				0.5	contains <20sherds of porcelein, pot and glass from both bottle and window				1	
128									2	Bottle glass. Delftware sherds.saggers.
138									2	Delftware sherds <10. biscuit ware 2 sherds. Saggers.
142	11			4	contained some clay pipe stems, glass, both bottle and window, and shell					

	Number of 10L Tubs					Number of Bags				
Context No.	**Saggers**	**Delftware**	**Biscuit Ware**	**Mixed**	**Notes**	**Saggers**	**Delftware**	**Biscuit Ware**	**Mixed**	**Notes**
145									2	single button, possibly brass or copper. Glass marble.
150									1	2 clay pipe stems. Window glass. Nail (Fe)
151									1	contains a large nail (Fe)
153									1	saggers 5 sherds. Pot 3 sherds inc. Handle and base
156									1	delftware sherds <20. biscuit ware sherds. Saggers.shell. Clay pipe stem.
157						1			1	
158									1	three shells, clay pipe stem, a button and multiple biscuit ware sherds.
159				1.5						
166				1	Contained clay pipe stems, window glass and a marble				2	Kiln floor residue
167				1	kiln floor residue					

	Number of 10L Tubs					Number of Bags				
Context No.	Saggers	Delftware	Biscuit Ware	Mixed	Notes	Saggers	Delftware	Biscuit Ware	Mixed	Notes
203	1									
206									1	
209									1	Biscuit ware sherds<5
210									1	Saggers-possible yellow pigment:see (220)
212									1	large percentage of saggers
213									1	
214									1	
215									1	
216									1	
219				2					1	
220				0.3	Biscuit ware. Saggers				1	possible manufacturing product, yellow pigment
233								1		semi glazed base
237									1	
238									1	Delftware sherds <10. modern ceramic .

	Number of 10L Tubs					Number of Bags				
Context No.	Saggers	Delftware	Biscuit Ware	Mixed	Notes	Saggers	Delftware	Biscuit Ware	Mixed	Notes
239									1	single delftware sherd. single piece of shell. single clay pipe stem.
267				2						
268				1						
269				1						
270				1						
271				1						
272				1						
273				1						
274				1						
275				2						
276				1						
277				1						
280									1	
281									1	
282									1	
283									1	
284									1	
285									1	
287									1	
286									1	contains possible yellow pigment: see

	Number of 10L Tubs					Number of Bags				
Context No.	Saggers	Delftware	Biscuit Ware	Mixed	Notes	Saggers	Delftware	Biscuit Ware	Mixed	Notes
										(210) (220)
288									1	
289									1	
293				1						
303				1						
U/S			0.8							
U/S	1									
U/S				2						

Table 3: Unprocessed Pottery Waste in Tonnes

Context No.	Weight of Sample	Material
142	15 tonnes	Mixed pottery and saggers in a soil matrix
159	5 tonnes	Mixed pottery and saggers in a soil matrix
219	5 tonnes	Mixed pottery and saggers in a soil matrix
220	5 tonnes	Mixed pottery and saggers in a soil matrix

Table 4: Processed Pottery by Tub

	Number of 10L Tubs				
Context No.	Saggers	Delftware	Biscuit Ware	Mixed	Notes
120	6.5		0.1		23 sherds of biscuit ware
142	2.5	5	5.5		
219	0.3	1	0.3		

Table 5: Processed Finds by No of Sherds

Context No.	Number of Sherds	Material
120	1	Vitrified kiln waste (large chunk)
142	4	clay Pipe stem
142	1	Clay pipe, inscribed
142	2	Window Glass
142	2	flint
142	1	coin
142	9	Decorated Biscuit ware
142	22	Sagger pegs
142	10	Pot
142	1	Tile
142	1	Stone, possibly limestone
142	1	shell, mussel

Context No.	Number of Sherds	Material
219	1	Clay Pipe stem
219	1	Decorated Pot sherd
219	4	Sagger pegs
219	3	Brick material