indicate the use of lime in privies. Also, the trash deposits are more acidic than expected, but this can be explained by the presence of horse manure in one of the trash deposits (Feature 19 Area A). Though the number of samples was small, it appears that no significant difference in the ph of these features and deposits is present. We cannot say if this type of analysis is useful in distinguishing between land use types, however, as there appears to be no difference between commercial/residential and strictly residential properties.

Analysis Results

Artifact Patterns

The Field Methods and Results Chapter identified eleven pre-industrial and ten industrial deposits that could potentially provide tests for the project research design. A number of secondary fill deposits were eliminated from further consideration in that chapter, as were contexts that yielded samples too small for the type of analyses employed on this project. Detailed chronological analysis of the twenty-one remaining deposits presented earlier in this chapter indicated that two additional deposits had to be dropped from further analysis. Those deposits, which included a pre-industrial deposit from Area A (Feature 28, ERA49) and an industrial deposit from Area H (Feature 1, ERH4), were found to contain mixed artifacts from two or more occupation episodes. Thus ten pre-industrial and nine industrial deposits remain that can yield the type of information dictated by the project research design.

The pre-industrial and industrial deposits can be further subdivided for ease of discussion. The pre-industrial deposits are composed of seven occupation levels (also called topsoils, midden deposits, and, - in the case of Area B - marsh soil deposits) and three features. The industrial deposits are primarily features, with three occupation levels and six features. All of the pre-industrial occupation levels can be grouped for ease of discussion. The industrial period occupation levels for Areas A and H can also be grouped, although the deposit that relates to the Dowdall occupation in Area A (ER A19Z1) will be retained with the other Dowdall features (15, 17, and 25), since that occupation level can be firmly attributed to the Dowdall residency.

The occupation levels attributable to the pre-industrial period will be presented in chronological order, based on MCD's. Those deposits, while valuable for considerations of artifact patterning, have little to offer in terms of sophisticated artifact analysis. Instead, the purpose of exploring those deposits will be to determine if functionally aligned artifact patterns can be discerned, and how those patterns relate to patterns achieved from features. The artifact patterns for the pre-industrial features will be discussed following presentation and discussion of the occupation levels. The same sequence of presentation and discussion will be followed for the industrial deposits.

Pre-Industrial Period Occupation Levels

The pre-industrial occupation levels were, for the most part, products of long-term trash deposition in "backyard" settings. The vast majority of the

TABLE 28. Pre-Industrial Period Occupation Levels From Areas B and E

Group	Area B Marsh Soil Deposits #	%	Area E Topsoil from Market St. Lot #	%	Area E Topsoil from Second St. Lot #	%
KITCHEN						
Ceramics	906	74.94	810	75.99	1847	71.76
Spirit Bottles	26	2.15	39	3.67	114	4.43
Case Bottles						
Tumblers						
Pharmaceutical						
Miscellaneous Glassware	2	0.17	19	1.78	31	1.20
Tableware	1	0.08				
Kitchenware			1	0.09		
Bottle Glass*	62	5.13	11	1.03	70	2.72
TOTAL	997	82.47	880	82.55	2062	80.11
ARCHITECTURE						
Window Glass	123	10.17	97	9.10	288	11.19
Nails	58	4.80	71	6.66	162	6.29
Spikes						
Construction Hardware						
Door Lock Parts						
TOTAL	181	14.97	168	15.76	450	17.48
FURNITURE	0	0.00	2	0.19	1	0.04
ARMS						
Ball, Shot, Sprue						
Gunflints, Spalls					1	0.04
Gun Parts						
TOTAL	0	0.00	0	0.00	1	0.04
CLOTHING						
Buckles					1	0.04
Thimbles						
Buttons	1	0.08	2	0.19	19	0.74
Straight Pins	15	1.24				
Hook & Eye					1	0.04

(continued)

TABLE 28. (continued)

Group	Area B Marsh Soil Deposits #	%	Area E Topsoil from Market St. Lot #	%	Area E Topsoil from Second St. Lot #	%
CLOTHING (continued)						
Bale Seals					1	0.04
Glass Beads						
Scissors						
TOTAL	16	1.32	2	0.19	22	0.86
PERSONAL						
Coins						
Keys	2	0.17			1	0.04
Miscellaneous						
TOTAL	2	0.17	0	0.00	1	0.04
TOBACCO PIPE	11	0.91	12	1.13	29	1.13
ACTIVITIES						
Construction Tools						
Farm Tools						
Toys						
Fishing Gear						
Storage Items						
Horse Tack						
Miscellaneous Hardware	2	0.17	1	0.09	7	0.27
Other			1**	0.09	1	0.04
Military Items						
TOTAL	2	0.17	2	0.19	8	0.31
GRAND TOTAL	1209		1066		2574	

*includes spirit, case, and pharmaceutical after 1840
**kiln furniture

artifacts recovered from those deposits consisted of highly fragmented items that had been trampled into backyards by foot traffic. It was difficult to tabulate meaningful time spans for most of these deposits as they appear to have received sporadic trash discard, and they were more prone to pick up later contaminants from disturbance than features merely because of their horizontal extent. The artifact patterns for the pre-industrial occupation levels that follow are presented in chronological order based on mean ceramic dates. It should be noted that those MCD's do not conform to potential mean deposition dates in all cases because of the problems outlined above. A discussion of the potential date range of each deposit was included in the Field Methods and Results Chapter, but will be summarized in the following paragraphs for easy reference.

The artifact patterns presented in Table 28 were extracted from occupation levels excavated within Areas B and E. The Area B marsh soil deposits were the lowest culture bearing stratigraphic level in Area B, and are directly relateable to the Jones family occupation. The Jones family was present on the lot by 1763, and stratigraphic evidence above the marsh soil deposits indicates that that occupation level was sealed by about 1800. This means that the potential median date for the Area B marsh soil deposits would be 1781.5, or 9.7 years later than the MCD.

Much closer convergence was achieved between the MCD and potential median deposition date for the Market Street Lot topsoil within Area E. The historical record indicates that occupation on that lot began by 1747, and study of the collections indicates that deposition in the topsoil stratum ceased by about 1805. The MCD of 1774 for that deposit thus agrees with the project median date of 1776. A seven year disparity was noted between the MCD for the Area Second Street Lot topsoils and the projected median date. The historical and archaeological evidence combine to suggest a depositional span of ca. 1750 to ca. 1800 for that deposit. The median occupation date of 1775 is seven years earlier than the MCD of 1782.

The other pre-industrial occupation levels present additional dating problems. The Area D occupation level was deposited after 1786 (when the first house was constructed on the lot), but an adequate terminus post quem date could not be derived due to the highly fragmentary nature of the artifacts. The MCD of 1804.5 is thus a rough guide to the chronological placement of this deposit. The Area H pre-industrial occupation level presented similar problems. Again, the MCD of 1807.9 serves as a rough chronological indicator for this occupation level. Area B occupation level ER B1E presents fewer problems. The MCD of 1808.5 is probably an accurate chronological placement for that occupation level, as study of the strata above and below that level indicates that ER B1E was open for a fairly brief period. That level is known to post-date 1800, and to pre-date 1844 (when the Jones family left the lot). The lower topsoil deposits from Area A can not be so precisely dated. It is assumed that those deposits post-date the initial development of the lot in 1789. The end date of deposition, however, spans the period to at least 1848, as items attributable to the Joseph Dowdall occupation were found resting on the top of that occupation level. The Area A lower topsoil deposits were assigned to the pre-industrial period because it appears that most of the content of this occupation level was deposited early in the

occupation history of the lot. That interpretation was supported by the 1810.5 MCD achieved for that occupation level.

The artifact patterns achieved for the pre-industrial occupation levels (Table 28 and 29) are remarkably similar. The total Kitchen Group percentages range from 73.7% to 90.2%, while the Architecture Group percentages range from 9.2% to 23.2%. The highest percentage of Kitchen Group artifacts (and lowest Architecture) was achieved from context ER B1E in Area B. That occupation level yielded a sample of 328 artifacts, and was thought to represent deposition of trash over an abbreviated time span. The total sample size for that context nearly matched the sample extracted from the lower topsoils from Area H 422 items), but again the mechanism of deposition was somewhat different. The lowest Kitchen Group (and highest Architecture) percentage was recovered from the topsoils of Area D. The sample size in that case reached 1401 items, but the excavation units that yielded those artifacts were placed immediately adjacent to the wall of a structure. The placement of those units probably distorted the content of the overall occupation level within Area D, and thus casts doubt on the reliability of the patterns extracted from that context.

If ERB1E of Area B and the topsoils of Area D are excluded, the pattern charts results in an even tighter range of Kitchen Group and Architecture Group percentages for the pre-industrial occupation levels. The Kitchen Group percentages then range from a low of 79.1% to a high of 82.9%. The Architecture Group percentages then range from 12.3% to 19.2%.

The Kitchen Group

The Kitchen Group artifacts recovered from the pre-industrial occupation levels consisted primarily of ceramics and glass. The ceramic and glass samples were, in all cases, too fragmentary to sustain minimum vessel count determinations. Further, a large amount of the bottle glass could not be assigned to wine, case or pharmaceutical bottle with a degree of certainty, and was therefore listed as simply "bottle glass". The same problem was encountered in differentiating tumbler glass from glassware, and almost all table glass was thus listed under "miscellaneous glassware". Relatively few tableware and kitchenware artifacts were recovered from the pre-industrial occupation levels.

The relative percentages of ceramics and bottle glass within the seven occupation levels (Table 30) display remarkable consistency. The percentages of ceramics within the overall Kitchen Groups ranges from 89.6% to 95.9% in all but one example. The Lower Topsoils of Area H varied from the other six examples, and displayed 72.6% ceramics and 23.1% bottle glass. The percentages of ceramics and glass from that context are similar to the ceramic/glass percentages derived from a mid-nineteenth century deposit on the Washington Civic Center Site (Garrow 1982:71) and to examples cited by South (1977:126) on eighteenth century sites. The variant percentages noted for Area H Lower Topsoils are difficult to evaluate with available information, but may simply mean that slightly different discard mechanisms were followed on that site. It was noted within the Washington Civic Center Site (Garrow 1982:153) that percentages of ceramics to bottle glass varied greatly in relation to location of unit to structure, but it was also noted in that report that the

TABLE 29. Pre-Industrial Period Occupation Levels From Areas D, H, B, and A

Group	Area D All Topsoils #	%	Area H Lower Topsoils #	%	73S/109E Level 5 Area B (ERBIE) #	%	Area A Lower Topsoils #	%
KITCHEN								
Ceramics	932	66.52	254	60.05	284	86.59	6989	73.10
Spirit Bottles	34	2.43	67	15.84	9	2.74	142	1.49
Case Bottles								
Tumblers							1	0.01
Pharmaceutical	2	0.14						
Miscellaneous Glassware	25	1.78					89	0.93
Tableware					1	0.30	1	0.01
Kitchenware			15	3.55			3	0.03
Bottle Glass*	39	2.78	14	3.31	2	0.61	344	3.60
TOTAL	1032	73.66	350	82.74	296	90.24	7569	79.17
ARCHITECTURE								
Window Glass	234	16.70	40	9.46	15	4.57	753	7.88
Nails	91	6.50	12	2.84	15	4.57	1083	11.33
Spikes								
Construction Hardware								
Door Lock Parts							2	0.02
TOTAL	325	23.19	52	12.29	30	9.15	1838	19.22
FURNITURE	1	0.07	0	0.00	0	0.00	2	0.02
ARMS								
Ball, Shot, Sprue								
Gunflints, Spalls								
Gun Parts								
TOTAL	0	0.00	0	0.00	0	0.00	0	0.00
CLOTHING								
Buckles			3	0.71			1	0.01
Thimbles								

TABLE 29. (continued)

Group	Area D All Topsoils #	%	Area H Lower Topsoils #	%	73S/109E Level 5 Area B (ERBIE) #	%	Area A Lower Topsoils #	%
CLOTHING (continued)								
Buttons	1	0.07			1	0.30	15	0.16
Straight Pins								
Hook & Eye								
Bale Seals								
Glass Beads								
Scissors								
TOTAL	1	0.07	3	0.71	1	0.30	16	0.17
PERSONAL								
Coins							1	0.01
Keys								
Miscellaneous			1	0.24			1	0.01
TOTAL	0	0.00	1	0.24	0	0.00	2	0.02
TOBACCO PIPE	33	2.36	2	0.47	0	0.00	67	0.70
ACTIVITIES								
Construction Tools							1	0.01
Farm Tools							3	0.03
Toys								
Fishing Gear								
Storage Items								
Horse Tack							46	0.48
Miscellaneous Hardware	9	0.64	15	3.55				
Other					1	0.30	17	0.18
Military Items								
TOTAL	9	0.64	15	3.55	1	0.30	67	0.70
GRAND TOTAL	1401		423		328		9561	

*includes spirit, case, and pharmaceutical after 1840

TABLE 30. Percentage of Kitchen Group Classes Among the Pre-Industrial Occupation Level Contexts

Artifact Class	B Marsh Soil Deposits		E Market St. Lot		E Second St. Lot	
	#	%	#	%	#	%
Ceramics	906	90.87%	810	92.05%	1847	89.57%
All Bottle Glass	88	8.83%	50	5.68%	184	8.92%
Tumblers	0	0.00%	0	0.00%	0	0.00%
Glassware	2	0.20%	19	2.16%	31	1.50%
Tableware	1	0.10%	0	0.00%	0	0.00%
Kitchenware	0	0.00%	1	0.11%	0	0.00%
Total	997	100.00%	880	100.00%	2062	99.99%

Artifact Class	D Topsoils		H Lower Topsoils		B 73S/109E Level 5		A Lower Topsoils	
	#	%	#	%	#	%	#	%
Ceramics	932	90.31%	254	72.57%	284	95.95%	6989	92.34%
All Bottle Glass	75	7.27%	81	23.14%	11	3.72%	486	6.42%
Tumblers	0	0.00%	0	0.00%	0	0.00%	1	0.01%
Glassware	25	2.42%	0	0.00%	0	0.00%	89	1.18%
Tableware	0	0.00%	0	0.00%	1	0.34%	1	0.01%
Kitchenware	0	0.00%	15	4.29%	0	0.00%	3	0.04%
Total	1032	100.00%	350	100.00%	296	100.01%	7569	100.00%

percentage representation of bottle glass increased at the expense of ceramics through time.

The Architecture Group

The artifact classes that compose the pre-industrial occupation level Architecture Groups exhibit less internal consistency than the Kitchen Group classes (Table 31). Window glass predominates in all contexts except the Area A lower topsoils. Nails represent 58.9% of the Area A lower topsoils Architecture Group, while window glass accounts for 41%. Perhaps it is significant that that same context yielded two door lock parts, as that was the only example in which Architecture artifacts other than window glass and nails were present. Based on the nail percentages, Area A lower topsoils doubtless included one or more outbuilding sites, while the segments tested within the other contexts apparently lacked such structures. Overall, the Architecture Groups reflect repair versus construction or demolition activities within the tested backyards.

The Architecture Group class percentages recovered from the pre-industrial occupation levels are consistent with the Architecture Group class percentages recovered from a mid-nineteenth century context on the Washington Civic Center Site (Garrow 1982:101). Those percentages are at variance with nail to other Architecture Group percentages cited by South (1977:115), as he found that the sites that comprised his original Carolina Artifact Pattern contained Architecture Groups with an average "ratio" of 82.8% nails. The differences between South's examples and the discussed contexts from Wilmington Boulevard and Washington, D.C. probably stem from fundamental differences in rural and urban areas. Window breakage is probably somewhat more frequent in urban areas due to greater vandalism or other causes than in much less intensively populated rural areas.

Furniture Group

A total of six Furniture Group Artifacts were recovered from the pre-industrial occupation levels. The Area E Second Street Lot and the Area A lower topsoils each yielded a single brass furniture tack. The Area E Market Street Lot contained two brass drawer pulls, while the Area D topsoil deposits included a "tear drop" dresser handle. The remaining Furniture Group artifacts included a decorative escutcheon plate from the Area A lower topsoils.

It is evident that few Furniture Group artifacts were deposited in the pre-industrial backyard areas of Wilmington Boulevard project area. Further, the Area B marsh soil deposits totally lacked Furniture Group artifacts, despite the fact that it was deposited during the residency of a known cabinet maker.

Arms Group

The pre-industrial occupation levels yielded a single Arms Group artifact. That item was a partially completed gun flint from the Area E Second Street Lot. The evidence gained for the subsistence patterns of the residents of the project area will be discussed in a later chapter, but at this point it is sufficient to state that the pre-industrial occupation levels did not

TABLE 31. Percentage of Architecture Group Classes Among the Pre-Industrial Occupation Level Contexts

Artifact Class	B Marsh Soil Deposits #	B Marsh Soil Deposits %	E Market St. Lot #	E Market St. Lot %	E Second St. Lot #	E Second St. Lot %
Window Glass	123	67.96%	97	57.74%	288	64.00%
Nails	58	32.04%	71	42.26%	162	36.00%
Spikes	0	0.00%	0	0.00%	0	0.00%
Construction Hardware	0	0.00%	0	0.00%	0	0.00%
Door Lock Parts	0	0.00%	0	0.00%	0	0.00%
Total	181	100.00%	168	100.00%	450	100.00%

Artifact Class	D Topsoils #	D Topsoils %	H Lower Topsoils #	H Lower Topsoils %	B73S/109E Level 5 #	B73S/109E Level 5 %	A Lower Topsoils #	A Lower Topsoils %
Window Glass	234	72.00%	40	76.92%	15	50.00%	753	40.97%
Nails	91	28.00%	12	23.08%	15	50.00%	1083	58.92%
Spikes	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Construction Hardware	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Door Locks Parts	0	0.00%	0	0.00%	0	0.00%	2	0.11%
Total	325	100.00%	52	100.00%	30	100.00%	1838	100.00%

yield sufficient Arms Group artifacts to indicate that hunting was an important activity in that neighborhood at that time in Wilmington.

Clothing Group

Sixty-one Clothing Group artifacts were recovered from the pre-industrial occupation levels. All of the Clothing Group artifacts were buttons except for a brass hook and eye and a cylindrical glass bead from the Second Street Lot of Area E; three fragments of a gilt decorated brass buckle from the Area H lower topsoil deposits; and fifteen brass straight pins (all examples have wrapped head, and three are gold plated) from the marsh deposits of Area B. The buttons included bone, brass, and shell examples. The Clothing Group artifacts contain little interpretive value because of the small samples present.

Personal Group

Six items assignable to the Personal Group were present among the pre-industrial occupation levels. Those items included a fragmentary and a complete metal key from the Area B marsh deposits; an Indian head penny (date indistinct) from the Area E Second Street Lot; the blade of a clasp knife from the Area H lower topsoils; and a possible coin and a mirror fragment from Area A lower topsoils. The Indian head penny from Area E does post-date the pre-industrial period, and is probably evidence of a localized later disturbance that penetrated the occupation level. Again, too few artifacts were present in this artifact group to support more than a simple list of contents.

Tobacco Pipe Group

The sample sizes of the Tobacco Pipe Group ranged from 0 specimens in ER B1E to 67 in the Area A lower topsoils. The sample size in each case was too small to support pipestem dating, and in any event most of the contexts were probably too late for pipestem dating to have worked.

Activities Group

The Activities Group contained the greatest range of items of any Group within the pre-industrial occupation levels. This is understandable, as the Activities Group functions as a "miscellaneous" category.

The Area B marsh soil deposits yielded two Activities Group artifacts. Both artifacts were wire fragments, and one was brass with gold plating.

The Area E Market Street Lot also yielded two Activities Group items. One artifact was a tapered piece of copper that may have served as a hook of some type. The other item was an unglazed redware hand molded kiln spacer that was doubtless related to Wilmington's documented redware industry.

Eight Activities Group artifacts were recovered from Area E, Second Street topsoils. Those items included a corroded copper sheet, two oxidized iron sheets, two rectangular metal bands, a metal rivet, one piece of unidentified metal, and a graphite pencil lead. The pencil lead would have been included

under the Personal Group following South (1977), but was placed under Activities to be consistent with Garrow (1982).

The Area D topsoils also yielded nine artifacts. These included one piece of iron sheet metal, three rectangular metal bands, one metal rod, two additional pieces of sheet metal, a glazed terra cotta drain pipe, and one iron or steel band.

Fifteen Activities Group items were recovered from the Area H lower topsoils. These included eight corroded iron tubes that ranged from a quarter inch to three quarters inch long, a heavily oxidized sheet metal fragment, three iron wire fragments, two fragmentary brass springs, and one unglazed red body drainage tile.

Context ER B1E from Area B yielded a single Activities Groups artifact. That artifact was a slate pencil fragment.

The Area A lower topsoils contained the greatest number of Activities Group artifacts among the pre-industrial occupation levels. The sixty-seven items recovered from this context included: one chisel; two clay and one porcelain marbles; fifteen fragments of iron wire; twenty-two pieces of sheet metal, one piece of sheet lead; two bolts; one wood screw; three copper plates; one piece of copper wire; one copper chain; a decorative bone finial; and sixteen slate pencils.

There is relatively little that can be said about the pre-industrial occupation level Activities Groups. The Area A lower topsoils returned the largest sample from this group, but that is hardly surprising given the overall size of the Area A sample. Almost all of the Activities Group artifacts can be attributed to domestic activities, and the piece of kiln furniture from the Area E Market Street Lot was the only recovered artifact that could be linked to a known Wilmington industry.

Pre-Industrial Period Features

The Field Methods and Results Chapter discussed three features dating to the pre-industrial period that appeared to have potential for yielding data germane to the project research design. The earliest of those features was excavated by Mid-Atlantic Archaeological Research, Inc. (MAAR) (Thomas et al 1980: III-70) during the testing phase on the blocks. That feature was located within Area E, and yielded a MCD of 1783.6. The second oldest pre-industrial feature was a brick lined cistern excavated during the data recovery phase in Area D. That feature, which had been utilized as a privy in its terminal stage, yielded a MCD of 1802.3. The third pre-industrial feature, a barrel privy, was excavated in Area A during the data recovery phase. That feature produced a MCD of 1811.6

The MAAR feature (Thomas et al 1980:III-70), designated Feature 2 in their system, appears to have been associated with the Market Street Lot that yielded the occupation level discussed in an earlier section of this report. If that association is valid, that would mean that the privy was filled during the Broom family occupation. Jacob Broom was a signer of the Constitution, and was thus a figure of national historical significance. The Broom