

**Appendix V**  
**Oyster Shell Analysis**

analysis and tabulation  
completed by

Keith Doms  
University of Delaware  
Center for Archaeological Research

The following tables contain the results of the shell analysis arranged by provenience groups. The analysis was completed by Keith Doms of the University of Delaware Center for Archaeological Research. Several variables were analyzed for information about the sources and use of the shellfish. The salinity regime in which the oysters lived was determined by estimating the proportions of small and large parasite boreholes. When no holes are present the shell is assigned to Salinity Regime I, where the salinity is below 10 parts-per-trillion for about half the year and rarely above 20 parts-per-trillion. If only small boreholes are present, the salinity is below 10 ppt for about one-fourth of the year, 15 ppt for about half of the year, and occasionally above 20 ppt, and Salinity Regime II is indicated. If large boreholes are present, but small boreholes are more common, the oyster lived in water with salinity that was occasionally below 15 ppt, but above 20 ppt for one-fourth to one-half of the year. In that case, Salinity Regime III is indicated. Salinity Regime IV is assigned when large boreholes are as common or more common than valves with small boreholes, and a water environment with salinity only rarely below 15 ppt and above 20 ppt for most of the year is indicated.

Season of death was determined by microscopic examination of the growth rings on the hinge area of the shells, and mechanical damage or the lack of it on the shells allows an evaluation of the techniques used to open the oyster. Shell geometry allows an evaluation of the substrate on which the animal lived, in these cases, mudflat or channel. Shifts in the estuarine environment on an annual and local basis mean that these evaluations represent average conditions, and sample size is an important variable. Not all the variables could be evaluated for each shell so the sums of the variable states are less than the shell count, or the Minimum Number of Individuals estimate.

The samples from the Provenience Groups at the Riseing Son Tavern were small and fragmentary, and the Minimum Number of Individuals count for the entire collection of oysters was only 201. A Minimum of 11 clams was accounted for. An examination of the site totals in the attached table indicates that the oysters at the site were being collected primarily from mudflats in locations of relatively low salinity. Winter-to-spring appear to have been the primary collecting periods, and by far the majority of the shells were opened by breaking rather than shucking.

Table 23: Oyster Shell Analysis

| FS.         | Left      | Right | MNI | Clams | Salinity Regime |    |     |    | Harvest Season |      |      |      |             | Opening      |    | Bottom |       |         |
|-------------|-----------|-------|-----|-------|-----------------|----|-----|----|----------------|------|------|------|-------------|--------------|----|--------|-------|---------|
|             |           |       |     |       | I               | II | III | IV | Sep. to Nov.   | Dec. | Jan. | Mar. | Apr. to May | Jun. to Aug. | ?  | Broken | Shuck | Mudflat |
|             | 1         | 2     |     |       | 1               |    |     |    |                |      |      |      |             |              |    |        | 3     |         |
|             | 1         | 2     |     |       | 1               |    |     |    | 1              |      |      |      |             |              |    |        | 2     | 1       |
|             | 2         | 2     |     |       |                 | 2  |     | 1  |                |      |      |      |             |              |    | 2      | 4     |         |
|             | 1         |       |     |       | 1               |    |     |    |                | 1    |      |      |             |              |    | 1      | 1     |         |
|             | 1         |       |     |       | 1               |    |     |    |                |      |      | 1    |             |              |    | 1      | 1     |         |
|             |           | 3     |     |       |                 |    |     |    |                |      |      |      |             |              |    |        | 3     |         |
| PG 31, Tot. | 6         | 9     | 9   | 0     | 3               | 3  | 0   | 0  | 1              | 0    | 2    | 0    | 1           | 1            | 1  | 4      | 0     | 14      |
|             | 3         |       |     |       |                 | 2  | 1   |    |                |      |      |      |             |              |    | 3      |       |         |
|             | 1         |       |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             | 5         | 7     |     |       | 5               |    |     |    |                |      |      |      |             |              | 5  | 4      |       |         |
|             | Fragments |       |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             | 4         |       |     |       | 2               | 2  |     |    | 1              |      |      |      |             |              | 2  | 4      | 4     |         |
|             | 3         | 14    |     |       |                 | 2  |     |    |                |      |      |      |             |              | 2  |        |       |         |
|             | 3         |       |     |       | 3               |    |     |    |                |      |      |      |             |              | 3  |        |       |         |
| PG 32, Tot. | 18        | 22    | 22  | 0     | 12              | 5  | 0   | 0  | 0              | 0    | 1    | 0    | 1           | 0            | 10 | 16     | 0     | 4       |
|             | 1         | 3     |     |       | 1               |    |     |    |                |      | 1    |      |             |              |    |        |       | 4       |
|             | 1         | 1     |     |       | 1               |    |     |    |                |      | 1    |      |             |              |    |        |       | 1       |
|             |           | 6     |     |       | 1               |    |     |    |                |      |      |      |             |              |    | 1      |       |         |
|             | 1         |       |     |       | 1               |    |     |    |                |      |      |      |             |              |    |        |       | 1       |
|             | 1         | 1     |     |       |                 |    |     |    |                |      |      |      | 1           |              |    |        |       | 1       |
|             | 1         |       |     |       | 1               |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             | Fragments |       |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             | Fragments |       |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             | Fragments | 1     |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             |           |       |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
|             |           |       |     |       |                 |    |     |    |                |      |      |      |             |              |    |        |       |         |
| PG 33, Tot. | 4         | 12    | 12  | 2 MNI | 3               | 1  | 0   | 0  | 0              | 0    | 2    | 0    | 1           | 0            | 0  | 2      | 0     | 7       |

Table 23 (continued)

| FS. | Left | Right | MNI | Clams     | Sailfinly |    |     |    | Harvest Season |      |      |              | Opening     |              |   | Bottom |       |         |         |
|-----|------|-------|-----|-----------|-----------|----|-----|----|----------------|------|------|--------------|-------------|--------------|---|--------|-------|---------|---------|
|     |      |       |     |           | I         | II | III | IV | Sep. to Nov.   | Dec. | Jan. | Feb. to Mar. | Apr. to May | Jun. to Aug. | ? | Broken | Shuck | Mudflat | Channel |
| 161 | 2    | 1     |     | Fragments | 1         |    |     |    |                |      |      |              |             |              | 1 |        |       | 2       |         |
| 180 | 2    | 3     |     | 1 rl.     | 2         |    |     |    |                |      |      |              |             |              | 1 |        |       | 2       |         |
| 186 | 2    | 10    |     | Fragments | 1         | 1  |     |    | 1              | 1    |      |              |             |              |   |        |       | 12      |         |
| 212 |      | 1     |     |           |           |    |     |    |                |      |      |              |             |              |   |        |       |         |         |
| 214 | 15   | 18    |     | 2 rl.     | 14        | 1  |     |    | 1              | 4    | 3    | 1            |             |              | 3 | 4      | 10    | 18      |         |
| 196 |      |       |     | Fragments |           |    |     |    |                |      |      |              |             |              |   |        |       |         |         |
| 238 | 7    | 18    |     | Fragments | 6         | 1  |     |    | 1              | 1    | 1    | 1            |             |              | 3 |        | 2     | 25      |         |
| 227 | 2    |       |     |           | 1         | 1  |     |    |                |      |      |              |             |              | 2 |        |       | 2       |         |
|     | 30   | 51    | 51  | 3 MNI     | 25        | 2  | 2   | 0  | 0              | 3    | 6    | 4            | 4           | 4            | 3 | 11     | 14    | 61      | 0       |



