APPENDIX II

MISSISSIPPI SOUND SEDIMENT SETTLING RATE CURVES

To investigate the overall impact of resuspension of contaminated sediments from the Mississippi Sound, settling-rate characteristics were determined. Sediments from each sampling site in the Sound were suspended in water at a ratio of 1:4, V/V sediment and water. Approximately 250 g of sediment were dispersed in site water in one gallon jars using a platform shaker for disposal. At the end of a 5-minute shaking period, 1 minute elapsed before an initial 5-mll sample was withdrawn from 2 cm beneath the surface. After this initial collection, additional aliquots were withdrawn sequentially for 2,880 minutes. Suspended solids, measured gravimetrically, have been plotted as percent of the initial value versus time elapsed from cessation of dispersal. Points designated as \( t_{1/2} \), \( t_{1/4} \), and \( t_{1/8} \) represent times at which suspended solids dropped to one-half, one-fourth, and one-eighth of initial values. The logarithmic x-axis gives proper definition to measurements made during short intervals following the mixing process. Each of the settling-rate curves displayed may be described by one of eight settling descriptions as follows:

I. Very high initial suspended solids (15,000 to 35,000 mg/l) dropping abruptly to background values.

II. Very high initial suspended solids (20,000 to 35,000 mg/l) briefly maintained then dropping abruptly to background values.

III. Medium to high initial suspended solids (3,000 to 45,000 mg/l) having steady gradual straight line decline with time to background levels.

IV. Medium high to high initial suspended solids (10,000 to 20,000 mg/l), retained for long periods of time then slow decline to background values.

V. Very high initial suspended solids (> 75,000 mg/l) with two-stage drop, abrupt in each case.

VI. Low initial suspended solids (< 1,000 mg/l) abruptly dropping to background values.

VII. Low initial suspended solids (< 1000 mg/l) with gradual, straight line decline.

VIII. Low initial suspended solids (< 1,000 mg/l) with decline in several plateaus indicating distinct fractions having varying suspension stabilities.
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<td>I-1</td>
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1 Refer to Figure 2 (page 70) for site location.
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