| State       | Beach   | Transect* | Zone** | Yeast (CFU/g or 100 mL) | Total coliforms (MPN/g or 100 mL) | E. coli (MPN/g or 100 mL) | State       | Beach   | Transect* | Zone** | Yeast (CFU/g or 100 mL) | Total coliforms (MPN/g or 100 mL) | E. coli (MPN/g or 100 mL) |
|-------------|---------|-----------|--------|-------------------------|-----------------------------------|--------------------------|-------------|---------|-----------|--------|-------------------------|-----------------------------------|--------------------------|
| Rio de Janeiro | Ipanema 1 | 1        | Supra  | 6.5 | 0.0 | 142.7 | 0.8 | 2.5 | 0.5 | | | | | | | |
|             |         |          | Medio  | 25.6 | 0.0 | 20.5 | 3.2 | <0.16 | 3.0 | | | | | | | |
|             |         |          | Infra  | 4.3 | 1.0 | >517.3 | 463.8 | 7.0 | >463.8 | | | | | | | |
|             |         |          | Water  | 24.0 | 0.0 | >4839.2 | >4839.2 | 3465.8 | >4839.2 | | | | | | | |
|             |         | 2        | Supra  | 84.0 | 8.0 | >4839.2 | >4839.2 | 4839.2 | 1454.0 | | | | | | | |
|             |         |          | Medio  | 4.2 | 0.0 | 171.6 | >481.0 | 56.1 | >430.7 | | | | | | | |
|             |         |          | Infra  | 4.3 | 1.0 | >517.3 | 463.8 | 7.0 | >463.8 | | | | | | | |
|             |         |          | Water  | 24.0 | 0.0 | >4839.2 | >4839.2 | 3465.8 | >4839.2 | | | | | | | |
|             |         | 3        | Supra  | 145.1 | 0.8 | >501.7 | 0.3 | 3.9 | <0.2 | | | | | | | |
|             |         |          | Medio  | 19.0 | 8.0 | 155.3 | 202.2 | 22.6 | 28.1 | | | | | | | |
|             |         |          | Infra  | 1.2 | 0.0 | 23.9 | 186.0 | 3.2 | 16.7 | | | | | | | |
|             |         |          | Water  | 8.0 | 0.0 | 516.2 | >4839.2 | 61.0 | 129.7 | | | | | | | |
| Rio de Janeiro | Ipanema 2 | 1        | Supra  | 133.2 | 80.0 | 8.9 | 25.9 | 0.2 | 0.2 | | | | | | | |
|             |         |          | Medio  | 2.7 | 7.9 | 3.0 | 10.9 | 1.7 | 4.4 | | | | | | | |
|             |         |          | Infra  | 0.0 | 0.0 | 0.0 | 155.3 | 202.2 | 22.6 | 28.1 | | | | | | |
|             |         |          | Water  | 4.0 | 12.0 | 125.8 | 4839.2 | 67.4 | 2827.2 | | | | | | | |
|             |         | 2        | Supra  | 28.0 | 20.0 | 944.2 | >4839.2 | 296.6 | 2599.4 | | | | | | | |
|             |         |          | Medio  | 1.2 | 0.0 | 23.9 | 186.0 | 3.2 | 16.7 | | | | | | | |
|             |         |          | Infra  | 1.2 | 0.0 | 23.9 | 186.0 | 3.2 | 16.7 | | | | | | | |
|             |         |          | Water  | 8.0 | 0.0 | 516.2 | >4839.2 | 61.0 | 129.7 | | | | | | | |
|             |         | 3        | Supra  | 244.6 | 0.8 | >501.7 | 0.3 | 3.9 | <0.2 | | | | | | | |
|             |         |          | Medio  | 139.4 | 21.4 | 1.7 | 10.7 | <0.2 | 3.2 | | | | | | | |
|             |         |          | Infra  | 1.2 | 0.0 | 23.9 | 186.0 | 3.2 | 16.7 | | | | | | | |
|             |         |          | Water  | 8.0 | 0.0 | 516.2 | >4839.2 | 61.0 | 129.7 | | | | | | | |

*: transect 1 - 50 m to the south of the drainage system of pluvial waters; transect 2 - in front of the drainage system; transect 3 - 50 m to the south of the drainage system. **: supra - supralittoral; medio - mediolittoral; infra - infralittoral.
### TABLE II

Yeast and *Escherichia coli* densities in sand and water samples (CFU or MPN/100 mL for water samples and CFU or MPN/g for sand samples) collected at recreational beaches in the state of Paraná, Brazil

| State | Beach | Transect* | Zone** | Winter | Summer | Winter | Summer | State | Beach | Transect* | Zone** | Winter | Summer | Winter | Summer |
|-------|-------|-----------|--------|--------|--------|--------|--------|-------|-------|-----------|--------|--------|--------|--------|--------|
|       |       |           |        | Yeast  | E. coli | Yeast  | E. coli |
|       |       |           |        | (CFU/g or 100 mL) | (MPN/g or 100 mL) | (CFU/g or 100 mL) | (MPN/g or 100 mL) |
|       |       |           |        | Yeast  | E. coli | Yeast  | E. coli |
|       |       |           |        | (CFU/g or 100 mL) | (MPN/g or 100 mL) | (CFU/g or 100 mL) | (MPN/g or 100 mL) |
| Paraná | Mansa | 1 | Supra | 5.8 | 22.5 | 0.2 | 2.2 | 8.7 | 18.0 | 0.2 | 1.0 |
|        |       |          |        | Medio | 2.8 | 0.0 | 3.7 | 0.6 | Medio | 8.4 | 0.9 | 7.7 | 1.2 |
|        |       |          |        | Infra | 4.4 | 34.2 | 0.7 | 0.4 | Infra | 0.0 | 10.8 | 1.3 | 0.3 |
|        |       |          |        | Water | 20.00 | 60.0 | 2239.8 | 151.6 | Water | 4.0 | 0.0 | 1226.2 | 2595.2 |

| Paraná | Leste | 2 | Water | 68.00 | 128.0 | 1740.8 | 98.8 | Water | 0.0 | 0.0 | 615.2 | 2004.8 |

| Paraná | Ipanema | 1 | Supra | 45.6 | 8.1 | 262.1 | 0.1 | Supra | 54.9 | > 270.0 | 0.2 | 7.8 |
|        |         | | Medio | 7.0 | 0.9 | 20.6 | 23.9 | Medio | 5.6 | 17.1 | 85.8 | 1.2 |
|        |         | | Infra | 15.6 | 1.8 | 12.0 | 54.7 | Infra | 3.4 | 1.8 | 16.7 | 1.1 |
|        |         | | Water | 16.0 | 24.0 | 3972.6 | 136.4 | Water | 12.0 | 0.0 | 449.4 | 665.6 |

| Paraná | Ipanema | 2 | Water | 172.0 | 0.0 | 3465.8 | 249.6 | Water | 16.0 | 20.0 | 581.8 | 440.0 |

| Paraná | Shangrilá | 3 | Supra | 149.5 | 4.5 | 9.6 | 3.5 | Supra | 8.5 | 133.2 | 0.2 | 0.6 |
|        |           | | Medio | 9.0 | 4.5 | 483.4 | 36.6 | Medio | 11.1 | 6.3 | 13.7 | 5.0 |
|        |           | | Infra | 17.6 | 5.4 | 179.6 | 28.4 | Infra | 1.2 | 2.7 | 12.5 | 3.0 |
|        |           | | Water | 68.0 | 52.0 | 4839.2 | 1379.2 | Water | 4.0 | 36.0 | 186.6 | 688.8 |

| Florida | Miami | 1 | Supra | 19.4 | 4.5 | 0.2 | 10.5 | Supra | 0.0 | 6.3 | 0.7 | 0.5 |
|         |       | | Medio | 8.2 | 28.8 | 45.4 | 19.0 | Medio | 9.9 | 7.2 | 530.9 | 0.1 |
|         |       | | Infra | 3.0 | 0.9 | 483.4 | 19.2 | Infra | 2.2 | 1.8 | 74.4 | 12.0 |
|         |       | | Water | 16.0 | 16.0 | 2290.0 | 310.4 | Water | 0.0 | 4.0 | 296.4 | 1376.0 |

| Florida | Miami | 2 | Water | 0.0 | 16.0 | 357.8 | > 9678.4 | Water | 0.0 | 56.0 | 247.2 | 898.8 |

| Florida | Miami | 3 | Supra | 3.4 | 8.1 | 5.0 | 0.1 | Supra | 83.9 | 0.0 | 0.2 | 0.1 |
|         |       | | Medio | 1.7 | 0.9 | 0.2 | 0.1 | Medio | 5.6 | 3.6 | 62.8 | 51.4 |
|         |       | | Infra | 2.2 | 0.0 | 128.2 | 9.6 | Infra | 1.2 | 1.8 | 6.7 | 9.3 |
|         |       | | Water | 4.0 | 28.0 | 372.0 | 134.8 | Water | 4.0 | 48.0 | 323.2 | 688.8 |

*: transect 1 - 50 m to the south of the drainage system of pluvial waters; transect 2 - in front of the drainage system; transect 3 - 50 m to the south of the drainage system. **: supra - supralittoral; médio - mediolittoral; infra - infralittoral.