

TABLE 2.1—COMPOSITION AND PROPERTIES OF SEVERAL RESERVOIR FLUIDS

| Composition (mol%)                          |         |         |            |               |              |           |
|---------------------------------------------|---------|---------|------------|---------------|--------------|-----------|
| Component                                   | Dry Gas | Wet Gas | Gas        | Near-Critical |              | Black Oil |
|                                             |         |         | Condensate | Oil           | Volatile Oil |           |
| CO <sub>2</sub>                             | 0.10    | 1.41    | 2.37       | 1.30          | 0.93         | 0.02      |
| N <sub>2</sub>                              | 2.07    | 0.25    | 0.31       | 0.56          | 0.21         | 0.34      |
| C <sub>1</sub>                              | 86.12   | 92.46   | 73.19      | 69.44         | 58.77        | 34.62     |
| C <sub>2</sub>                              | 5.91    | 3.18    | 7.80       | 7.88          | 7.57         | 4.11      |
| C <sub>3</sub>                              | 3.58    | 1.01    | 3.55       | 4.26          | 4.09         | 1.01      |
| <i>i</i> -C <sub>4</sub>                    | 1.72    | 0.28    | 0.71       | 0.89          | 0.91         | 0.76      |
| <i>n</i> -C <sub>4</sub>                    |         | 0.24    | 1.45       | 2.14          | 2.09         | 0.49      |
| <i>i</i> -C <sub>5</sub>                    | 0.50    | 0.13    | 0.64       | 0.90          | 0.77         | 0.43      |
| <i>n</i> -C <sub>5</sub>                    |         | 0.08    | 0.68       | 1.13          | 1.15         | 0.21      |
| C <sub>6(s)</sub>                           |         | 0.14    | 1.09       | 1.46          | 1.75         | 1.61      |
| C <sub>7+</sub>                             |         | 0.82    | 8.21       | 10.04         | 21.76        | 56.40     |
| Properties                                  |         |         |            |               |              |           |
| $M_{C_{7+}}$                                |         | 130     | 184        | 219           | 228          | 274       |
| $\gamma_{C_{7+}}$                           |         | 0.763   | 0.816      | 0.839         | 0.858        | 0.920     |
| $K_{wC_7}$                                  |         | 12.00   | 11.95      | 11.98         | 11.83        | 11.47     |
| GOR, scf/STB                                | ∞       | 105,000 | 5,450      | 3,650         | 1,490        | 300       |
| OGR, STB/MMscf                              | 0       | 10      | 180        | 275           |              |           |
| $\gamma_{API}$                              |         | 57      | 49         | 45            | 38           | 24        |
| $\gamma_g$                                  |         | 0.61    | 0.70       | 0.71          | 0.70         | 0.63      |
| $p_{sat}$ , psia                            |         | 3,430   | 6,560      | 7,015         | 5,420        | 2,810     |
| $B_{sat}$ , ft <sup>3</sup> /scf or bbl/STB |         | 0.0051  | 0.0039     | 2.78          | 1.73         | 1.16      |
| $\rho_{sat}$ , lbm/ft <sup>3</sup>          |         | 9.61    | 26.7       | 30.7          | 38.2         | 51.4      |