

EXHIBIT 4

**Antenna Radiation Patterns**

1.2 Meter Antenna - The ERA Technology 1.2 Meter Ku-band Reflector Antenna (Model No. KU12LR) (the "1.2 Meter Antenna"), proposed by Schlumberger Technology Corporation ("Schlumberger") in this application, complies with the envelope outlined in Section 25.209 of the FCC's Regulations in the region of  $\pm (1.5^\circ \text{ to } 6.0^\circ)$ . Outside the main beam, the 1.2 Meter Antenna meets the requirements of Section 25.209 of the FCC's Regulations. The radiation patterns for this 1.2 Meter Antenna are attached to this application as Exhibit 6.

Pursuant to Section 25.134(a) of the FCC's Regulations, the maximum digital uplink transmitter power density at the antenna flange permitted is -14 dBW/4KHz. Schlumberger's proposed system is designed to operate with a maximum EIRP density at the antenna flange not exceeding -19 dBW/4KHz. Consequently, the system will operate with a power density below the maximum allowable power density by a margin of 5 dB. This lower power should result in acceptable performance by the 1.2 Meter Antenna without adjacent satellite interference.

Furthermore, Schlumberger, in Exhibit 6, has submitted a series of EIRP density charts performed at 14.25 GHz as required by Sections 25.222 (b)(1)(i-iv) of the FCC's Regulations. These charts show compliance with all the spectral density envelopes specified in Sections 25.222 (a)(1-4) of the FCC's Regulations.

Schlumberger agrees to accept adjacent satellite interference in the 12 GHz receive band as a result of its 1.2 Meter Antenna performance in the  $\pm (1.5^\circ \text{ to } 6.0^\circ)$  region. It understands that adjacent satellite interference protection applies only to the extent set forth in Section 25.209 of the FCC's Regulations.

2.4 Meter Antenna - The ERA Technology 2.4 Meter Ku-band Reflector Antenna (Model No. KU24LR) (the "2.4 Meter Antenna"), proposed by Schlumberger Technology Corporation ("Schlumberger") in this application, complies with the envelope outlined in Section 25.209 of the FCC's Regulations in the region of  $\pm (1.5^\circ \text{ to } 6.0^\circ)$ . Outside the main beam, the 2.4 Meter Antenna meets the requirements of Section 25.209 of the FCC's Regulations. The radiation patterns for this 2.4 Meter Antenna are attached to this application as Exhibit 6.

Pursuant to Section 25.134(a) of the FCC's Regulations, the maximum digital uplink transmitter power density at the antenna flange permitted is -14 dBW/4KHz. Schlumberger's proposed system is designed to operate with a maximum EIRP density at the antenna flange not exceeding -19 dBW/4KHz. Consequently, the system will operate with a power density below the maximum allowable power density by a margin of 5 dB. This lower power should result in acceptable performance by the 2.4 Meter Antenna without adjacent satellite interference.

Furthermore, Schlumberger, in Exhibit 6, has submitted a series of EIRP density charts performed at 14.25 GHz as required by Sections 25.222 (b)(1)(i-iv) of the FCC's Regulations. These charts show compliance with all the spectral density envelopes specified in Sections 25.222 (a)(1-4) of the FCC's Regulations.

Schlumberger agrees to accept adjacent satellite interference in the 12 GHz receive band as a result of its 2.4 Meter Antenna performance in the  $\pm$  (1.5° to 6.0°) region. It understands that adjacent satellite interference protection applies only to the extent set forth in Section 25.209 of the FCC's Regulations.