



Spire Renewable Natural Gas Specification

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|---|--|
| Heating Value (HV)                                | 950 BTU/SCF ≤ HV ≤ 1100 BTU/SCF  |
| Interchangeability                                | 1290 ≤ Wobb Index ≤ 1370   |
| Delivery Temperature (DT)                         | 40°F ≤ DT ≤ 120°F  |
| Methane Content (CH <sub>4</sub> )                | ≥ 94% CH <sub>4</sub>  |
| Water Vapor Content                               | ≤ 7 lbs/MMSCF @ 14.73 psi and 60°F   |
| Liquids   | No water or hydrocarbons at delivery temperature and pressure or at 750 psi and 40°F   |
| Solids  | Commercially free of dust, gums, dirt, paraffin, impurities, and particulate matter  |
| Oxygen (O <sub>2</sub> )                          | ≤ 0.05% O <sub>2</sub> by volume<br>Parties shall make every reasonable effort to keep gas free from O <sub>2</sub>  |
| Nitrogen (N <sub>2</sub> )                        | ≤ 2.5% N <sub>2</sub> by volume  |
| Hydrogen (H <sub>2</sub> )                        | ≤ 400 ppm H <sub>2</sub>   |
| Carbon Dioxide (CO <sub>2</sub> )                 | ≤ 2% CO <sub>2</sub> by volume   |
| Carbon Monoxide (CO)                              | ≤ 0.1 % CO by volume   |
| Total Inerts                                      | ≤ 4.5% total inerts by volume  |
| Halogens  | < 0.1 ppm  |
| PCBs  | None   |
| Siloxanes   | ≤ 1 ppm Siloxanes<br>Testing not required in cattle, hog, and poultry waste digesters  |
| Hydrocarbon Dew Point                             | ≤ 20°F   |
| Hydrogen Sulfide (H <sub>2</sub> S)               | ≤ .25 grains/100 SCF (4 ppm)   |
| Arsenic (As)                                      | ≤ 0.48 mg/m <sup>3</sup>   |
| Vinyl Chloride (C <sub>2</sub> H <sub>3</sub> Cl) | ≤ 21 mg/m <sup>3</sup> C <sub>2</sub> H <sub>3</sub> Cl<br>Testing not required in cattle, hog, and poultry waste digesters  |
| Total Sulphur (S)                                 | ≤ 5 grains/100 SCF (85 ppm)  |
| Mercaptan (CH <sub>3</sub> SH)                    | ≤ 610 ppm <sub>v</sub> CH <sub>3</sub> SH  |
| Hazardous Substances                              | The gas must not contain Hazardous Substances (including toxic or carcinogenic substances or reproductive toxins) at concentrations (1) which would: (a) prevent or restrict the normal marketing of gas, (b) be injurious to pipeline facilities, or (c) would present a health or safety hazard to Spire employees or the general public and (2) not greater than any limits imposed by applicable Environmental Laws. |