

8. QUALITY OF GAS

The provisions set forth in this Section 8 shall apply to all Gas received or delivered by Pipeline.

8.1 Natural or Artificial Gas. The Gas received or delivered by Pipeline hereunder shall be a combustible Gas consisting wholly of, or a mixture of:

- (A) Natural Gas of the quality and composition produced in its natural state except that the Pipeline may extract or permit the extraction of any of the constituents thereof except methane.
- (B) Gas generated by vaporization of Liquefied Natural Gas (LNG).
- (C) Manufactured, reformed, or mixed Gas consisting essentially of hydrocarbons of the quality and character produced by nature in the petroleum, oil and gas fields with physical properties such that when the artificial pipeline Gas is commingled with Natural Gas, the two become indistinguishable.

8.2 Total Heating Value and Wobbe Number.

- (A) The Gas shall have a Total Heating Value of not less than 967 nor greater than 1110 Btu per Cubic Foot of dry Gas at a temperature of 60 degrees Fahrenheit and under a pressure of 14.73 psia. The Gas shall have a Wobbe Number of not less than 1314 nor greater than 1400 (calculated using Total Heating Value (THV)), dry, under standard conditions at 14.73 psia at 60 degrees Fahrenheit based on the following mathematical definition and in accordance with Section 10 of these General Terms and Conditions:

$$\text{THV} / \text{Sqrt SGas}$$

Where:

THV = Total Heating Value (Btu/standard Cubic Feet)

SGas = Specific Gravity

Sqrt = Square Root of

- (B) Both the Total Heating Value at any time, for purposes of determining compliance with Section 8.2(A) above, and the average Total Heating Value for any billing period shall be determined by gas chromatographic analysis using the most recent AGA standards or any revision thereof, or by other methods mutually agreed upon by Customer and Pipeline.

8.3 Composition.

- (A) Merchantability. The Gas shall be commercially free, under continuous Gas flow conditions, from objectionable odors, solid matter, dust, gums, and gum-forming constituents which might interfere with its merchantability or cause injury to or interference with proper operations of the pipelines, compressor stations, meters, regulators or other appliances through which it flows.
- (B) Oxygen. The Gas shall not have an uncombined oxygen content in excess of one-tenth (0.1) of one percent (1%) by volume.
- (C) Non-Hydrocarbon Gas. The Gas shall not contain more than four percent (4%) by volume of a combined total of carbon dioxide and nitrogen; it being understood, however, that the total carbon dioxide content shall not exceed two percent (2%) by volume, and the total combined nitrogen and oxygen content shall not exceed two and three quarters percent (2.75%) by volume .
- (D) Liquids. The Gas shall be free of water and hydrocarbons in liquid form at the temperature and pressure at which the Gas is received and delivered, and receipts of Gas shall meet any applicable requirements established pursuant to Section 8.3(K) below.
- (E) Hydrogen Sulfide. The Gas shall not contain more than one-quarter (0.25) grain of hydrogen sulfide per one-hundred (100) Cubic Feet.
- (F) Total Sulphur. The Gas shall not contain more than five (5) grains of total sulphur per one-hundred (100) Cubic Feet.
- (G) Temperature. The Gas shall not have a temperature of more than one-hundred twenty degrees (120 degrees) Fahrenheit.
- (H) Water Vapor. The Gas shall not contain in excess of seven (7) pounds of water vapor per million Cubic Feet.
- (I) Non-Methane Hydrocarbons C2+. Pipeline shall accept delivery of Gas with a twelve percent (12.0%) ethanes and heavier hydrocarbons (C2+) by volume, provided that such Gas satisfies all other applicable provisions of the Tariff. This standard shall be referred to as Pipeline's C2+ Safe Harbor. While the C2+ Safe Harbor is in effect, Pipeline shall accept delivery of Gas with a C2+ level greater than 12%. If Pipeline accepts Gas with a C2+ level greater than 12%, the upper limit for the Total Heating Value and the Wobbe Number shall be waived.

- (J) Non-Methane Hydrocarbons C4+. The Gas shall not contain butanes and heavier hydrocarbons (C4+) of more than one and one half percent (1.5%) by volume.
- (K) Liquefiable Hydrocarbons. Pipeline shall accept delivery of Gas with a C6+ content equal to or less than 0.032 GPM, provided that such Gas satisfies all other applicable provisions of the Tariff. This standard shall be referred to as Pipeline's Liquefiable Hydrocarbons Safe Harbor, and the Liquefiable Hydrocarbons Safe Harbor correlates to a cricondentherm hydrocarbon dewpoint of approximately 15 degrees Fahrenheit. Absent a Liquefiable Hydrocarbon Problem, as defined in Section 1 of these General Terms and Conditions, Pipeline shall accept delivery of Gas with a C6+ content greater than 0.032 GPM, provided that such Gas satisfies all other applicable provisions of the Tariff.
- (L) Microbiological Agents. The Gas shall not contain, either in the Gas or in any liquids with the Gas, any microbiological organism, active bacteria or bacterial agent capable of contributing to or causing corrosion and/or operational and/or other problems. Microbiological organisms, bacteria or bacterial agents include, but are not limited to, sulfate reducing bacteria (SRB) and acid producing bacteria (APB). Tests for bacteria or bacterial agents shall be conducted on samples taken from the meter run or the appurtenant piping using American Petroleum Institute (API) test method API-RP38 or any other test method acceptable to Pipeline and Customer which is currently available or may become available at any time.

8.4 Pipeline shall have the right, after either written or electronic notice to Customer, to refuse to accept all or any portion of Gas tendered for Customer's account to Pipeline if: (i) such Gas shall fail at any time to conform to any of the specifications set forth in this Section 8 and such Gas is not subject to an effective exemption or waiver of the specifications that the Gas fails to meet or (ii) such Gas, in Pipeline's reasonable judgment, may cause harm to Pipeline's facilities. In the event Pipeline refuses to accept Gas tendered by Customer because such Gas does not conform to the specifications set forth herein, Customer shall not be relieved of its obligation to pay any Reservation Charge provided for in Customer's Service Agreement. If the Gas tendered by Pipeline for Customer's account shall fail at any time to conform to any of the specifications set forth in this Section 8, Customer shall notify Pipeline of such deficiency and may, at its option, refuse to accept delivery pending correction by Pipeline.

8.5 Waivers.

Notwithstanding the requirements set forth in this Section 8, Pipeline may grant a waiver to allow Customer to tender or cause to be tendered Gas which does not, when injected into Pipeline's facilities, meet the quality specifications set forth in

this Section 8; provided that acceptance of such Gas shall not adversely affect Pipeline's system facilities or operations, and further provided that once such Gas has been blended, to the extent blending occurs, the commingled Gas stream at any Point of Delivery on Pipeline's system shall be compliant with the quality specifications set forth in this Section 8. Pipeline shall post on the LINK® System any waiver granted pursuant to this Section 8.5(B). Pipeline shall implement this Section 8.5(B) on a non-discriminatory basis and may cancel any such waiver at any time if necessary to assure that the commingled Gas stream is compliant with the quality specifications set forth in this Section 8 at any Point of Delivery on Pipeline's system.

- 8.6 Pipeline and Customer may agree, or governmental authorities may require, that the Gas be odorized by use of a malodorant agent of such character as to indicate by a distinctive odor the presence of Gas. Whenever odorized Gas is delivered, the quality and specifications, as set forth in this Section 8, of such Gas shall be determined prior to the addition of malodorant or with proper allowance for changes or additions due to such malodorant. Such odorization of the Gas by the Pipeline, unless otherwise mutually agreed by Customer and Pipeline, shall be for the purpose of detection of the Gas only during the time, prior to delivery to the Customer, when in possession of the Pipeline. Pipeline and Customer may agree from time to time, to allow Customer to deliver odorized Gas to Pipeline. Pipeline shall not be obligated to receive such odorized Gas from Customer when such receipt may, in Pipeline's sole discretion, be detrimental to Pipeline's system operations.