

GAS MEASUREMENT PROCEDURES FOR ALL AREAS EXCEPT SAN JUAN BASIN

1. Acronyms and Definitions:
 - a. “**AGA**” means the American Gas Association.
 - b. “**Agreement**” means the agreement that references these Gas Measurement Procedures.
 - c. “**API**” means American Petroleum Institute.
 - d. “**ASTM**” means ASTM International.
 - e. “**Btu**” means British thermal units, which is the amount of heat required to raise the temperature of one pound of water from 58.5 degrees Fahrenheit to 59.5 degrees Fahrenheit at a constant pressure of 14.73 psia.
 - f. “**Barrel**” means 42 U.S. gallons.
 - g. “**BLM**” means the United States Department of the Interior’s Bureau of Land Management.
 - h. “**Business Day**” means any day except Saturday, Sunday, and those days which banking institutions are authorized or required by law or other governmental action to close.
 - i. “**Commercially Reasonable Efforts**” means, with respect to performance by either Party of the applicable obligations under these Gas Measurement Procedures, the efforts a reasonable person in such Party’s position would use to satisfy performance of any such obligations, but not obligating such Party to incur expenditures exceeding the amount a reasonable person would incur for performance of the applicable obligations under the circumstances. For clarity, the obligation to utilize Commercially Reasonable Efforts requires a lesser effort on the part of the performing Party than the obligation to utilize “best efforts.” An obligation to utilize “best efforts” means the performing Party must do essentially everything in its power to complete performance of the applicable obligations irrespective of the cost to the performing Party.
 - j. “**Customer**” means the customer (as defined in the Agreement), its affiliates, its designees, or its inspector.
 - k. “**Duplicate Sample(s)**” means a sample obtained from the same location, at the same time, and using the same procedures as another sample.
 - l. “**EGM**” means electronic gas measurement.
 - m. “**Enterprise**” means the Enterprise Products Partners L.P. affiliate contracting in the Agreement or the Party operating the measurement or analytical equipment as defined in the Agreement.
 - n. “**Force Majeure**” is defined in the Agreement.
 - o. “**Gas**” means any mixture of gaseous hydrocarbons, consisting essentially of methane and heavier hydrocarbons and inert and noncombustible gases that are extracted from the subsurface of the earth.
 - p. “**Gas Measurement Policy**” means the Enterprise Gas Measurement Policy, which is a guidance document specifying how Gas custody quality measurement systems are to be designed, installed, operated, and maintained. The Gas Measurement Policy may be modified from time to time, as determined solely by Enterprise, and as provided in Section 17 below, is available at https://portal.enterpriseproducts.com/measurement_contracts.html.

- q. **“Gas Measurement Procedures”** means this document, which may be modified from time to time, as determined solely by Enterprise, and as provided in Section 17 below.
 - r. **“GPA”** means GPA Midstream.
 - s. **“Gross Heating Value”** means, for Gas, the total or gross Btus produced by the combustion with oxygen, at constant pressure, of the amount of Gas that would occupy a volume of one cubic foot under Standard Conditions and under standard gravitational force with air of the same pressure and temperature as the Gas, when the products of combustion are cooled to the initial temperature of the Gas and air and when the water formed by combustion is condensed to the liquid state.
 - t. **“Ideal Gas Laws”** means the thermodynamic laws applying to perfect gases.
 - u. **“Industry Standards”** means any or all of the following: AGA; API MPMS; API Publications, Recommended Practices and other similar documents; GPA Midstream standards and publications; and ASTM standards and publications.
 - v. **“Laboratory”** means a laboratory of Enterprise’s choosing.
 - w. **“Mcf”** means 1,000 standard cubic feet.
 - x. **“Measurement Dispute”** is defined in Section 16(c) below.
 - y. **“Measurement Expert”** is defined in Section 16(c) below.
 - z. **“MMB”** means Enterprise Measurement and Material Balance.
 - aa. **“MMBtu”** means 1,000,000 Btus.
 - bb. **“MMcf”** means 1,000,000 cubic feet under Standard Conditions.
 - cc. **“MPMS”** means the API Manual of Petroleum Measurement Standards.
 - dd. **“O&M Manual”** means the Enterprise Gas Measurement Operation and Maintenance Procedures Manual, a copy of which is available upon request, which may be modified from time to time, as determined solely by Enterprise, and as provided in Section 17 below.
 - ee. **“Party”** or **“Parties”** refers to Enterprise and/or Customer, as the case may be.
 - ff. **“Plant”** has the meaning set forth in the Agreement.
 - gg. **“Plant Fuel”** has the meaning set forth in the Agreement.
 - hh. **“Point of Measurement”** has the meaning set forth in the Agreement.
 - ii. **“psia”** means pounds per square inch absolute.
 - jj. **“Requesting Party”** means the Party requesting the applicable data.
 - kk. **“Residue Gas”** has the meaning set forth in the Agreement.
 - ll. **“Sending Party”** means the Party providing the applicable data.
 - mm. **“Standard Conditions,”** unless otherwise specified in the Agreement, means a base pressure of 14.73 psia and a base temperature of 60 degrees Fahrenheit.
2. Measurement Responsibilities
- a. Enterprise shall perform, or cause to be performed, all measurement activities hereunder. For deliveries by Customer to Enterprise, Customer shall deliver at its sole cost and expense, Customer’s Gas to Enterprise in a manner that allows for proper measurement. To the extent this Exhibit creates an obligation on Enterprise related to equipment owned or operated by a third party, Enterprise shall use Commercially Reasonable Efforts to cause the applicable third party to perform in accordance with this Exhibit. Customer has the right to witness all measurement activities.

- b. Unless otherwise agreed to in writing by the Parties, Enterprise’s measurements will be the measurement of record and will be conclusively binding, unless reasonably proven to be in error.
3. Measurement Equipment.
- a. Enterprise shall install, maintain, and operate meters and/or other necessary equipment for measurement of the following as applicable to the Agreement:

Item	Volume	Gross Heating Value	Plant Product Determination
Lean unprocessed Gas to Points of Measurement	X	X	N/A
Lean unprocessed Gas to processing	X	X	N/A
Rich unprocessed Gas to Points of Measurement	X	X	X
Rich unprocessed Gas to processing	X	X	X
Unprocessed lean fuel used as Plant Fuel	X	X	N/A
Unprocessed rich fuel used as Plant Fuel	X	X	X
Unprocessed lean fuel as residue fuel	X	X	N/A
Unprocessed rich fuel as residue fuel	X	X	X
Transmission pipeline interconnect	X	X	N/A
Lean Gas gathering	X	X	N/A
Processed Gas used as Plant Fuel	X	N/A	N/A
Volume of each Plant product extracted from Gas delivered to the Plant for processing	X	N/A	N/A

4. Measurement Standards
- a. Enterprise’s intent is to design, operate, and maintain its custody transfer measurement facilities in a manner to meet or exceed the relevant criteria set out in AGA standards, the MPMS, GPA Midstream standards, ASTM standards, relevant governmental regulations, the Gas Measurement Policy, MMB standards, Enterprise Engineering standards, and other relevant Enterprise policies and standards.

Standards		
AGA	API MPMS Chapters	GPA Midstream
Report 3	5	2165
Report 7	14	2166
Report 8	21	2172
Report 9		8173
Report 11		8182
		8185

- b. Gas will be measured by the Gas Measurement Procedures using a flow meter approved by MMB.
 - c. All equipment employed in metering and sampling, and all equipment upstream and downstream of the measurement station that might affect quantity and/or quality determination, must be approved as to the manufacturer, model, type, materials of construction, method of installation, and maintenance by MMB. Due consideration will be given to the operating pressure, temperature, and other characteristics of the product being measured.
 - d. Where EGM and flow computers are used, the Parties shall use and accept the electronic derivations, measurement, and calculations.
 - e. Enterprise reserves the right to implement any changes to these publications based on Enterprise's cost-benefit analysis of the change, the ready availability of equipment necessary to make the change, or such other assessment as Enterprise, in its sole discretion, may deem appropriate.
5. Measurement Factors.
- a. The unit of volume is one cubic foot of Gas under Standard Conditions.
 - b. The atmospheric pressure is assumed to be a constant, determined by elevation and specific site location, using the relevant state or federal agency's atmospheric table (e.g., Texas Railroad Commission's "County Atmospheric Table") regardless of the variations of such atmospheric pressure from time to time.
 - c. The unit of measurement for the purpose of receipt and delivery of Gas under the Agreement is the MMBtu. Enterprise shall determine the number of MMBtus delivered or received by multiplying the number of Mcf of Gas delivered or received by the Gross Heating Value of such Gas in Btus per cubic foot and multiplying by 0.001. For example, if the volume is 950 Mcf, and the Gross Heating Value is 1095 Btus/cubic foot, the total MMBtu is calculated thusly: $950 \times 1095 \times 0.001$ equals 1,040.25 MMBtu.
 - d. Enterprise shall:
 - i. determine temperature by use of a recording thermometer or equivalent device so installed such that it may continuously record the temperature of Gas passing through the meter;
 - ii. assure any electronic flow measurement includes temperature measurements made in accordance with MPMS Chapter 21;
 - iii. determine the specific gravity by calculation from fractional analyses of samples taken at Enterprise's measurement facilities;
 - iv. make corrections for deviation from Ideal Gas Laws for all Gas metered under the Agreement as prescribed in the applicable standards; and
 - v. use the records of temperature, the factor for specific gravity, and the corresponding correction for deviation from Ideal Gas Laws applicable during each day to make computations of volumes under the Agreement.
6. Measurement Accuracy Verification
- a. Enterprise shall verify the accuracy of the measurement facilities (which includes sampling) specified herein according to the following:
 - i. BLM: for measurement facilities subject to BLM regulations, Enterprise shall follow the BLM verification schedule.
 - ii. For all other areas, Enterprise shall verify according to the following table:

MCFD	Calibration Frequency
Meters greater than 1,000	Monthly
Meters 501 to 1,000	Quarterly
Meters 0 to 500	Semi-Annually

- b. Only Enterprise may perform the reading, calibration, and adjustment of all metering equipment. Enterprise shall give Customer reasonable notice, and Customer has the right to be present at the time of any sampling or testing done in connection with Enterprise’s measuring equipment under the Agreement. If present, Customer or its designee may sample Gas at this time. If, after notice, Customer fails to have a representative present, Enterprise does not need to wait for Customer’s personnel to be on-site, and the results of the tests are, nevertheless, deemed accurate until the next tests are made and, upon request by Customer, Enterprise shall furnish Customer a written copy of such test results. Except as provided in Section 6(d) below, Enterprise is responsible for the costs of all tests of such measuring equipment.
- c. The official EGM data from the measuring equipment remains the property of Enterprise, but upon request by the Customer, Enterprise shall submit its records and EGM data, together with calculations therefrom to Customer for inspection and verification, subject to their return to Enterprise.
- d. Special Tests: In the event Customer desires a special test (a test not scheduled by Enterprise under the provisions of these Gas Measurement Procedures of any measuring equipment, Enterprise shall give the Customer 72 hours’ advance notice of the test, and both Parties shall cooperate to secure a prompt test of the accuracy of such equipment. If the measuring equipment tested is found to be within the range of accuracy set forth in these Gas Measurement Procedures or if an inspection of the primary measurement equipment indicates no problems, Customer shall pay the costs of such special test including any labor and transportation costs pertaining thereto. If a problem is determined to exist, Enterprise shall pay such costs, and corrections will made according to the provisions of these Gas Measurement Procedures.

7. Measurement Error

- a. If any of the measuring, analytical, or test equipment is found to be out of service or registering inaccurately resulting in an overall error exceeding the error specified in Section 7(b), then Enterprise shall return the equipment to working order. Measuring, analytical, or other test equipment operated, maintained, and calibrated in accordance with the Enterprise’s Gas Measurement Policy and O&M Manual is presumed to be correct.
- b. Quantity Determination: If measuring or test equipment is either out of service or inaccurate by an amount resulting in an overall error exceeding 0.5% for ultrasonic and Coriolis meters, or 1% for all other meters, at a reading corresponding to the average rate of flow for the period since the last preceding test, then the Parties shall disregard the previous readings of such equipment for any period definitely known or agreed upon, or for a period of one-half of the time elapsed since the last test of measuring equipment affected, not to exceed 45 days. Enterprise shall

estimate the volume measured during such period by using the following in the order listed:

- i. using the data recorded by any check measuring equipment if installed and registering accurately;
 - ii. using the data recorded by parallel measuring equipment if installed and registering accurately;
 - iii. correcting the error if the percentage of error is ascertainable by calibration, test, or mathematical calculation; or
 - iv. estimating the quantity, quality, or volume measured, based upon deliveries under similar conditions during a period when the equipment was registering accurately.
- c. Enterprise will not be required to make corrections for recorded inaccuracies over the period of time in question:
- i. of 0.5% or less for ultrasonic and Coriolis meters; or
 - ii. of 1% or less for all other meters.
- d. Regardless of the language above, for meters subject to BLM regulations and all other meters in the San Juan Basin, Enterprise will abide by calibration and quantity transaction report limits specified by the BLM.

8. Customer's Right of Inspection

- a. Upon reasonable notice and at all times during business hours, Customer may inspect measurement equipment installed by Enterprise, and other measurement or testing data retained by Enterprise.
- b. Enterprise shall preserve all original test data, and other similar records for such period as required by the longer of (i) 24 months, (ii) the Audit provisions of these Gas Measurement Procedures, or (ii) applicable law.

9. Gross Heating Value Determination

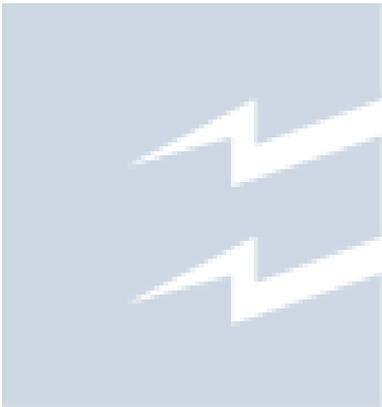
- a. Enterprise shall determine the Gross Heating Value of Customer's Gas for the first month of deliveries after initial flow has begun from spot samples, which will be collected at each Point of Measurement as soon as reasonably practical after initial flow begins unless there is an online chromatograph in service at the Point of Measurement upon initial flow.
- b. Enterprise shall determine the Gross Heating Value of Customer's Gas delivered under the Agreement each month based on the fractional analysis of the most recent sample or by online chromatograph. The sample method and frequency will be dictated by Enterprise's most-current Gas Measurement Policy and O&M Manual. Enterprise shall apply the results from these analyses to all subsequent deliveries until such time as new samples are obtained and analyzed. Enterprise shall furnish to Customer each such fractional analysis and Gross Heating Value determination.
- c. As-Delivered Gas: For Gas delivered under the Agreement containing more than seven pounds per MMcf of water vapor, Enterprise shall correct the Gross Heating Value to account for the actual as-delivered water content. Actual water content will not be directly measured at the Points of Measurement for the purposes of adjusting volume or Gross Heating Value. All Customer Gas will be assumed water-saturated at flowing conditions unless otherwise agreed upon. Enterprise shall correct the Gross Heating Value to account for the calculated amount of water in a water-saturated natural gas stream at measured flowing conditions (pressure

- and temperature) per applicable Industry Standards. No adjustment for water content will be made to the volume.
- d. Dry Gas: So long as the actual water vapor content of the delivered Gas is seven pounds per MMcf or less, the delivered Gas is deemed to be dry and no correction for water vapor content will be applied.
10. Plant Product Determination
- a. Enterprise shall determine the quantity of Plant products contained in Customer's Gas delivered to Enterprise, Gas from other sources delivered to Enterprise for processing, Customer residue Gas, and Plant Fuel by a test conducted each month using the most recent sample.
- b. The sample method and frequency will be dictated by Enterprise's most-current Gas Measurement Policy and O&M Manual.
11. Analytical
- a. Enterprise shall operate, maintain, and calibrate its analytical equipment in accordance with Enterprise's Gas Measurement Policy and O&M Manual.
- b. Enterprise may utilize online analyzers, composite sampling, or spot sampling for analytical determinations. When spot sampling is utilized, the Customer may obtain a Duplicate Sample.
- c. Enterprise shall perform or cause to be performed fractional analysis of composite and spot samples at a Laboratory, using gas chromatography equipment or such other method as be commonly used in the industry.
- i. Alternatively, Enterprise may use online chromatographs to determine the fractional analysis of the Gas.
- d. Determination of Composition: From such fractional analysis, Enterprise shall determine the composition in mole percent of each of the following chemical compounds:
- i. carbon dioxide;
- ii. nitrogen;
- iii. methane;
- iv. ethane;
- v. propane;
- vi. iso-butane;
- vii. normal butane;
- viii. iso-pentane;
- ix. normal pentane;
- x. hexanes and heavier hydrocarbons; and
- xi. other contractually specified compounds.
- e. Enterprise shall determine the specific gravity, and correction factor for deviation from Ideal Gas Laws of Customer's Gas delivered under the Agreement each month based on the most recent sample or by online chromatograph.
12. Installation and Operation of Check Meters
- a. Either Party may install, maintain, and operate, at its own expense, at or near the Point of Measurement, check meters and other necessary equipment by which the quantity of Gas may be measured; *provided, however*, such equipment must be installed so as not to interfere with the operation of the primary metering facilities.

- b. The Parties shall exercise care in the installation, maintenance, and operation of check meters, pressure regulating equipment, and Gas compressors to prevent any inaccuracy in the determination of the quantity of Gas being measured.
13. Access to Measurement Equipment
- a. Whenever any Point of Measurement is on the premises of one Party, the other Party will have the right of free use and ingress and egress at all reasonable times for the purpose of installation, operation, repair, or removal of its own respective metering facilities at such Point of Measurement.
 - b. In the event check measurement equipment is installed, the other Party will have access to the same at all reasonable times, but the reading, calibration, and adjusting thereof will be done only by the Party installing the check measurement.
 - c. Customer shall ensure that any third-party operator of any Point of Measurement provide Enterprise the same rights granted by Customer under the above provisions of this Section with respect to such Point of Measurement.
14. Data Exchange
- a. A Party (Requesting Party) may ask to have access to connect to the other Party's (Sending Party) monitoring equipment. If the Requesting Party requests such connection, the Sending Party shall allow the Requesting Party to make necessary connections and to acquire certain data agreed to by the Sending Party. The cost of connecting the Sending Party's monitoring equipment and communicating the data to the Requesting Party will be the responsibility of the Requesting Party. The Requesting Party will only have access to such electronic measurement data in a format established by the Sending Party, which will not interfere with the operation of the Sending Party's facilities. The Requesting Party recognizes that the data acquired from electronic equipment is "raw" data, subject to further refinement, correction, and/or interpretation. The Sending Party will have no obligation to provide data to the Requesting Party during times of maintenance, repair, or other activities by the Sending Party that interrupt operations and/or, due to event of Force Majeure. The Sending Party will have no obligation to advise the Requesting Party of any such interruptions, or to otherwise in any way verify the integrity of such data at any time.
 - b. At a minimum, the Sending Party shall use Commercially Reasonable Efforts to make necessary connections to its electronic measurement equipment to provide the Requesting party the following:
 - i. pressure;
 - ii. temperature;
 - iii. instantaneous flow and instantaneous energy;
 - iv. total flow today and total energy today;
 - v. total flow yesterday and total energy yesterday;
 - vi. flow control set point;
 - vii. flow control valve position;
 - viii. Gas compositional data (including specific gravity); and
 - ix. such other data as the Parties may agree.
15. Audit
- a. Each Party and its duly authorized representatives will have access to the accounting records and other documents maintained by the other Party, which relate

- to the measurement, composition, or handling of the Gas being delivered or received under the Agreement.
- b. Each Party may audit such records once a year at any reasonable time or times within 24 months of the rendition of any statement or invoice forming the basis of such claim, and neither Party shall make claim on the other party for any adjustment after said 24-month period. The Party requesting the audit must give the other Party at least 30 days' written notice.
16. Disputes and Resolution
- a. Presumed Correct: Enterprise's measurement, analytic, or test equipment is presumed to be correct unless Customer provides reasonable evidence that such measurement, analytical, or test equipment was not operated, maintained, and calibrated in accordance with Enterprise's Gas Measurement Policy and O&M Manual.
- b. Notice Requirement: Any issue regarding quantity or quality determination must be initiated via e-mail to MMB no later than five Business Days after delivery of the settlement statement to Customer.
- c. Quantity Determination Dispute: If Customer provides reasonable evidence that Enterprise's measurement or test equipment was not operated, maintained, or calibrated in accordance with Enterprise's Gas Measurement Policy or O&M Manual, the following apply:
- i. Enterprise shall return the equipment to working order; and Enterprise shall adjust any error in quantity determination as provided in the "Measurement Error" section.
- d. Quality or Analytical Dispute: If Customer provides reasonable evidence that Enterprise's sampling or analytical equipment was not operated, maintained, and calibrated in accordance with Enterprise's Gas Measurement Policy and O&M Manual, then the following apply:
- i. Online Analysis:
 1. Basis of Disputes: Disputes must be based on Enterprise's failure to operate, maintain, and calibrate the analytical equipment per Enterprise's Gas Measurement Policy and Gas O&M Manual.
 2. Dispute Resolution: If it is proven that Enterprise failed to operate, maintain, and calibrate the analytical equipment per Enterprise's Gas Measurement Policy and O&M Manual, Enterprise shall return the online analyzer to working order and shall make any adjustment as follows:
 - a. Correcting the error if the percentage of error is ascertainable by calibration, test, or mathematical calculation; or
 - b. Estimating the quality measured, based upon deliveries during a period when the equipment was registering accurately.
 - ii. Composite Analytical Disputes:
 1. Basis of Dispute: Composite samples are sent to a Laboratory. Any dispute must be based on Enterprise's failure to operate or maintain the Enterprise composite sampler in accordance with Enterprise's Gas Measurement Policy or O&M Manuals.

2. Dispute Resolution: If it is proven that Enterprise failed to operate and maintain the Enterprise composite sampler in accordance with Enterprise's Gas Measurement Policy or O&M Manual, Enterprise shall make any adjustments as follows:
 - a. Correcting the error if the percentage of error is ascertainable by calibration, test, or mathematical calculation; or
 - b. Estimating the quality measured, based upon deliveries during a period when the equipment was operating accurately.
- iii. Spot Sample Dispute:
 1. Basis of dispute: A spot sample dispute must be based upon the following:
 - a. Enterprise's test methods;
 - b. Duplicate Samples used for analysis; and
 - c. Customer and Laboratory results must differ by more than the GPA/ASTM reproducibility limits.
 2. Dispute Resolution:
 - a. Determination of Analysis: Enterprise and Customer shall collect three new Duplicate Samples: One for Enterprise, one for the Customer, and one to be sent to an independent, mutually agreeable third party, each of whom shall utilize the Enterprise-approved test methods.
 - b. If Enterprise's results as compared to the third party laboratory's results are within the reproducibility limits of the appropriate GPA/ASTM test method, Enterprise's results will be presumed correct, and no correction is required.
 - c. If Enterprise's results are not within said limits, and Customer's results as compared to the third party laboratory's results are within said limits, Customer's results will be presumed correct, and Enterprise shall issue a correction by using the Customer's analysis for the period in question.
 - d. If neither Party's results as compared to the third party laboratory's results are within said limits, Enterprise's results will be presumed correct, and no correction is required.
- e. Measurement Experts for Quantity Determination: Customer may refer for determination any quantity dispute, controversy, or claim as described in such section (a "**Measurement Dispute**"), which the Parties are unable to resolve, to a mutually agreement measurement expert (the "**Measurement Expert**") as the sole and exclusive remedy of the Parties as to the Measurement Dispute. Customer will be responsible for all fees charged by the Measurement Expert related to the Measurement Dispute. The decision of the Measurement Expert with respect to the applicable Measurement Dispute will be final and binding upon the Parties. Should the Measurement Expert determine that readings included in Enterprise's statement



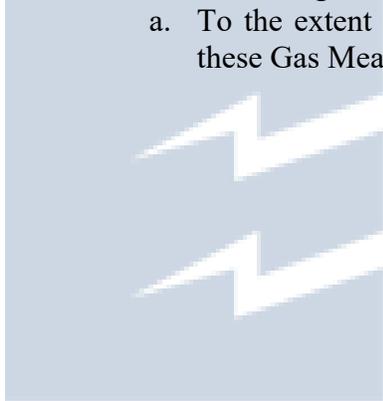
were incorrect, then Enterprise shall submit a revised statement to Customer to include the correct readings determined by the Measurement Expert. Should the Measurement Expert fail to make a conclusive decision, Enterprise's results will be presumed correct.

17. Right to Change

- a. Enterprise reserves the right to modify these Gas Measurement Procedures, the Gas Measurement Policy, and the O&M Manual from time to time in order to conform to the general measurement procedures prevailing for Gas processing plants, gas transmission activities, other related gas and Gas activities, and relevant laws, remove any inequities found to exist, and such other measurement procedures as adopted by Enterprise that are applicable to the Agreement.
- b. Where multiple analytical test methods are allowed, Enterprise reserves, in its sole discretion, the right from time to time, as it deems necessary, to change the approved analytical method.
- c. Any change to these Gas Measurement Procedures, the Gas Measurement Policy, the O&M Manual, or the approved analytical test methods must be made on a non-discriminatory basis to similarly situated customers.

18. Conflicts with Agreement

- a. To the extent there is any conflict or inconsistency between the Agreement and these Gas Measurement Procedures, the provision of the Agreement will control.



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