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Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
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Part 98 —Mandatory Greenhouse Gas Reporting

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Subpart NN Suppliers of Natural Gas and Natural Gas Liquids

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Subpart NN—Suppliers of Natural Gas and Natural Gas Liquids

§ 98.400 Definition of the source category.

This supplier category consists of natural gas liquids fractionators and local natural gas distribution companies.

- (a) Natural gas liquids fractionators are installations that fractionate natural gas liquids (NGLs) into their constituent liquid products or mixtures of products (ethane, propane, normal butane, isobutane or pentanes plus) for supply to downstream facilities.
- (b) Local Distribution Companies (LDCs) are companies that own or operate distribution pipelines, not interstate pipelines or intrastate pipelines, that physically deliver natural gas to end users and that are within a single state that are regulated as separate operating companies by State public utility commissions or that operate as independent municipally-owned distribution systems. LDCs do not include pipelines (both interstate and intrastate) delivering natural gas directly to major industrial users and farm taps upstream of the local distribution company inlet.
- (c) This supply category does not consist of the following facilities:
 - (1) Field gathering and boosting stations.

- (2) Natural gas processing plants that separate NGLs from natural gas and produce bulk or y-grade NGLs but do not fractionate these NGLs into their constituent products.
- (3) Facilities that meet the definition of refineries and report under subpart MM of this part.
- (4) Facilities that meet the definition of petrochemical plants and report under subpart X of this part.

[74 FR 56374, Oct. 30, 2009, as amended at 78 FR 71975, Nov. 29, 2013]

§ 98.401 Reporting threshold.

Any supplier of natural gas and natural gas liquids that meets the requirements of § 98.2(a)(4) must report GHG emissions associated with the products they supply.

[81 FR 89268, Dec. 9, 2016]

§ 98.402 GHGs to report.

- (a) NGL fractionators must report the CO₂ emissions that would result from the complete combustion or oxidation of the annual quantity of ethane, propane, normal butane, isobutane, and pentanes plus that is produced and sold or delivered to others.
- (b) LDCs must report the CO₂ emissions that would result from the complete combustion or oxidation of the annual volumes of natural gas provided to end-users on their distribution systems.

§ 98.403 Calculating GHG emissions.

- (a) LDCs and fractionators shall, for each individual product reported under this part, calculate the estimated CO₂ emissions that would result from the complete combustion or oxidation of the products supplied using either of Calculation Methodology 1 or 2 of this subpart:
 - (1) **Calculation Methodology 1.** NGL fractionators shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the product(s) supplied using Equation NN-1 of this section. The annual volume of each NGL product supplied (Fuel_h) shall include any amount of that NGL supplied in a mixture or blend of two or more products listed in Tables NN-1 and NN-2 of this subpart. The annual volume of each NGL product supplied shall exclude any amount of that NGL contained in bulk NGLs exiting the facility (e.g., y-grade, o-grade, and other bulk NGLs). LDCs shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the natural gas received at the city gate (including natural gas that is transported by, but not owned by, the reporter) using Equation NN-1 of this section. For each product, use the default value for higher heating value and CO₂ emission factor in Table NN-1 of this subpart. Alternatively, for each product, a reporter-specific higher heating value and CO₂ emission factor may be used, in place of one or both defaults provided they are developed using methods outlined in § 98.404. For each product, you must use the same volume unit throughout the equation.

$$CO_{2i} = 1 \times 10^{-3} \sum Fuel_h HHV_h EF_h \quad (\text{Eq. NN-1})$$

Where:

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of each product "h" for redelivery to all recipients (metric tons).

$Fuel_h$ = Total annual volume of product "h" supplied (volume per year, in thousand standard cubic feet (Mscf) for natural gas and bbl for NGLs).

HHV_h = Higher heating value of product "h" supplied (MMBtu/Mscf or MMBtu/bbl).

EF_h = CO_2 emission factor of product "h" (kg CO_2 /MMBtu).

1×10^{-3} = Conversion factor from kilograms to metric tons (MT/kg).

- (2) **Calculation Methodology 2.** NGL fractionators shall estimate CO_2 emissions that would result from the complete combustion or oxidation of the product(s) supplied using Equation NN-2 of this section. The annual volume of each NGL product supplied ($Fuel_h$) shall include any amount of that NGL supplied in a mixture or blend of two or more products listed in Tables NN-1 and NN-2 of this subpart. The annual volume of each NGL product supplied shall exclude any amount of that NGL contained in bulk NGLs exiting the facility (e.g., y-grade, o-grade, and other bulk NGLs). LDCs shall estimate CO_2 emissions that would result from the complete combustion or oxidation of the natural gas received at the city gate (including natural gas that is transported by, but not owned by, the reporter) using Equation NN-2 of this section. For each product, use the default CO_2 emission factor found in Table NN-2 of this subpart. Alternatively, for each product, a reporter-specific CO_2 emission factor may be used in place of the default factor, provided it is developed using methods outlined in § 98.404. For each product, you must use the same volume unit throughout the equation.

$$CO_{2i} = \sum_h Fuel_h \cdot EF_h \quad (\text{Eq. NN-2})$$

Where:

CO_{2i} = Annual CO_2 mass emissions that would result from the combustion or oxidation of each product "h" (metric tons)

$Fuel_h$ = Total annual volume of product "h" supplied (volume per year, in Mscf for natural gas and bbl for NGLs).

EF_h = CO_2 emission factor of product "h" (MT CO_2 /bbl, or MT CO_2 /Mscf)

- (b) Each LDC shall follow the procedures below.

- (1) For natural gas that is received for redelivery to downstream gas transmission pipelines and other local distribution companies, use Equation NN-3 of this section and the default values for the CO_2 emission factors found in Table NN-2 of this subpart. Alternatively, reporter-specific CO_2 emission factors may be used, provided they are developed using methods outlined in § 98.404.

$$CO_{2i} = Fuel \cdot EF \quad (\text{Eq. NN-3})$$

Where:

CO_{2i} = Annual CO_2 mass emissions that would result from the combustion or oxidation of natural gas for redelivery to transmission pipelines or other LDCs (metric tons).

Fuel = Total annual volume of natural gas supplied to downstream gas transmission pipelines and other local distribution companies (Mscf per year).

EF = Fuel-specific CO₂ emission factor (MT CO₂/Mscf).

(2)

- (i) For natural gas delivered to large end-users, use Equation NN-4 of this section and the default values for the CO₂ emission factors found in Table NN-2 of this subpart. A large end-user means any end-user facility receiving greater than or equal to 460,000 Mscf of natural gas per year. If the LDC does not know the total quantity of gas delivered to the end-user facility based on readily available information in the LDCs possession, then large end-user means any single meter at an end-user facility to which the LDC delivers equal to or greater than 460,000 Mscf per year.
- (ii) Alternatively, reporter-specific CO₂ emission factors may be used, provided they are developed using methods outlined in § 98.404.

$$CO_{2k} = Fuel \quad EF \quad (Eq. NN-4)$$

Where:

CO_{2k} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to each large end-user k, as defined in paragraph (b)(2)(i) of this section (metric tons).

Fuel = Total annual volume of natural gas supplied to each large end-user k, as defined in paragraph (b)(2)(i) of this section (Mscf per year).

EF = Fuel-specific CO₂ emission factor (MT CO₂/Mscf).

- (3) For the net change in natural gas stored on system by the LDC during the reporting year, use Equation NN-5a of this section. For natural gas that is received by means other than through the city gate, and is not otherwise accounted for by Equation NN-1 or NN-2 of this section, use Equation NN-5b of this section.
- (i) For natural gas received by the LDC that is injected into on-system storage, and/or liquefied and stored, and for gas removed from storage and used for deliveries, use Equation NN-5a of this section and the default value for the CO₂ emission factors found in Table NN-2 of this subpart. Alternatively, a reporter-specific CO₂ emission factor may be used, provided it is developed using methods outlined in § 98.404.

$$CO_{2l} = [Fuel_1 - Fuel_2] * EF \quad (Eq. NN-5a)$$

Where:

CO_{2l} = Annual CO₂ mass emissions that would result from the combustion or oxidation of the net change in natural gas stored on system by the LDC within the reporting year (metric tons).

Fuel₁ = Total annual volume of natural gas added to storage on-system or liquefied and stored in the reporting year (Mscf per year).

Fuel₂ = Total annual volume of natural gas that is removed from storage or vaporized and removed from storage and used for deliveries to customers or other LDCs by the LDC within the reporting year (Mscf per year).

EF = CO₂ emission factor for natural gas placed into/removed from storage (MT CO₂/Mscf).

- (ii) For natural gas received by the LDC that bypassed the city gate, use Equation NN-5b of this section. This includes natural gas received directly by LDC systems from producers or natural gas processing plants from local production, received as a liquid and vaporized for delivery, or received from any other source that bypassed the city gate. Use the default value for the CO₂ emission factors found in Table NN-2 of this subpart. Alternatively, a reporter-specific CO₂ emission factor may be used, provided it is developed using methods outlined in § 98.404.

$$CO_{2n} = Fuel_z * EF_z \quad (Eq. NN-5b)$$

Where:

CO_{2n} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas received that bypassed the city gate and is not otherwise accounted for by Equation NN-1 or NN-2 of this section (metric tons).

Fuel_z = Total annual volume of natural gas received that was not otherwise accounted for by Equation NN-1 or NN-2 of this section (natural gas from producers and natural gas processing plants from local production, or natural gas that was received as a liquid, vaporized and delivered, and any other source that bypassed the city gate). (Mscf per year)

EF_z = Fuel-specific CO₂ emission factor (MT CO₂/Mscf)

- (4) Calculate the total CO₂ emissions that would result from the complete combustion or oxidation of the annual supply of natural gas to end-users that receive a supply less than 460,000 Mscf per year using Equation NN-6 of this section.

$$CO_2 = CO_{2i} + CO_{2n} - CO_{2j} - \sum CO_{2k} - CO_{2l} \quad (Eq. NN-6)$$

Where:

CO₂ = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to LDC end-users not covered in paragraph (b)(2) of this section (metric tons).

CO_{2i} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas received at the city gate as calculated in paragraph (a)(1) or (2) of this section (metric tons).

CO_{2j} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to transmission pipelines or other LDCs as calculated in paragraph (b)(1) of this section (metric tons).

CO_{2k} = Annual CO₂ mass emissions that would result from the combustion or oxidation of natural gas delivered to each large end-user as calculated in paragraph (b)(2) of this section (metric tons).

CO_{2l} = Annual CO_2 mass emissions that would result from the combustion or oxidation of the net change in natural gas stored by the LDC within the reported year as calculated in paragraph (b)(3)(i) of this section (metric tons).

CO_{2n} = Annual CO_2 mass emissions that would result from the combustion or oxidation of natural gas that was received by the LDC directly from sources bypassing the city gate, and is not otherwise accounted for in Equation NN-1 or NN-2 of this section, as calculated in paragraph (b)(3)(ii) of this section (metric tons).

(c) Each NGL fractionator shall follow the following procedures.

(1)

- (i) For fractionated NGLs received by the reporter from other NGL fractionators, you shall use Equation NN-7 of this section and the default values for the CO_2 emission factors found in Table NN-2 of this subpart.
- (ii) Alternatively, reporter-specific CO_2 emission factors may be used, provided they are developed using methods outlined in § 98.404.

$$CO_{2m} = \sum_g Fuel_g EF_g \quad (Eq. NN-7)$$

Where:

CO_{2m} = Annual CO_2 mass emissions that would result from the combustion or oxidation of each fractionated NGL product "g" received from other fractionators (metric tons).

$Fuel_g$ = Total annual volume of each NGL product "g" received from other fractionators (bbls).

EF_g = Fuel-specific CO_2 emission factor of NGL product "g" (MT CO_2 /bbl).

- (2) Calculate the total CO_2 equivalent emissions that would result from the combustion or oxidation of fractionated NGLs supplied less the quantity received from other fractionators using Equation NN-8 of this section.

$$CO_2 = CO_{2l} - CO_{2m} \quad (Eq. NN-8)$$

Where:

CO_2 = Annual CO_2 mass emissions that would result from the combustion or oxidation of fractionated NGLs delivered to customers or on behalf of customers less the quantity received from other fractionators (metric tons).

CO_{2l} = Annual CO_2 mass emissions that would result from the combustion or oxidation of fractionated NGLs delivered to all customers or on behalf of customers as calculated in paragraph (a)(1) or (2) of this section (metric tons).

CO_{2m} = Annual CO_2 mass emissions that would result from the combustion or oxidation of fractionated NGLs received from other fractionators and calculated in paragraph (c)(1) of this section (metric tons).

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 66478, Oct. 28, 2010; 78 FR 71975, Nov. 29, 2013; 81 FR 89268, Dec. 9, 2016]

§ 98.404 Monitoring and QA/QC requirements.

(a) *Determination of quantity.*

- (1) NGL fractionators and LDCs shall determine the quantity of NGLs and natural gas using methods in common use in the industry for billing purposes as audited under existing Sarbanes Oxley regulation.
 - (i) Where an appropriate standard method published by a consensus-based standards organization exists, such a method shall be used. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).
 - (ii) Where no appropriate standard method developed by a consensus-based standards organization exists, industry standard practices shall be followed.
- (2) NGL fractionators and LDCs shall base the minimum frequency of the product quantity measurements, to be summed to the annual quantity reported, on the reporter's standard practices for commercial operations.
 - (i) For NGL fractionators the minimum frequency of measurements shall be the measurements taken at custody transfers summed to the annual reportable volume.
 - (ii) For natural gas the minimum frequency of measurement shall be based on the LDC's standard measurement schedules used for billing purposes and summed to the annual reportable volume.
- (3) NGL fractionators shall use measurement for NGLs at custody transfer meters or at such meters that are used to determine the NGL product slate delivered from the fractionation facility.
- (4) If a NGL fractionator supplies a product that is a mixture or blend of two or more products listed in Tables NN-1 and NN-2 of this subpart, the NGL fractionator shall report the quantities of the constituents of the mixtures or blends separately.
- (5) For an LDC using Equation NN-1 or NN-2 of this subpart, the point(s) of measurement for the natural gas volume received shall be the LDC city gate meter(s).
 - (i) If the LDC makes its own quantity measurements according to established business practices, its own measurements shall be used.
 - (ii) If the LDC does not make its own quantity measurements according to established business practices, it shall use its delivering pipeline invoiced measurements for natural gas deliveries to the LDC city gate, used in determining daily system sendout.
- (6) An LDC using Equation NN-3 of this subpart shall measure natural gas at the custody transfer meters.
- (7) An LDC using Equation NN-4 of this subpart shall measure natural gas at the large end-user's meter(s). Where a large end-user is known to have more than one meter located at their facility, based on readily available information in the LDCs possession, the reporter shall measure the

natural gas at each meter and sum the annual volume delivered to all meters located at the end-user's facility to determine the total volume delivered to the large end-user. Otherwise, the reporter shall consider the total annual volume delivered through each single meter at a single particular location to be the volume delivered to an individual large end-user.

- (8) An LDC using Equation NN-5a and/or NN-5b of this subpart shall measure natural gas as follows:
 - (i) Fuel₁ shall be measured at the on-system storage injection meters and/or at the meters measuring natural gas to be liquefied.
 - (ii) Fuel₂ shall be measured at the meters used for measuring on-system storage withdrawals and/or LNG vaporization injection.
 - (iii) Fuel_z shall be measured using established business practices.
- (9) An LDC shall measure all natural gas under the following standard industry temperature and pressure conditions: Cubic foot of gas at a temperature of 60 degrees Fahrenheit and at an absolute pressure of one atmosphere.

(b) *Determination of higher heating values (HHV).*

- (1) When a reporter uses the default HHV provided in this section to calculate Equation NN-1 of this subpart, the appropriate value shall be taken from Table NN-1 of this subpart.
- (2) When a reporter uses a reporter-specific HHV to calculate Equation NN-1 of this subpart, an appropriate standard test published by a consensus-based standards organization shall be used. Consensus-based standards organizations include, but are not limited to, the following: AGA and GPA.
 - (i) If an LDC makes its own HHV measurements according to established business practices, then its own measurements shall be used.
 - (ii) If an LDC does not make its own measurements according to established business practices, it shall use its delivering pipeline measurements.

(c) *Determination of emission factor (EF).*

- (1) When a reporter used the default EF provided in this section to calculate Equation NN-1 of this subpart, the appropriate value shall be taken from Table NN-1 of this subpart.
- (2) When a reporter used the default EF provided in this section to calculate Equation NN-2, NN-3, NN-4, NN-5a, NN-5b, or NN-7 of this subpart, the appropriate value shall be taken from Table NN-2 of this subpart.
- (3) When a reporter uses a reporter-specific EF, the reporter shall use an appropriate standard method published by a consensus-based standards organization to conduct compositional analysis necessary to determine reporter-specific CO₂ emission factors. Consensus-based standards organizations include, but are not limited to, the following: AGA and GPA.

(d) *Equipment Calibration.*

- (1) Equipment used to measure quantities in Equations NN-1, NN-2, NN-5a and NN-5b of this subpart shall be calibrated prior to its first use for reporting under this subpart, using a suitable standard method published by a consensus based standards organization or according to the equipment manufacturer's directions.

- (2) Equipment used to measure quantities in Equations NN-1, NN-2, NN-5a, and NN-5b of this subpart shall be recalibrated at the frequency specified by the standard method used or by the manufacturer's directions.
- (3) Equipment used to measure quantities in Equations NN-3 and NN-4 of this subpart shall be recalibrated at the frequency commonly used within the industry.

[74 FR 56374, Oct. 30, 2009, as amended at 78 FR 71976, Nov. 29, 2013; 81 FR 89269, Dec. 9, 2016]

§ 98.405 Procedures for estimating missing data.

- (a) Whenever a quality-assured value of the quantity of natural gas liquids or natural gas supplied during any period is unavailable (e.g., if a flow meter malfunctions), a substitute data value for the missing quantity measurement must be used in the calculations according to paragraphs (b) and (c) of this section.
- (b) **Determination of quantity.**
 - (1) NGL fractionators shall substitute meter records provided by pipeline(s) for all pipeline receipts of NGLs; by manifests for deliveries made to trucks or rail cars; or metered quantities accepted by the entities purchasing the output from the fractionator whether by pipeline or by truck or rail car. In cases where the metered data from the receiving pipeline(s) or purchasing entities are not available, fractionators may substitute estimates based on contract quantities required to be delivered under purchase or delivery contracts with other parties.
 - (2) LDCs shall either substitute their delivering pipeline metered deliveries at the city gate or substitute nominations and scheduled delivery quantities for the period when metered values of actual deliveries are not available.
- (c) **Determination of HHV and EF.**
 - (1) Whenever an LDC that makes its own HHV measurements according to established business practices cannot follow the quality assurance procedures for developing a reporter-specific HHV, as specified in § 98.404, during any period for any reason, the reporter shall use either its delivering pipeline measurements or the default HHV provided in Table NN-1 of this part for that period.
 - (2) Whenever an LDC that does not make its own HHV measurements according to established business practices or an NGL fractionator cannot follow the quality assurance procedures for developing a reporter-specific HHV, as specified in § 98.404, during any period for any reason, the reporter shall use the default HHV provided in Table NN-1 of this part for that period.
 - (3) [Reserved]
 - (4) Whenever a reporter cannot follow the quality assurance procedures for developing a reporter-specific EF, as specified in § 98.404, during any period for any reason, the reporter shall use the default EF provided in § 98.408 for that period.

[74 FR 56374, Oct. 30, 2009, as amended at 78 FR 71977, Nov. 29, 2013]

§ 98.406 Data reporting requirements.

- (a) In addition to the information required by § 98.3(c), the annual report for each NGL fractionator covered by this rule shall contain the following information.

- (1) Annual quantity (in barrels) of each NGL product supplied (including fractionated NGL products received from other NGL fractionators) in the following product categories: Ethane, propane, normal butane, isobutane, and pentanes plus (Fuel_h in Equations NN-1 and NN-2 of this subpart).
- (2) Annual quantity (in barrels) of each NGL product received from other NGL fractionators in the following product categories: Ethane, propane, normal butane, isobutane, and pentanes plus (Fuel_g in Equation NN-7 of this subpart).
- (3) Annual volumes in Mscf of natural gas received for processing.
- (4) Annual quantities (in barrels) of y-grade, o-grade, and other bulk NGLs:
 - (i) Received.
 - (ii) Supplied to downstream users.
- (5) Annual quantity (in barrels) of propane that the NGL fractionator odorizes at the facility and delivers to others.
- (6) Annual CO₂ emissions (metric tons) that would result from the complete combustion or oxidation of the quantities in paragraphs (a)(1) and (a)(2) of this section, calculated in accordance with § 98.403(a) and (c)(1).
- (7) Annual CO₂ mass emissions (metric tons) that would result from the combustion or oxidation of fractionated NGLs supplied less the quantity received from other fractionators, calculated in accordance with § 98.403(c)(2). If the calculated value is negative, the reporter shall report the value as zero.
- (8) The specific industry standard used to measure each quantity reported in paragraph (a)(1) of this section.
- (9) If the NGL fractionator developed reporter-specific EFs or HHVs, report the following for each product type:
 - (i) The specific industry standard(s) used to develop reporter-specific higher heating value(s) and/or emission factor(s), pursuant to § 98.404(b)(2) and (c)(3).
 - (ii) The developed HHV(s).
 - (iii) The developed EF(s).

(b) In addition to the information required by § 98.3(c), the annual report for each LDC shall contain the following information.

- (1) Annual volume in Mscf of natural gas received by the LDC at its city gate stations for redelivery on the LDC's distribution system, including for use by the LDC (Fuel_h in Equations NN-1 and NN-2 of this subpart).
- (2) Annual volume in Mscf of natural gas placed into storage or liquefied and stored (Fuel₁ in Equation NN-5a).
- (3) Annual volume in Mscf of natural gas withdrawn from on-system storage and annual volume in Mscf of vaporized liquefied natural gas (LNG) withdrawn from storage for delivery on the distribution system (Fuel₂ in Equation NN-5a).
- (4) [Reserved]

- (5) Annual volume in Mscf of natural gas that bypassed the city gate(s) and was supplied through the LDC distribution system. This includes natural gas from producers and natural gas processing plants from local production, or natural gas that was vaporized upon receipt and delivered, and any other source that bypassed the city gate (Fuel₂ in Equation NN-5b).
- (6) Annual volume in Mscf of natural gas delivered to downstream gas transmission pipelines and other local distribution companies (Fuel in Equation NN-3 of this subpart).
- (7) Annual volume in Mscf of natural gas delivered by the LDC to each large end-user as defined in § 98.403(b)(2)(i) of this section.
- (8) The total annual CO₂ mass emissions (metric tons) associated with the volumes in paragraphs (b)(1) through (b)(7) of this section, calculated in accordance with § 98.403(a) and (b)(1) through (b)(3).
- (9) Annual CO₂ emissions (metric tons) that would result from the complete combustion or oxidation of the annual supply of natural gas to end-users registering less than 460,000 Mscf, calculated in accordance with § 98.403(b)(4). If the calculated value is negative, the reporter shall report the value as zero.
- (10) The specific industry standard used to develop the volume reported in paragraph (b)(1) of this section.
- (11) If the LDC developed reporter-specific EFs or HHVs, report the following:
 - (i) The specific industry standard(s) used to develop reporter-specific higher heating value(s) and/or emission factor(s), pursuant to § 98.404 (b)(2) and (c)(3).
 - (ii) The developed HHV(s).
 - (iii) The developed EF(s).
- (12) For each large end-user reported in paragraph (b)(7) of this section, report:
 - (i) The customer name, address, and meter number(s).
 - (ii) Whether the quantity of natural gas reported in paragraph (b)(7) of this section is the total quantity delivered to a large end-user's facility, or the quantity delivered to a specific meter located at the facility.
 - (iii) If known, report the EIA identification number of each LDC customer.
- (13) The annual volume in Mscf of natural gas delivered by the LDC (including natural gas that is not owned by the LDC) to each of the following end-use categories. For definitions of these categories, refer to EIA Form 176 (Annual Report of Natural Gas and Supplemental Gas Supply & Disposition) and Instructions.
 - (i) Residential consumers.
 - (ii) Commercial consumers.
 - (iii) Industrial consumers.
 - (iv) Electricity generating facilities.
- (14) The name of the U.S. state or territory covered in this report submission.

- (c) Each reporter shall report the number of days in the reporting year for which substitute data procedures were used for the following purpose:
- (1) To measure quantity.

(2) To develop HHV(s).

(3) To develop EF(s).

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 66479, Oct. 28, 2010; 78 FR 71977, Nov. 29, 2013; 81 FR 89269, Dec. 9, 2016]

§ 98.407 Records that must be retained.

In addition to the information required by § 98.3(g), the reporter shall retain the following records:

- (a) Records of all meter readings and documentation to support volumes of natural gas and NGLs that are reported under this part.
- (b) Records documenting any estimates of missing metered data and showing the calculations of the values used for the missing data.
- (c) Calculations and worksheets used to estimate CO₂ emissions for the volumes reported under this part.
- (d) Records related to the large end-users identified in § 98.406(b)(7).
- (e) Records relating to measured Btu content or carbon content showing specific industry standards used to develop reporter-specific higher heating values and emission factors.
- (f) Records of such audits as required by Sarbanes Oxley regulations on the accuracy of measurements of volumes of natural gas and NGLs delivered to customers or on behalf of customers.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 66479, Oct. 28, 2010]

§ 98.408 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Table NN-1 to Subpart NN of Part 98—Default Factors for Calculation Methodology 1 of This Subpart

Fuel	Default higher heating value ¹	Default CO2 emission factor (kg CO2/MMBtu)
Natural Gas	1.026 MMBtu/Mscf	53.06
Propane	3.84 MMBtu/bbl	62.87
Normal butane	4.34 MMBtu/bbl	64.77

¹ Conditions for higher heating values presented in MMBtu/bbl are 60 °F and saturation pressure.

Fuel	Default higher heating value ¹	Default CO2 emission factor (kg CO2/MMBtu)
Ethane	2.85 MMBtu/bbl	59.60
Isobutane	4.16 MMBtu/bbl	64.94
Pentanes plus	4.62 MMBtu/bbl	70.02

¹ Conditions for higher heating values presented in MMBtu/bbl are 60 °F and saturation pressure.

[78 FR 71977, Nov. 29, 2013]

Table NN-2 to Subpart NN of Part 98—Default Factors for Calculation Methodology 2 of This Subpart

Fuel	Unit	Default CO2 emission factor (MT CO2/Unit) ¹
Natural Gas	Mscf	0.0544
Propane	Barrel	0.241
Normal butane	Barrel	0.281
Ethane	Barrel	0.170
Isobutane	Barrel	0.270
Pentanes plus	Barrel	0.324

¹ Conditions for emission value presented in MT CO2/bbl are 60 °F and saturation pressure.

[78 FR 71977, Nov. 29, 2013, as amended at 79 FR 3508, Jan. 22, 2014; 81 FR 89270, Dec. 9, 2016]