§ 98.470  Definition of the source category.

(a) The injection of carbon dioxide (CO₂) source category comprises any well or group of wells that inject a CO₂ stream into the subsurface.

(b) If you report under subpart RR of this part for a well or group of wells, you are not required to report under this subpart for that well or group of wells.

(c) A facility that is subject to this part only because it is subject to subpart UU of this part is not required to report emissions under subpart C of this part or any other subpart listed in § 98.2(a)(1) or (a)(2).

§ 98.471  Reporting threshold.

(a) You must report under this subpart if your facility injects any amount of CO₂ into the subsurface.

(b) For purposes of this subpart, any reference to CO₂ emissions in § 98.2(1) shall mean CO₂ received.

§ 98.472  GHGs to report.

You must report the mass of CO₂ received.

§ 98.473  Calculating CO₂ received.

(a) You must calculate and report the annual mass of CO₂ received by pipeline using the procedures in paragraphs (a)(1) or (a)(2) of this section and the procedures in paragraph (a)(3) of this section, if applicable.

(1) For a mass flow meter, you must calculate the total annual mass of CO₂ in a CO₂ stream received in metric tons by multiplying the mass flow by the CO₂ concentration in the flow, according to Equation UU-1 of this section. You must collect these data quarterly. Mass flow and concentration data measurements must be made in accordance with § 98.474.

\[
CO_{2T,r} = \sum_{p=1}^{4} (Q_{r,p} - S_{r,p}) \cdot C_{CO_{2},pr} \quad (Eq. \ UU-1)
\]

where:

\( CO_{2T,r} \) = Net annual mass of CO₂ received through flow meter \( r \) (metric tons).

\( Q_{r,p} \) = Quarterly mass flow through a receiving flow meter \( r \) in quarter \( p \) (metric tons).

\( S_{r,p} \) = Quarterly mass flow through a receiving flow meter \( r \) that is redelivered to

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another facility without being injected into your well in quarter p (metric tons).

\( C_{CO2,p,r} \) = Quarterly CO\(_2\) concentration measurement in flow for flow meter r in quarter p (wt. percent CO\(_2\), expressed as a decimal fraction).

\( p \) = Quarter of the year.

\( r \) = Receiving flow meter.

(2) For a volumetric flow meter, you must calculate the total annual mass of CO\(_2\) in a CO\(_2\) stream received in metric tons by multiplying the volumetric flow at standard conditions by the CO\(_2\) concentration in the flow and the density of CO\(_2\) at standard conditions, according to Equation UU–2 of this section. You must collect these data quarterly. Volumetric flow and concentration data measurements must be made in accordance with §98.474.

\[
CO2T,r = \sum_{p=1}^{4} (Q_{r,p} - S_{r,p}) * D * C_{CO2,p,r} \quad (Eq. \ UU–2)
\]

where:

\( CO2T,r \) = Net annual mass of CO\(_2\) received through flow meter r (metric tons).

\( Q_{r,p} \) = Quarterly volumetric flow through a receiving flow meter r in quarter p at standard conditions (standard cubic meters).

\( S_{r,p} \) = Quarterly volumetric flow through a receiving flow meter r that is redelivered to another facility without being injected into your well in quarter p (standard cubic meters).

\( D \) = Density of CO\(_2\) at standard conditions (metric tons per standard cubic meter): 0.0018704.

\( C_{CO2,p,r} \) = Quarterly CO\(_2\) concentration measurement in flow for flow meter r in quarter p (wt. percent CO\(_2\), expressed as a decimal fraction).

\( p \) = Quarter of the year.

\( r \) = Receiving flow meter.

(3) If you receive CO\(_2\) through more than one flow meter, you must sum the mass of all CO\(_2\) received in accordance with the procedure specified in Equation UU–3 of this section.

\[
CO2T,r = \sum_{r=1}^{g} CO2T,r \quad (Eq. \ UU–3)
\]

where:

\( CO2T,r \) = Annual mass of CO\(_2\) received in containers r (metric tons).

\( C_{CO2,p,r} \) = Quarterly CO\(_2\) concentration measurement in flow for flow meter r in quarter p (vol. percent CO\(_2\), expressed as a decimal fraction).

\( p \) = Quarter of the year.

\( r \) = Receiving flow meter.

(b) You must calculate and report the annual mass of CO\(_2\) received in containers using the procedures specified in either paragraph (b)(1) or (b)(2) of this section.

(1) If you are measuring the mass of contents in a container under the provisions of §98.474(a)(2)(i), you must calculate the CO\(_2\) received in containers using Equation UU–1 of this section.

where:

\( CO2T,r \) = Annual mass of CO\(_2\) received in containers r (metric tons).

\( C_{CO2,p,r} \) = Quarterly CO\(_2\) concentration measurement of contents in containers r in quarter p (wt. percent CO\(_2\), expressed as a decimal fraction).

\( Q_{r,p} \) = Quarterly mass of contents in containers r in quarter p (metric tons).

\( S_{r,p} \) = Quarterly mass of contents in containers r that is redelivered to another facility without being injected into your well in quarter p (standard cubic meters).

\( p \) = Quarter of the year.

\( r \) = Containers.

(2) If you are measuring the volume of contents in a container under the provisions of §98.474(a)(2)(ii), you must calculate the CO\(_2\) received in containers using Equation UU–2 of this section.
§ 98.474 Monitoring and QA/QC requirements.

(a) CO₂ received.

(1) You must determine the quarterly flow rate of CO₂ received by pipeline by following the most appropriate of the following procedures:
   (i) You may measure flow rate at the receiving custody transfer meter prior to any subsequent processing operations at the facility and collect the flow rate quarterly.
   (ii) If you took ownership of the CO₂ in a commercial transaction, you may use the quarterly flow rate data from the sales contract if it is a one-time transaction or from invoices or manifests if it is an ongoing commercial transaction with discrete shipments.
   (iii) If you inject CO₂ from a production process unit that is part of your facility, you may report the quarterly CO₂ concentration of the CO₂ stream supplied that was measured following procedures provided in subpart PP of this part as the quarterly CO₂ concentration of the CO₂ stream received.

(2) You must assume that the CO₂ you receive meets the definition of a CO₂ stream unless you can trace it through written records to a source other than a CO₂ stream.

(ii) You may determine the volume of the contents of containers summed quarterly.

(iii) If you took ownership of the CO₂ in a commercial transaction, you may use the quarterly mass or volume of contents from the sales contract if it is a one-time transaction or from invoices or manifests if it is an ongoing commercial transaction with discrete shipments.

(3) You must determine a quarterly concentration of the CO₂ received that is representative of all CO₂ received in that quarter by following the most appropriate of the following procedures:
   (i) You may sample the CO₂ stream at least once per quarter at the point of receipt and measure its CO₂ concentration.
   (ii) If you took ownership of the CO₂ in a commercial transaction for which the sales contract was contingent on CO₂ concentration, and if the supplier of the CO₂ sampled the CO₂ stream in a quarter and measured its concentration per the sales contract terms, you may use the CO₂ concentration data from the sales contract for that quarter.
   (iii) If you inject CO₂ from a production process unit that is part of your facility, you may report the quarterly CO₂ concentration of the CO₂ stream supplied that was measured following procedures provided in subpart PP of this part as the quarterly CO₂ concentration of the CO₂ stream received.

(b) Measurement devices.

(1) All flow meters must be operated continuously except as necessary for maintenance and calibration.

(2) You must calibrate all flow meters used to measure quantities reported in §98.476 according to the calibration and accuracy requirements in §98.3(b).

(3) You must operate all measurement devices according to one of the following. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or an industry standard practice. Consensus-based