

GUIDANCE FOR COLORADO GHG FORM & CALCULATION TOOL FORM APCD-500

The Air Pollution Control Division (the Division) has created the Greenhouse Gas (GHG) Form & Calculation Tool to aid sources in Colorado with the permitting requirements of the Title V Operating Permit Program and the Prevention of Significant Deterioration (PSD) Program. This form should be used to report emissions of GHG as defined in Air Quality Control Commission (AQCC) Regulation No. 3, Part A. A complete list of the GHGs that this form supports is listed in 40 CFR Part 98, Subpart A, Table A-1. An Air Pollution Emission Notice (APEN) may, but not always, need to accompany this GHG form.

Note: This form should NOT be used to report emissions of GHG as required by the Mandatory Reporting of Greenhouse Gas Rule, as promulgated by the U.S. Environmental Protection Agency (EPA). Instead, sources subject to reporting under that rule should refer to the EPA guidance website: <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>.

Information provided in this guidance document:

- When should this form be submitted?
- What information should I provide on the form?
- What should be submitted with this form?
- How do I calculate my facility's Potential to Emit (PTE)?
- What emission factors and/or models are available for calculating GHG emissions?

When should this form be submitted?

The GHG Form & Calculation Tool must be submitted in any of the following situations:

- 1) When applying for a synthetic minor GHG limit.
- 2) When submitting a PSD or Nonattainment New Source Review (NANSR) permit application.
- 3) When applying for a construction permit modification;
 - a. if your facility is a Major Stationary Source as defined in Regulation No. 3, Part D, Section II.A.24. and the modification has a GHG significant net emissions increase of 75,000 tons per year (tpy) carbon dioxide equivalent (CO₂e) AND 0 tpy total GHG mass emissions or more; or

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- b. if your facility is an existing minor source and the modification is major by itself based on GHG emissions (i.e. $\geq 100,000$ tpy CO₂e and 100 or 250 tpy [depending on the Source Category] total GHG mass emissions [not CO₂e]).¹
- 4) When requested by the Division.

If your facility has the Potential to Emit of over 100,000 tpy CO₂e emissions but you are not undergoing any type of permit action you must simply notify the Division that you are a major source of GHG emissions when you submit your next request for a permit action.

What information should I provide on the form?

Permit Number

For new permit applications, leave this blank. For modifications to existing permits, please list the current permit number issued by the Division.

Plant AIRS ID Number

For new permit applications, leave this blank. For modifications to existing permits, please list the emissions point AIRS ID previously issued by the Division. An AIRS ID has the format xxx-yyyy, where xxx is the three digit county code in which the point is located and yyyy is a four digit number assigned by the Division for the facility.

Point AIRS ID (column 1)

For new permit applications, leave this blank. For modifications to existing permits, please list the emissions point AIRS ID previously issued by the Division. An AIRS ID has the format xxx-yyyy-zzz, where xxx is the three digit county code in which the point is located, yyyy is a four digit number assigned by the Division for the facility, and zzz is a three digit number assigned by the Division for the point. The “zzz” is what goes in this column.

GHG Emitted: Chemical Name (column 3)

Note that the third column entitled “GHG Emitted: Chemical Name” has a drop down menu.

GHG Global Warming Potential (column 4)

This value is automatically generated based on the chemical selected in column 3.

¹ EPA has stated that the GHG emissions from existing minor facilities undergoing a modification that increases the GHG emissions from the facility by $\geq 100,000$ tpy CO₂e are subject to regulation, and thereby potentially subject to PSD review. This matter is currently under review. (See “PSD and Title V Permitting Guidance for Greenhouse Gases” [March 2011], Section II.C.1.b.)

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GHG Controls and GHG Control Efficiencies (columns 5 and 6)

Note that any controls and control efficiencies you indicate should be for GHG control only, not for criteria pollutants.

Potential to Emit (column 7)

The Potential to Emit (PTE) should be entered into the appropriate row for each greenhouse gas selected in the "Chemical Name" column (column 3) and should be provided in units of tons per year. The controlled value will be automatically calculated using the GHG control efficiency entered in the "GHG Control Efficiencies" column (column 6).

Unless the facility-wide total of GHG, excluding insignificant activities, exceeds 80,000 tpy CO₂e, insignificant activities generally do not need to be included on this GHG Form. Insignificant activities include those which are APEN-exempt or which are identified as insignificant activities in Regulation No. 3, Part C, Section II.E. Notwithstanding the above, if emissions from any insignificant activity exceed 20,000 tpy CO₂e or there are a number of insignificant activities that emit GHG (e.g., numerous small boilers or process heaters), emissions from insignificant activities shall be included on the GHG Form.

Requested Emissions

A source may voluntarily request a synthetic minor construction permit to limit the PTE to less than major thresholds (see Regulation No. 3, Part B, Section II.A.7.). This level will be your permit limit (maximum allowed). The emission level should relate to the annual requested fuel use, raw material, finished product, or other process level at your facility (see Regulation No. 3, Part B, Section II.A.4.). Permit limits will be in the form of total CO₂e (e.g. X ton/yr CO₂e), thus, requested limits should be based on CO₂e emissions, not individual GHG pollutants.

What should be submitted with this form?

Minor GHG sources

This form is not required for minor sources of GHG, unless such information is specifically requested by the Division. Sources should be prepared to inform the permit engineer or inspector of the facility's GHG major status.

Synthetic minor GHG sources

Along with the GHG Form and Calculation Tool, operators should submit all information necessary to verify emission calculations and set appropriate limits, including:

- 1) emission calculation methodology,
- 2) equipment sizing and design capabilities,
- 3) emission factors and their source,
- 4) emission calculation model runs, and

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- 5) any other necessary information.

An APEN containing the design capacity, requested process limitations, and requested criteria pollutant emissions is required to obtain a synthetic minor construction permit.

Major Sources

No additional information should be submitted with a permit application for sources applying for or updating their Title V operating permit, unless more information is specifically requested by the Division.

Major Stationary Sources

Along with the GHG Form and Calculation Tool, operators should submit all information necessary to verify emission calculations and determine appropriate the best available control technology (BACT) requirements, including:

- 1) emission calculation methodology,
- 2) equipment sizing and design capabilities,
- 3) emission factors and their source,
- 4) emission calculation model runs,
- 5) control proposal comparison and costs, and
- 6) any other necessary information.

An APEN containing the design capacity, requested process limitations, and requested criteria pollutant emissions is required to obtain a PSD construction permit.

How do I calculate my facility's Potential to Emit (PTE)?

The PTE calculation, absent a federally enforceable emissions and process limit on GHG specifically, should assume maximum design capacity and 8760 hours of operation annually. The GHG thresholds are based on the PTE and NOT the actual controlled or uncontrolled emissions.

- 1) The PTE calculation for GHG DOES NOT include limitations on GHG emissions achieved by control requirements for other pollutants. If the source has a federally enforceable requirement which limits throughput, hours of operation, or another processing parameter or a federally enforceable requirement to install a specific control device and that requirement would also reduce the emissions of GHG, then the PTE calculation for GHG should ONLY be reduced to the emissions calculated using the limited values if the source also has a GHG emissions limit.
- 2) The PTE calculation may be limited by a federally enforceable control requirement for GHG, such as a New Source Performance Standard (NSPS).
- 3) Emissions from insignificant activities do count toward the facility PTE, and should be considered in determining the facility's major status.

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However, unless the facility-wide total of GHG, excluding insignificant activities, exceeds 80,000 tpy CO₂e, insignificant activities generally do not need to be included on this GHG Form. Insignificant activities include those which are APEN-exempt or which are identified as insignificant activities in Regulation No. 3, Part C, Section II.E. Notwithstanding the above, if emissions from any insignificant activity exceed 20,000 tpy CO₂e or there are a number of insignificant activities that emit GHG (e.g., numerous small boilers or process heaters), emissions from insignificant activities shall be included on the GHG Form.

What emission factors and/or models are available for calculating GHG emissions?

Example emission factor sources/methods include: EPA's AP-42, manufacturer's emission factors, stack test results, and mass balance calculations. If emission estimations are based upon methods other than those supplied by the Division or EPA, sufficient supporting documentation must be included. See the links below for a few helpful resources.

<http://www.epa.gov/ttn/chief/ap42/index.html>

<http://www.epa.gov/nsr/ghgresources.html>

<http://www.epa.gov/ttn/chief/efpac/esttools.html>

<http://www.epa.gov/nsr/ghgresources.html>