Underground Coal Mines

Subpart FF, Greenhouse Gas Reporting Program

Under the Greenhouse Gas Reporting Program (GHGRP), owners or operators of facilities that liberate 36,500,000 actual cubic feet (acf) of methane (CH_4) or more per year (equivalent to 100,000 acf of CH_4 or more per day) must report emissions from underground coal mines and all other source categories located at the mine for which methods are defined in the rule. Owners and operators are required to collect emission data; calculate greenhouse gas (GHG) emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting per the requirements of 40 CFR Part 98 Subpart FF – Underground Coal Mines.

How Is This Source Category Defined?

This source category consists of both underground mines under development and underground mines categorized by the Mine Safety & Health Administration (MSHA) as active (where coal is currently being produced or has been produced within the previous 90 days). It includes all underground coal mines that have operational pre-mining and post-mining degasification systems. Abandoned (closed) mines, surface coal mines, and post-coal mining activities are not included in this source category.

This source category consists of the following emission points:

- Each ventilation shaft.
- Each degasification system well, including degasification systems deployed before, during, or after mining operations.

CH_4 liberation in the reporting year (including both emitted methane and methane that is combusted) from each ventilation shaft and each degasification well must be included; however, monitoring for each system type may take place at one or more centralized monitoring points that cover all emissions points within that system.

What Greenhouse Gases Must Be Reported?

Underground coal mine owners and operators must report:

- Quarterly CH_4 liberation from each ventilation shaft or each centralized ventilation system monitoring point.
- Weekly CH_4 liberated from each degasification system or each centralized degasification system monitoring point.
- Weekly CH_4 destruction from each destruction device or point of offsite transport.
- Quarterly carbon dioxide (CO_2) emissions from on-site coal mine gas CH_4 destruction where the gas is not a fuel input for energy generation or use.
- Annual CO_2, and nitrous oxide (N_2O) emissions from stationary fuel combustion devices using the calculation methods specified in 40 CFR Part 98, subpart C (General Stationary Combustion Sources). The information sheet on general stationary fuel combustion sources summarizes calculating and reporting emissions from these sources.

In addition, each facility must report GHG emissions for any other source categories for which calculation methods are provided in other subparts of the rule, as applicable.

How Must Greenhouse Gas Emissions Be Calculated?

Total annual CH_4 emissions are the sum of CH_4 liberated from ventilation shafts and degasification systems, less the quantity of CH_4 that is collected and destroyed.

- For ventilation shafts, liberated CH_4 is determined by quarterly or more frequent sampling using grab samples or obtaining MSHA quarterly data, or continuous monitoring of flow rate and CH_4 concentration.
- For degasification systems, liberated CH_4 is determined by weekly or more frequent sampling, or continuous monitoring of flow rate and CH_4 concentration.
- CH_4 destroyed is determined by continuous monitoring of flow rate and CH_4 concentration of gas collected for destruction and by applying a destruction efficiency rate.

CO_2 emissions from CH_4 destruction are estimated by applying a factor to the estimate of CH_4 destroyed.

A checklist for data that must be monitored is available at: https://www.epa.gov/ghgreporting/monitoring-checklist-subpart-ff-underground-coal-mines.

What Information Must Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), each underground coal mine must report the following information:

- The seven-digit MSHA Identification Number. If the report includes multiple operations that meet the definition of a single facility in subpart A "Definitions," all applicable MSHA ID numbers must be included in the report.
- A description of all ventilation, degasification and destruction systems including a description of each well or shaft and whether the well or shaft is monitored individually or as part of a centralized monitoring point.
- Dates in the reporting period where active ventilation of mining operations is taking place, dates where degasification of mining operations is taking place, and dates when continuous monitoring equipment (if used) is not properly functioning.
- Quarterly volumetric flow rate (acfm or scfm) and quarterly CH_4 concentration, for each ventilation system. If MSHA quarterly reports are used as the ventilation monitoring method, the MSHA reports must be submitted.
- Weekly volumetric flow (acfm or scfm) and quarterly CH_4 concentration for CH_4 liberated from each degasification system.
- Quarterly CH_4 liberated from each ventilation shaft and from each degasification system.
- For both ventilation and degasification, temperature (°Rankine), absolute pressure (atm) and moisture content must be measured and reported.
- Measurement of volumetric flow and concentration on a wet basis or a dry basis; if different or a flow meter is used and does not automatically correct for moisture content, a moisture correction factor must be applied.
- For recovered gas, disposition of the CH_4 liberated: destroyed on-site, transported off-site and destroyed, or transported off-site and not destroyed.
- The weekly and quarterly volumetric flow used and CH_4 concentrations used to calculate CH_4 destruction on-site or transportation off-site.

- For on-site destruction, a description of the primary and any backup destruction devices, and the annual operating hours and destruction efficiency rates for all applicable destruction devices. Net quarterly CH_4 emissions: total CH_4 liberated less CH_4 destroyed on-site and/or transported off-site.

Under Subpart FF, facilities must also report quarterly CO_2 emissions from onsite destruction of coal mine CH_4, where the gas is not a fuel input for energy generation or use.

If data for CH_4 concentration, volumetric flow rate, temperature, pressure, moisture content, and moisture correction factor (if required) are missing, substitute data are required and must be determined using procedures outlined in the rule.

When and How Must Reports Be Submitted?

Annual reports must be submitted by March 31 of each year, unless the 31st is a Saturday, Sunday, or federal holiday, in which case the reports are due on the next business day. Annual reports must be submitted electronically using the electronic Greenhouse Gas Reporting Tool (e-GGRT), the GHGRP's online reporting system. Additional information on setting up user accounts, registering a facility and submitting annual reports is available at https://ccdsupport.com/confluence/.

When Can a Facility Stop Reporting?

There are several scenarios under which a facility may discontinue reporting. These scenarios are summarized in the Subpart A Information Sheet as well as in an FAQ.

For More Information

For additional information on Subpart FF, visit the Subpart FF Resources webpage. For additional information on the Greenhouse Gas Reporting Program, visit the Greenhouse Gas Reporting Program Website, which includes information sheets on other rule subparts, data previously reported to the Greenhouse Gas Reporting Program, training materials, and links to frequently asked questions.

This document is provided solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. The series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the Greenhouse Gas Reporting Program.