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# Subpart RR - Geologic Sequestration of Carbon **Dioxide**



🖶 A printer-friendly version (pdf) (13 pp, 2,444K) of GHG reporting instructions for this subpart

Please select a help topic from the list below:

- Using e-GGRT to Prepare Your Subpart RR Report
  - Subpart RR R&D Project Exemption Request
  - Subpart RR MRV Plan Extension Request
  - Subpart RR Proposed MRV Plan Submission
- · Carry forward of data from previous submissions into RY2012 forms
- Subpart RR Rule Guidance
- Subpart RR Rule Language (eCFR)

#### Additional Resources:

- · Part 98 Terms and Definitions
- · Frequently Asked Questions (FAQs)
- Webinar Slides

## Using e-GGRT to Prepare Your Subpart RR Report

This page provides an overview of sub-topics that are central to Subpart RR - Geologic Sequestration of Carbon Dioxide.

Subpart RR - Geologic Sequestration of Carbon Dioxide reporting:

- Overview of Subpart RR
- Subpart RR R&D Project Exemption Request
- Subpart RR MRV Plan Extension Request
- Subpart RR Proposed MRV Plan Submission

If you previously reported for Reporting Year (RY) 2011, the Agency has carried some of your RY2011 data forward and entered it in your RY2012 forms to reduce the reporting burden. It is still your responsibility to review and ensure that all of the information in your submission is correct, but the Agency believes that most of the data which is carried forward is unlikely to change significantly from year to year. For more information about carry forward data, please see the Carry forward of data from previous submissions into RY2012 forms help content.

The end of this page contains links you can use for more information on these topics.

#### Overview of Subpart RR

Under Subpart RR, facilities that conduct geologic sequestration by injecting a CO2 stream for long-term containment in subsurface geologic formations, including Underground Injection Control (UIC) Class VI wells, are required to:

- Report basic information on CO<sub>2</sub> received for injection (40 CFR 98.446).
- Develop and implement an EPA-approved site-specific monitoring, reporting, and verification (MRV) plan (40 CFR 98.448).
- Report the amount of CO<sub>2</sub> geologically sequestered using a mass balance approach and annual monitoring activities (40 CFR 98.446).

Facilities that conduct enhanced oil and gas recovery are not required to report geologic sequestration under Subpart RR unless:

- the owner or operator chooses to opt-in to Subpart RR (40 CFR 98.440(c)(1)), or
- the facility holds a UIC Class VI permit for the well or group of wells used to enhance oil and gas recovery (40 CFR 98.440(c)(2))

R&D projects will be granted an exemption from Subpart RR provided they meet the eligibility requirements (40 CFR 98.440). EPA will consider a project eligible if it meets the Subpart RR definition of an R&D project: "a project for the purpose of investigating practices, monitoring techniques, or injection verification, or engaging in other applied research, that will enable safe and effective long-term containment of a CO<sub>2</sub> stream in subsurface geologic formations, including research and short duration CO2 injection tests conducted as a precursor to long-term storage" (40 CFR 98.449).

#### **Submissions Schedule:**

- 1. Register your facility and submit your Certificate of Representation 60 days before making a submission under Subpart RR (according to the provisions in 40 CFR 98.4).
- 2. Submit a proposed MRV plan, MRV plan submission extension request (up to 180 day extension), or R&D project exemption request through e-GGRT by the following deadlines (according to the provisions in 40 CFR 98.448(b)):
  - If you were issued a final UIC permit authorizing the injection of CO<sub>2</sub> into the subsurface on or before December 31, 2011, you must submit a proposed MRV plan, MRV plan extension request, or R&D project exemption request by June 30, 2012
  - If you were issued a final UIC permit authorizing the injection of CO<sub>2</sub> into the subsurface on or after January 1, 2012, you must submit a proposed MRV plan, MRV plan extension request, or R&D project exemption request within 180 days of receiving a final UIC permit
  - If you are injecting a CO<sub>2</sub> stream in subsurface geologic formations to enhance the recovery of oil or natural gas and you are not permitted as Class VI under the UIC Program, you may opt to submit an MRV plan at any
- 3. Submit annual reports through e-GGRT (40 CFR 98.446).

The image below displays the Subpart RR Overview page:

Click image to expand SEPA Unit **e**-GGRT

#### **R&D Project Exemption Request**

The following information is required when submitting an R&D Exemption Request:

- Name of Project
- Estimated CO<sub>2</sub> injection Start Date
- Estimated CO<sub>2</sub> injection End Date
- · Class of UIC permit
- Date of submission of the UIC permit application
- UIC permit Start Date
- UIC permit End Date
- Source and type of funding
- Research Purpose
- Proposed CO<sub>2</sub> injection volumes

#### **MRV Plan Extension Request**

The following information is required when submitting an MRV Plan Extension Request:

- Name of Project
- Date of final UIC permit (or legal instrument for an offshore facility not subject to the Safe Drinking Water Act) authorizing subsurface injection of CO2
- Number of days requested for extending the MRV plan due date (180 days maximum)

#### **Proposed MRV Plan Submission**

Subpart RR requires you to develop and submit a proposed MRV plan for monitoring, reporting, and verification of geologic sequestration at the facility. Your proposed MRV plan must contain the following components:

- Delineation of the maximum monitoring area and the active monitoring areas
- Identification of potential surface leakage pathways for CO<sub>2</sub> in the maximum monitoring area and the likelihood, magnitude, and timing, of surface leakage of CO<sub>2</sub> through these pathways
- A strategy for detecting and quantifying any surface leakage of CO<sub>2</sub>
- A strategy for establishing the expected baselines for monitoring CO<sub>2</sub> surface leakage
- A summary of the considerations you intend to use to calculate site-specific variables for the mass balance equation
- · Permitting information
- Proposed date to begin collecting data for calculating total amount sequestered according to equation RR-11 or RR--12 of Subpart RR

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### Subpart RR R&D Project Exemption Request

This page describes the requirements of a R&D Project Exemption Request under Subpart RR - Geologic Sequestration of Carbon Dioxide as well as instructions for submitting a R&D Project Exemption Request to the EPA using e-GGRT.

#### **R&D Project Exemption Request Requirements**

R&D projects will be granted an exemption from Subpart RR provided they meet the Subpart RR eligibility requirements for an R&D project (40 CFR 98.440). The facility must apply for an R&D project exemption, and then EPA will make a determination about the eligibility of a facility to receive an R&D project exemption for Subpart RR.

EPA will consider a project eligible if it meets the Subpart RR definition of an R&D project: "a project for the purpose of investigating practices, monitoring techniques, or injection verification, or engaging in other applied research, that will enable safe and effective long-term containment of a CO<sub>2</sub> stream in subsurface geologic formations, including research and short duration CO<sub>2</sub> injection tests conducted as a precursor to long-term storage" (40 CFR 98.449)

Per 40 CFR 98.440(d)(2), a submission in support of an exemption as a research and development project must contain the following information:

- The planned duration of CO<sub>2</sub> injection for the project.
- The planned annual CO2 injection volumes during this time period.
- The research purposes of the project.
- The source and type of funding for the project.
- The class and duration of Underground Injection Control permit or, for an offshore facility not subject to the Safe Drinking Water Act, a
  description of the legal instrument authorizing geologic sequestration.

The entire content of the exemption request is important and will be considered in EPA's decision making process. The research purpose in the reporter's request provides a key piece of information on which EPA will base its decision to grant or deny the R&D project exemption request. EPA encourages reporters applying for an exemption to provide detailed information about the research purpose. EPA will also take into account any information the reporter submits demonstrating that the planned duration of CO<sub>2</sub> injection for the project and the planned annual CO<sub>2</sub> injection volumes during the duration of the project are consistent with the purpose of the R&D project.

#### Submitting an R&D Project Exemption Request

To request an R&D Project Exemption, click the link titled "ADD a R&D Project Exemption Request" below the R&D PROJECT EXEMPTION REQUEST table on the Subpart RR Overview page.



On the R&D Project Exemption Request page, enter the following required information:

- Name of Project
- Estimated CO<sub>2</sub> injection Start Date Click to choose the date
- Estimated CO<sub>2</sub> injection End Date Click to choose the date
- Class of Underground Injection Control permit (specify if other)
- Indicate the UIC class and date of submission of the permit application
- Underground Injection Control permit Start Date Click to choose the date
- Underground Injection Control permit End Date Click to choose the date
- · Source and type of funding
- Research Purpose include planned annual CO<sub>2</sub> injection volumes

When finished, click SAVE.



If you have completed and are satisfied with your R&D Project Exemption Request you may proceed to certify and submit. This process includes applying your electronic signature (entering your password and answering a challenge/security question).

To submit and certify your uploaded R&D Project Exemption Request, click the SUBMIT and CERTIFY button.



Please note that clicking on the SUBMIT and CERTIFY button will submit your R&D Project Exemption Request to EPA. You will not be permitted to cancel the submission - you will be required to certify/sign the request before you will be permitted to submit a subsequent revision to your R&D Project Exemption Request.

Review the SUBMISSION INFORMATION, CERTIFICATION STATEMENT, and AGENT CERTIFICATION STATEMENT and if you agree to the terms of the CERTIFICATION STATEMENT, enter your e-GGRT password and click SUBMIT. When prompted, answer your challenge question to confirm your identity and click SUBMIT once more.

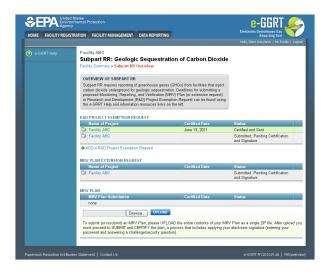
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E-GGRT will then generate a confirmation page which may be printed for your records. Once you have reviewed the submission confirmation, click HOME to return to the Subpart RR Overview page.



On the Subpart RR Overview page, the status and certification date in the R&D PROJECT EXEMPTION REQUEST table will update automatically.



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## **Subpart RR MRV Plan Extension Request**

This page describes the requirements of an MRV Plan Extension Request under Subpart RR - Geologic Sequestration of Carbon Dioxide as well as instructions for submitting an MRV Plan Extension Request to the EPA using e-GGRT.

#### **MRV Plan Extension Request Requirements**

You must submit a proposed MRV plan to EPA according to the following schedule (according to the provisions at 40 CFR 98.448(b)):

- If you have been issued a final UIC permit authorizing the injection of CO<sub>2</sub> into the subsurface, you must submit a proposed MRV plan, MRV plan extension request, or R&D project exemption request within 180 days of receiving a final UIC permit. You will be allowed to request one extension of the submittal date of up to an additional 180 days.
- If you are injecting a CO<sub>2</sub> stream in subsurface geologic formations to enhance the recovery of oil or natural gas and you are not permitted as Class VI under the UIC Program, you may opt to submit an MRV plan at any time.

#### **Submitting an MRV Plan Extension Request**

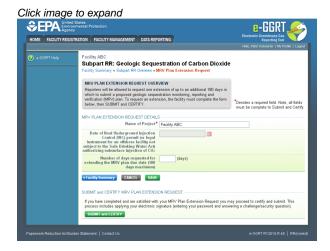
To request an MRV Plan extension, click the link titled "ADD a MRV Plan Extension Request" below the MRV PLAN EXTENSION REQUEST table on the Subpart RR Overview page.



On the MRV Plan Extension Request page, enter the following required information:

- Name of Project
- Date of final Underground Injection Control (UIC) permit (or legal instrument for an offshore facility not subject to the Safe Drinking Water Act) authorizing subsurface injection of CO<sub>2</sub>
- Number of days requested for extending the MRV plan due date (180 days maximum)

When finished, click SAVE.



If you have completed and are satisfied with your MRV Plan Extension Request you may proceed to certify and submit. This process includes applying your electronic signature (entering your password and answering a challenge/security question).

To submit and certify your uploaded MRV Plan Extension Request, click the SUBMIT and CERTIFY button.



Please note that clicking on the SUBMIT and CERTIFY button will submit your MRV Plan Extension Request to EPA. You will not be permitted to cancel the submission - you will be required to certify/sign the request before you will be permitted to submit a subsequent revision to your MRV Plan Extension Request.

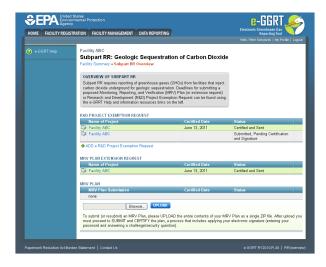
Review the SUBMISSION INFORMATION, CERTIFICATION STATEMENT, and AGENT CERTIFICATION STATEMENT and if you agree to the terms of the CERTIFICATION STATEMENT, enter your e-GGRT password and click SUBMIT. When prompted, answer your challenge question to confirm your identity and click SUBMIT once more.



E-GGRT will then generate a confirmation page which may be printed for your records. Once you have reviewed the submission confirmation, click HOME to return to the Subpart RR Overview page.



On the Subpart RR Overview page, the status and certification date in the MRV PLAN EXTENSION REQUEST table will update automatically. Click image to expand



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## **Subpart RR Proposed MRV Plan Submission**

This page describes the requirements of a proposed MRV Plan under Subpart RR - Geologic Sequestration of Carbon Dioxide as well as instructions for submitting a proposed MRV Plan to the EPA using e-GGRT.

#### **Proposed MRV Plan Submission Requirements**

Subpart RR requires you to develop and submit a proposed MRV plan for monitoring, reporting, and verification of geologic sequestration at the facility. According to the provisions at 40 CFR 98.448(a), your proposed MRV plan must contain the following components:

- Delineation of the maximum monitoring area and the active monitoring areas. The first period for your active monitoring area will begin from the date determined in your MRV plan through the date at which the plan calls for the first expansion of the monitoring area. The length of each monitoring period can be any time interval chosen by you that is greater than 1 year.
- Identification of potential surface leakage pathways for CO<sub>2</sub> in the maximum monitoring area and the likelihood, magnitude, and timing, of surface leakage of CO<sub>2</sub> through these pathways.
- A strategy for detecting and quantifying any surface leakage of CO<sub>2</sub>.
- A strategy for establishing the expected baselines for monitoring CO<sub>2</sub> surface leakage.
- A summary of the considerations you intend to use to calculate site-specific variables for the mass balance equation. This includes, but is not limited to, considerations for calculating equipment leakage and vented emissions between the injection flow meter and injection well and/or the production flow meter and production well, and considerations for calculating CO<sub>2</sub> in produced fluids.
- Permitting information:
  - If a well is permitted under the Underground Injection Control program, for each injection well, report the well identification number used for the Underground Injection Control permit and the Underground Injection Control permit class.
  - If the well is not yet permitted, and you have applied for an Underground Injection Control permit, report the well identification numbers in the permit application. If you are submitting your Underground Injection Control permit application as part of your proposed MRV plan, you must notify EPA when the permit has been approved.
  - If an offshore well is not subject to the Safe Drinking Water Act, for each injection well, report any well identification number and
    any identification number used for the legal instrument authorizing geologic sequestration.
  - If you are an offshore facility not subject to the Safe Drinking Water Act, and are submitting your application for the legal
    instrument authorizing geologic sequestration as part of your proposed MRV plan, you must notify EPA when the legal
    instrument authorizing geologic sequestration has been approved.
- Proposed date to begin collecting data for calculating total amount sequestered according to equation RR-11 or RR-12 of Subpart RR. This date must be after expected baselines as required by 40 CFR 98.448(a)(4) of this section are established and the leakage detection and quantification strategy as required by 40 CFR 98.448(a)(3) of this section is implemented in the initial active monitoring area.
- EPA has provided information in the Subpart RR General Technical Support Document on the technical evaluation of MRV plans, including illustrative examples describing the types of information that may be included in the MRV plan to fulfill the regulatory requirements at 40 CFR 98.448. This includes delineating the monitoring area, both the maximum area that the CO<sub>2</sub> plume is predicted to cover and how monitoring can be phased in over this area; selecting leakage detection systems that are suitable for the site; determining and verifying that a leak has occurred; identifying baseline conditions; and quantifying a CO<sub>2</sub> leak once a leak has been

#### **Submitting an MRV Plan Proposal**



To submit (or resubmit) an MRV Plan, the entire contents of your MRV Plan must be packaged into a single ZIP file.

To submit (or resubmit) an MRV Plan, please UPLOAD the entire contents of your MRV Plan as a single ZIP file. After upload you must proceed to SUBMIT and CERTIFY the plan, a process that includes applying your electronic signature (entering your password and answering a challenge/security question).

To upload your MRV Plan, click the gray BROWSE button below the MRV PLAN table near the bottom of the screen on the Subpart RR Overview Page.

Click image to expand

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HOME FACILITY ANALOGMENT DATA REPORTING

Facility ABC

Subpart RR: Geologic Sequestration of Carbon Dioxide

Facility Commany - Subpart RR Overview

OVERVIEW OF SUBPART RR

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Browse..

In the File Upload window that appears, navigate to the folder containing your MRV Plan ZIP file, select the file, and click the OPEN button in the lower right of the window. The filepath of your MRV Plan ZIP file will appear in the text box immediately left of the BROWSE button on the Subpart RR Overview screen.

To complete the upload process, click the blue UPLOAD button immediately to the right of the BROWSE button. Your MRV Plan will appear in the MRV Plan table with a status of "Uploaded." A green SUBMIT and CERTIFY button will also appear below the MRV PLAN table.



If the uploaded MRV Plan is ready to send to EPA you should proceed to submit and certify. The certification process includes applying your electronic signature (entering your password and answering a challenge/security question).

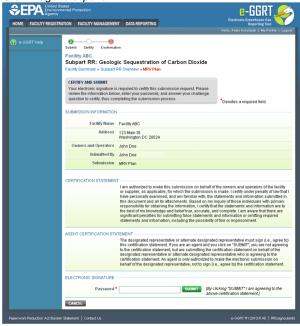
To submit and certify your uploaded MRV Plan, click the SUBMIT and CERTIFY button.



Please note that clicking on the SUBMIT/CERTIFY button will submit your MRV Plan to EPA. You will not be permitted to cancel the submission - you will be required to certify/sign the plan before you will be permitted to submit a subsequent revision to your MRV Plan.

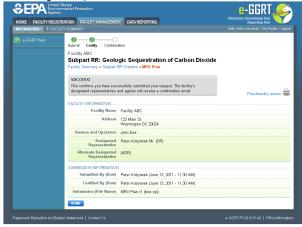
Review the SUBMISSION INFORMATION, CERTIFICATION STATEMENT, and AGENT CERTIFICATION STATEMENT and if you agree to the terms of the CERTIFICATION STATEMENT, enter your e-GGRT password and click SUBMIT. When prompted, answer your challenge question to confirm your identity and click SUBMIT once more.

Click image to expand

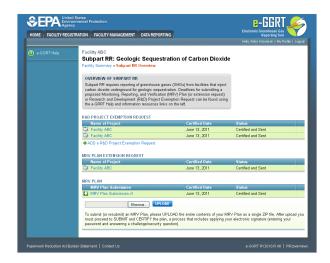


E-GGRT will then generate a confirmation page which may be printed for your records. Once you have reviewed the submission confirmation, click HOME to return to the Subpart RR Overview page.

Click image to expand



On the Subpart RR Overview page, the status and certification date in the MRV PLAN table will update automatically.



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