

OVERVIEW: ACCOUNTING OF CARBON STORAGE THROUGH ENHANCED OIL RECOVERY

Navigating Aspects of EPA's Underground Injection Control Program and Greenhouse Gas Reporting Program Related to the Section 45Q Tax Credit

Carbon Capture Coalition participants believe it benefits all parties to have an informed and factual discussion of the current federal regulatory framework for taxpayers to demonstrate secure geologic storage of carbon dioxide (CO₂) through enhanced oil recovery (EOR), for the purposes of claiming the 45Q tax credit. Coalition participants also recognize that some parties are currently seeking changes to the existing regulatory framework. Through this overview, the Coalition does not seek to advance any specific policy position. Instead, it aims to provide accurate information and help clarify misperceptions regarding the current landscape of federal regulations governing secure geologic storage of CO₂ through EOR projects that use anthropogenic CO₂.

BACKGROUND

In February 2018, Congress enacted an expansion and reform of the Section 45Q tax credit¹ for carbon storage (also referred to as sequestration) and beneficial use of CO₂. Both the previous and new versions of the statute require secure geological storage² of the injected CO₂ in order for taxpayers to be eligible for the credit.

In the Internal Revenue Service (IRS) guidance³ on 45Q, the service instructs taxpayers to follow rules for demonstrating geologic storage as established by the US Environmental Protection Agency (EPA) in order to be eligible for the credit. The EPA recognizes that injecting CO₂ captured from industrial facilities (including power plants) for EOR can result in secure geologic storage of that CO₂, even when the primary purpose of the injection is to produce additional oil.⁴

¹ Passed as part of the Bipartisan Budget Act of 2018, Sec. 41119. Enhancement of carbon dioxide sequestration credit.

² Section 45Q requires taxpayers claiming credit for CO₂ storage to dispose of the CO₂ in secure geological storage. As stated in IRS notice 2009-83, 2009-44 I.R.B. 588, the term "secure geological storage" includes storage at deep saline formations, oil and gas reservoirs, and unmineable coal seams under such conditions the Secretary [of Treasury] may determine under regulations. Notice 2009-83 is available at www.irs.gov/irb/2009-44_IRB/ar11.html.

³ IRS Notice 2009-83.

⁴ See memorandum from Peter C. Grevatt, director, Office of Ground Water and Drinking Water, US EPA, to EPA's Regional Water Division Directors on "Key Principles in EPA's Underground Injection Control Program Class VI Rule Related to Transition of Class II Enhanced Oil or Gas Recovery Wells to Class VI."

Geologic storage of CO₂ can occur:

- incidentally through commercial oil and gas operations, such as through CO₂ injection for EOR; and
- through projects where CO₂ is injected in deep geologic formations for the purpose of storage, such as deep saline formations.⁵

The Coalition developed this overview as a tool to help navigate and provide clarity on how, within the current federal regulatory framework, a taxpayer demonstrates secure geological storage, incidental to EOR operations in order to be eligible the Section 45Q tax credit. While EOR projects represent just one type of project eligible to claim credits under 45Q, there have been many questions and significant public discussion regarding the demonstration of secure geologic storage in the context of CO₂-EOR and 45Q. Therefore, this overview focuses on that particular application of the 45Q tax credit.

KEY ELEMENTS OF THE EXISTING FRAMEWORK

- IRS published guidance for taxpayers to demonstrate secure geological storage for purposes of the 45Q tax credit. Through this guidance, IRS instructs taxpayers to meet the applicable requirements established by the US EPA, including the CO₂ injection permit requirements of EPA's Underground Injection Control (UIC) program and the requirements of EPA's Final Mandatory Greenhouse Gas Reporting Program (GHGRP) rule for quantifying, verifying, and reporting geologic storage.
- IRS instructs taxpayers claiming the Section 45Q tax credit⁶ to calculate and report the amount stored according to requirements set by the US EPA's Final Mandatory Greenhouse Gas Reporting Rule for geologic storage,⁷ which is titled Subpart RR.
- Subpart RR requires:
 - an EPA-approved, site-specific and risk-based monitoring, reporting, and verification (MRV) plan; and
 - annual reporting of CO₂ stored, quantified using a mass balance approach.
- EOR projects using anthropogenic CO₂, which operate with an EPA UIC well permit, demonstrate secure geological storage for 45Q by opting in to EPA's Subpart RR reporting rule.⁸ EOR projects that are not claiming the tax credit are required to report under Subpart UU of EPA's GHGRP, described in more detail below.

⁵ Geologic sequestration (referred to as "storage" in this overview) is defined by the EPA as the "long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in geologic formations" in the "US Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide Geologic Sequestration Wells" found at 75 FR 77230, December 10, 2010, and codified in the US Code of Federal Regulations [40 CFR 146.81 et seq.]. EPA applies the UIC rules and regulations for CO₂ injection and storage to projects in part based on whether long-term geologic storage is the primary purpose of the CO₂ injection. See 75 FR 77244-77245 for a discussion by the EPA of how regulations apply to projects depending on the purpose of injection activity. For a detailed description and assessment of geologic storage opportunities in the US, see the National Energy Technology Laboratory's Carbon Storage Atlas. The most recent edition is available at <https://www.netl.doe.gov/research/coal/carbon-storage-1/atlasv>.

⁶ IRS form 8933.

⁷ See IRS Notice 2009-83 for more information on secure geological storage.

⁸ See the IRS' Office of Chief Counsel's Advisory Opinion to view the counsel's advisory opinion on how an EOR project demonstrates secure geological storage. Available at <https://www.irs.gov/pub/irs-lafa/20183701f.pdf>.

KEY ELEMENTS OF THE EXISTING FRAMEWORK (CONTINUED)

- EPA has described that the UIC program under the Safe Drinking Water Act, and the GHGRP Subpart RR for geologic storage under the Clean Air Act, complement one another; the injection well program protects drinking water sources, and the air emissions reporting program enables EPA to quantify and verify CO₂ emissions and storage.⁹
- EPA states that Subpart RR enables verification of CO₂ storage by “requiring facilities conducting GS [geologic sequestration] to develop and implement a MRV plan¹⁰ to detect and quantify leakage of injected CO₂ to the surface in the event leakage occurs and to report the amount of CO₂ geologically sequestered using a mass balance approach, regardless of the class of UIC permit that a facility holds.”¹¹ (See explanation of the different underground injection well classes below.)
- While this is an overview of the federal regulatory framework, it is important to note that states play an integral role in regulating the integrity of EOR projects. EPA has delegated regulatory primacy to most states to administer the UIC injection well program that covers EOR. These state programs entail a rigorous regulatory process and state-level requirements that meet or exceed federal requirements, or a demonstration to the EPA that a state’s requirements are effective in preventing endangerment of underground sources of drinking water.

HIGH-LEVEL SUMMARY OF KEY US EPA PROGRAMS ON THE DEMONSTRATION OF SECURE GEOLOGIC STORAGE

The IRS instructs taxpayers that seek to claim 45Q to follow EPA’s rules for geologic sequestration, which were established within a program for protecting the quality of underground sources of drinking water and a program for accounting and reporting the amount of CO₂ stored through EOR operations. The statutory authority for these programs include, respectively, the Safe Drinking Water Act and the Clean Air Act. This section provides a high-level summary of these two key US EPA programs that are required by the IRS to meet the statutory obligation of demonstrating secure geologic storage to be eligible for the Section 45Q tax credit. The description includes some related regulatory provisions to provide context for what is and what is not addressed across EPA programs that account for and/or regulate CO₂ injection and storage.

⁹ See EPA’s discussion under 75 FR 75063 (Mandatory Reporting of Greenhouse Gases: Injection and Geologic Sequestration of Carbon Dioxide, Final Rule) and 75 FR 77235 (Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO₂) of how the GHG Reporting Program and the UIC program complement one another.

¹⁰ See EPA Subpart RR footnote in 75 FR 75089: “The subpart RR MRV plan includes delineation of monitoring areas, identification and assessment of potential surface leakage pathways, a strategy for detecting and quantifying surface leakage of CO₂ if leakage occurs, an approach for establishing the expected baselines, and a summary of considerations for calculating site-specific variables for the mass balance equation, such as calculating CO₂ in produced fluids. For more information, see Section II.B of this preamble.”

¹¹ 75 FR 75063.

Underground Injection Control (UIC) program. The Safe Drinking Water Act requires EPA to protect underground sources of drinking water (USDWs) by setting requirements and other safeguards for operating underground injection wells.

There are two primary UIC well classes that cover CO₂ injection projects:

- **Class II.** Wells under this class are used to inject fluids (e.g., CO₂ and brine) that are associated with oil and natural gas production. Geologic storage of CO₂ in such operations can be incidental (e.g., CO₂-EOR).
- **Class VI.** Wells under this class are used to inject CO₂ in deep geologic formations for the purpose of storing CO₂. EPA established this well class separately from Class II to provide specific regulations for projects where the purpose is geologic storage.

Class II program implementation has been delegated by EPA to many states and is retained by EPA for all remaining states. Class VI program implementation¹² has been delegated by EPA to only one state—North Dakota—and is retained by EPA for all other states. States can be approved for this delegation of “primacy” when their regulations meet or exceed the federal UIC requirements.

Greenhouse Gas Reporting Program. The GHGRP is a federal reporting framework under the EPA’s Clean Air Act authority that quantifies and verifies greenhouse gas emissions (GHGs) from large sources of GHGs, fuel and industrial gas suppliers, and CO₂ injection sites. The program includes 41 different GHG source categories, listed as subparts, and the data collected by the EPA through the program can be used for tracking and comparing net emissions and other purposes. Reported data are verified¹³ by EPA and made public in the fall of each year.¹⁴

Subparts that are related to underground injection of CO₂ are detailed below. It is important to note that a project injecting CO₂ will report under the relevant GHGRP subpart(s) while also meeting the requirements of the EPA UIC to address various aspects of underground injection and storage of CO₂, including the protection of drinking water.

- **Subpart UU—Injection of CO₂.** UU tracks the amount of CO₂ received by EOR and enhanced gas recovery¹⁵ operations, the data used to calculate the amount, and the source of the CO₂ (if known). Class II injection permit holders report under Subpart UU, unless they opt in to Subpart RR, with reporting occurring under both subparts at the facility¹⁶ level.

¹² See the EPA’s Underground Injection Control program web page on “Recently proposed or approved primacy programs or revision.” Available at https://www.epa.gov/uic/primary-enforcement-authority-underground-injection-control-program#KY_primacy.

¹³ See details of the EPA’s process for ensuring GHGRP data is “accurate, complete, and consistent” on the EPA GHGRP website. Available at <https://www.epa.gov/ghgreporting/ghgrp-methodology-and-verification>.

¹⁴ Data reported as part of the GHGRP is made available to the public unless it is qualified as confidential under the Clean Air Act. More information available at <https://www.epa.gov/ghgreporting/confidential-business-information-ghg-reporting>.

¹⁵ As stated on EPA’s website, UU also covers other facility types that inject CO₂ underground such as “acid gas injection/disposal, carbon storage research and development (R&D), or for any other purpose other than geologic sequestration.” Available at <https://www.epa.gov/ghgreporting/capture-supply-and-underground-injection-carbon-dioxide>.

¹⁶ Both Subpart RR and Subpart UU use the definition of “facility” under 40 Code of Federal Regulations (CFR) 98.6, which states that “a facility means any physical property, plant, building, structure, source, or stationary equipment

Specifically:

- UU tracks CO₂ volumes that flow through custody transfer meters to quantify the amount received; it does not cover injection meters.¹⁷ This means that UU tracks CO₂ volumes at the end of a pipeline delivering CO₂ to an oil or gas field.
 - UU does not require reporting the mass of CO₂ injected into the subsurface.
 - UU does not require reporting the mass of CO₂ stored, incidentally or otherwise.
- **Subpart RR—Geologic sequestration CO₂.** RR tracks the amount of CO₂ that is geologically stored by injection projects operating under Class II permits or Class VI permits, the data used to calculate the amount, and other information about the project. IRS guidance states that EPA's rule for reporting the amount of CO₂ that is geologically sequestered is required to be eligible for 45Q, in addition to the appropriate UIC program rules. Thus, Subpart RR is used for accounting purposes under Section 45Q to quantify the amount of CO₂ that is geologically stored.
 - CO₂ injection facilities that report under RR include the following:
 - Class VI permit holders (all are required to report under Subpart RR); and
 - Class II permit holders that have opted-in to report under RR (reporting under RR is optional for facilities operating under a Class II permit).
 - RR provides a framework for monitoring, reporting, and verification of CO₂ storage and a methodology for quantifying the mass balance of CO₂ stored through injection operations during the reporting period.
 - Facilities operating under Class II permits that opt in to Subpart RR may elect to submit a request to discontinue reporting under Subpart RR at any time, including before wells are plugged and closed, if they make a demonstration that the amount of CO₂ claimed as stored during the reporting period is not expected to migrate in a manner likely to result in surface leakage.¹⁸ Facilities that are approved by the EPA to discontinue reporting under RR while still operating, revert back to reporting under UU.

EOR projects operate under Class II UIC permits. Therefore, operators must report under Subpart UU (the amount received) or, at their option, they may choose to report under Subpart RR (the amount that is incidentally stored).

There are other, additional subparts that account for: CO₂ supplied to the economy; and for CO₂ and other GHG emissions from oil and gas production (including EOR) that are reported at a lower level of detail than CO₂ emissions reported under RR, given the difference in facility type that applies.

located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control..."

¹⁷ A custody transfer meter in this context measures the volume and flow rate of CO₂ received; the injection meter quantifies the amount of CO₂ injected into a geologic formation. In the case of small-scale EOR operations when a single injection well is being used for CO₂-EOR, the volume measured as received at the end of a pipeline may also serve as the injection meter (when there is no separate injection meter).

¹⁸ For additional information on how EPA has applied 40 CFR sec 98.441(b) to the defined period of reporting, see page 3-4 of EPA's decision on the MRV Plan for Denver Unit, December 22, 2015. Available at https://www.epa.gov/sites/production/files/2015-12/documents/denver_unit_final_decision.pdf.

These are required for reporting under the GHGRP as described below:

- **Subpart PP—Suppliers of CO₂.** Carbon capture facilities and facilities with CO₂ production wells (e.g., production of CO₂ from natural domes) are required to report the amount of CO₂ supplied to the economy, data used to calculate the amount, and information on the end use of the supplied CO₂. For example, owners of carbon capture equipment at industrial facilities that supply their CO₂ to EOR operations must report the amount of CO₂ captured by the equipment under Subpart PP.
- **Subpart W—Petroleum and natural gas systems.** Operators of petroleum and natural gas systems with GHG emissions of 25,000 metric tons of CO₂ equivalent or higher must report under Subpart W. This subpart details requirements for how to estimate emissions from venting, flaring, fugitive leaks, and other emissions from petroleum and natural gas systems, including EOR operations.
 - To calculate the emissions under Subpart W, data are collected on the basis of a basin-level facility¹⁹ for onshore production.
 - Subpart W requires reporting and accounting of equipment leakage and vented CO₂ emissions leaks from surface equipment. Data for onshore production is reported at a basin level.

As described above, EPA's UIC program and GHGRP address regulatory and reporting requirements for projects that inject and store CO₂. In the context of accounting for geologic storage of CO₂, including for claiming Section 45Q tax credits, these programs build on and complement one another.

REGULATORY PATHWAY FOR CO₂-EOR PROJECTS TO QUANTIFY INCIDENTAL CO₂ STORAGE FOR THE PURPOSE OF CLAIMING THE 45Q TAX CREDIT

This section of the overview provides a more detailed description of how EOR projects using anthropogenic CO₂ demonstrate secure geological storage for the purpose of claiming the Section 45Q tax credit.

Taxpayers must follow the IRS guidance²⁰ for demonstrating secure geological storage. It states that any taxpayer claiming the Section 45Q tax credit must follow the applicable US EPA UIC

¹⁹ For onshore petroleum and natural gas production, a facility under Subpart W is defined at the geologic basin level and all equipment and wells owned by a person or entity within such a basin are considered one facility in terms of how the rule is applied. See 40 CFR 98.6, for the definition of facility under Subparts RR and UU. When the EPA uses the term "basin" it refers to geologic provinces as published by the American Association of Petroleum Geologists (AAPG). See EPA's Frequently Asked Questions description of facilities under the GHGRP. Available at <https://ccdsupport.com/confluence/pages/viewpage.action?pageId=189038689>.

²⁰ IRS Notice 2009-83.

program and the Final Mandatory GHG Reporting Rule²¹ for reporting the amount of CO₂ that is geologically stored.²²

According to the Final Mandatory GHG Reporting Rule, EOR projects that seek to account for the storage of injected CO₂ must operate under the following:

1. A UIC Class II permit for CO₂ injection; and
2. GHGRP Subpart RR (by opting in) to account for and verify the amount of incidental geologic storage.

Class II permitting is a well-established program and currently applies to about 180,000 injection wells in the US, which include gas recovery, hydrocarbon storage, and EOR wells (e.g., using CO₂ injection). The combination of Class II under the UIC program and Subpart RR under the GHGRP provides a pathway for taxpayers to account for, verify, and report the amount of CO₂ incidentally during EOR operations that meets EPA requirements for CO₂ injection and accounting for geologic storage of CO₂.

Background: EPA GHG Reporting Rule—Subpart RR

The EPA has determined that Subpart RR (under EPA's rule on the Mandatory Reporting of GHGs: Injection and Geologic Sequestration of CO₂) and the UIC Program address different aspects of geologic storage and do so in a complementary manner.²³ The preamble section of RR entitled "Relationship to Underground Injection Control Regulations under the Safe Drinking Water Act" states that:

"While requirements under the UIC program are focused on demonstrating that USDWs are not endangered as a result of CO₂ injection into the subsurface, requirements under the GHG Reporting Program through 40 CFR part 98, subpart RR will enable EPA to verify the quantity of CO₂ that is geologically sequestered and to assess the efficacy of GS [geologic sequestration] as a mitigation strategy."²⁴

Key aspects of Subpart RR within the context of EOR:

1. **Subpart RR quantifies the amount of geologically stored CO₂ using a mass balance approach.** This is the only regulatory program that quantifies the amount of CO₂ stored (through a mass balance approach).

²¹ At the time the IRS guidance was published, Subpart RR had not been finalized. As the IRS noted in the guidance, "Subpart PP of the Final Mandatory GHG Reporting Rule announces EPA's plans to propose new rules to require reporting of the amount of CO₂ that is geologically sequestered. EPA will seek comments on monitoring, reporting, and verification methodologies that can be used to determine the amount of CO₂ emitted and geologically sequestered at active EOR facilities and geologic sequestration sites where CO₂ is injected (for long-term storage) into saline aquifers, oil and gas reservoirs, or other geologic formations. When the proposed geologic sequestration rules are finalized, such rules (or any successor rules) will apply in addition to the final UIC program rules (to the extent applicable) ..." EPA's geologic sequestration rules, including MRV methodologies, were established under Subpart RR of the Final Mandatory GHG Reporting Rule.

²² IRS Notice 2009-83.

²³ 40 CFR Parts 72, 78, and 98 Mandatory Reporting of Greenhouse Gases: Injection and Geologic Sequestration of Carbon Dioxide; Final Rule.

²⁴ 75 FR 75063.

- While other subparts of the GHGRP and Class II UIC require reporting of CO₂ supplied, received, the nature of fluids injected, and some level²⁵ of tracking the volume of CO₂ injected²⁶ or leaked through surface equipment (only at a basin level), Subpart RR is the only framework that requires reporting and verification of the quantity of CO₂ stored through a mass-balance calculation.
2. **Subpart RR requires a monitoring, reporting, and verification (MRV) plan.** RR requires an MRV plan based on site- and project-specific considerations over time.²⁷
- **Site-specific flexibility of MRV requirements.** RR requires an EPA-approved, site-specific MRV plan, as well as reporting of the amount of CO₂ stored using a mass balance approach in accordance with the MRV plan. As stated in the rule, EPA's approach allows for "site-specific flexibility for MRV plans" and acknowledges the variation in geology and other conditions across sites.
 - **Content of the MRV plan.** There are no operational requirements in the MRV plan; the MRV plan must include how a facility operates, what the permit requirements are, and how operators will detect and quantify CO₂ storage and emissions. If operators do not comply with their UIC permit requirements, they face enforcement through the UIC permit program (or other if applicable). If they fail to operate as described (i.e., make a material change) in the MRV plan, then operators need to indicate this in the annual monitoring report, which may trigger a requirement to resubmit the MRV plan to EPA.²⁸
 - **Approach to any CO₂ losses.** While operators must report accurately (including any CO₂ leakage or venting) to the EPA, there are no corrective action or enforcement requirements for mitigating CO₂ losses reported under RR. Such measures are under the UIC program.
 - **CO₂ storage accounting reported via mass balance approach.** Under RR, the amount of CO₂ stored is reported to the EPA. As noted in the RR rule, the amount received is measured at the receiving meter and the amount stored is derived from a mass balance equation based on the variables of "injected CO₂; equipment leaks and vented CO₂ emissions from surface equipment between the flow meters and the wellhead; CO₂ produced and/or remaining with produced oil, gas or other fluids; and CO₂ leakage to the surface." The MRV plan must summarize the considerations the project will use "to calculate the site-specific variables for the mass balance equation."²⁹

²⁵ State programs that administer these programs meet or exceed the federal requirements and vary across states, including what data is reported.

²⁶ For EPA administered Class II programs, this requires that "the owner or operator shall monitor the nature of the injected fluids with sufficient frequency to yield data representative of their characteristics. For EPA administered programs, this frequency shall be at least once within the first year of the authorization and thereafter when changes are made to the fluid." In addition, "the owner or operator shall observe the injection pressure, flow rate, and cumulative volume at least monthly." See EPA UIC Program Rule, 40 CFR 144.28, available at <https://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol23/xml/CFR-2014-title40-vol23-part144.xml>.

²⁷ See 40 CFR 98.448 for Subpart RR requirements for MRV plans, reporting, and recordkeeping.

²⁸ See 40 CFR 98.448(d)(1) for a description of what changes would require a facility to re-submit an MRV plan.

²⁹ 75 FR 75065.

- **MRV plan development and anticipation of future changes.** In developing the MRV plan, the operator describes the existing and planned project, assesses the risk of leakage from the site, and uses risk assessment to determine the active and maximum monitoring areas.³⁰ This provides the operator with the opportunity to describe what and how future modifications to the project will be made, which may allow them to avoid submitting a revised monitoring plan for each anticipated change. For example, an EOR operator could include in the MRV plan that changing production wells to injection wells is anticipated, which is a common practice for EOR projects.³¹
 - **Reapproval triggers.** If the operator makes material changes to monitoring and/or operational parameters that were not anticipated in the initial MRV plan, that would trigger a requirement to obtain reapproval.³²
 - **MRV plan appeals.** The original MRV plan, any modified MRV plans, and a decision to allow an injector to discontinue monitoring are all subject to appeal by intervenors to EPA's Environmental Appeals Board. There are no substantive or procedural requirements for intervenor standing to launch such an appeal.
3. **Performance-based approach to discontinue reporting for Class II projects that opt in to RR.** Oilfields are typically developed in stages that may include development across a field over time and changes in operations within an area of a field as production matures.³³ As a result, Class II oil wells are likely to cycle through stages of being operational or temporarily closed during these stages. The provisions for discontinuing reporting accommodate the operational profile through the timing and content provisions in Section 98.441 of the Subpart RR rules.

The provision on timing indicates that facilities “may” submit a request after wells have been closed but does not require this timing. Further, the provision on the content of the request clarifies that for all other wells besides Class VI wells, the content must contain a “demonstration that current monitoring and model(s) show that the injected CO₂ stream is not expected to migrate in the future in a manner likely to result in surface leakage.”³⁴

In its decisions on the MRV plan for the Denver Unit and Hobbs Field, EPA elaborated on this approach. EPA decided that the term “may” allowed the facility to define the reporting period. Further, EPA acknowledged that operations would likely continue after the reporting period ended and that the demonstration that injected CO₂ would not migrate to the surface related to the amount that was claimed as stored during the period.³⁵ Once the reporting

³⁰ 40 CFR 98.448(a).

³¹ See 40 CFR 98.448(d)(1) for examples of material changes listed by EPA that would require a re-submittal of the MRV plan, if such changes were not anticipated in the original plan.

³² 40 CFR 98.448(d).

³³ See National Energy Technology Laboratory, “Carbon Dioxide Enhanced Oil Recovery Untapped Domestic Energy Supply and Long Term Carbon Storage Solution,” March 2010, for a discussion of how CO₂-EOR works.

³⁴ 40 CFR 98.441(b)(2)(ii).

³⁵ 40 CFR 98.441(b)(2)(ii).

period ends, any new injected CO₂ is not claimed as stored, rather it is treated in the same manner as under UU reporting.³⁶

4. **Timing for discontinuation of reporting.** EOR operators may request to discontinue RR at a time of their choosing; EOR operations may continue after reporting ceases.³⁷ Such a request may be made to the EPA and approved during EOR operations.³⁸
 - At any time, the operator can request approval from the EPA to discontinue reporting under RR. If the EPA administrator denies the request, the operator can appeal.³⁹
 - An EOR operator reverts back to reporting under Subpart UU upon receiving approval from EPA to discontinue reporting under RR.
 - RR has no required time period for reporting; for non-Class VI wells, it is solely based on meeting RR's requirements, as described in #3 above, to demonstrate that the monitoring and modeling show that the CO₂ reported as stored is not expected to migrate in a manner likely to result in surface leakage.⁴⁰
5. **Post-approval to discontinue reporting for all project types.** Once approved by the EPA, an operator can discontinue reporting under RR and will no longer be required to meet associated RR obligations (including monitoring) before closing the site (i.e., operations may continue without reporting under RR, if the operator so desires).⁴¹
 - An operator may choose to indicate an intent to discontinue reporting prior to site closure when submitting the original MRV plan to EPA (the regulation is silent on this; it is at the operator's discretion).⁴²
 - Subpart RR does not use the Class VI term post-injection monitoring; it does not require monitoring post-approval to discontinue reporting.
 - An operator reverts back to UU (as applicable) post-approval to discontinue RR reporting.
 - After EPA approves the discontinuance of reporting, there are no additional obligations that would require continued access to a site.

³⁶ See pages 3-4 of EPA's decision on the MRV Plan for Denver Unit, December 22, 2015. Also see EPA's decision on the MRV Plan for Hobbs Field, January 12, 2017. Available at https://www.epa.gov/sites/production/files/2017-01/documents/hobbs_field_final_decision.pdf.

³⁷ See EPA-approved MRV plans for projects that indicate they will continue operations after the Specified Period for reporting under RR, for example, the Denver Unit and the Core Energy Northern Niagaran Pinnacle Reef Trend. Available at <https://www.epa.gov/ghgreporting/subpart-rr-geologic-sequestration-carbon-dioxide>.

³⁸ See EPA's final decision on the Denver Unit MRV plan for EPA's description of the time frame when a facility may cease reporting. The MRV Plan Approval Number is 1011767-1.

³⁹ A party has a right to appeal any "permit decision" issued under the UIC program to EPA's Environmental Appeals Board (EAB) under 40 CFR 124. The EPA regulations in 40 CFR 124 do not define what is a permit decision and what is not. Typically, permit decisions relate to EPA actions regarding the issuance of a new permit or revision of an existing permit. A "permit decision" could be interpreted to include a denial (or even an approval) of a request to discontinue reporting under Subpart RR. If the denial of a request is not appealable to the EAB under 40 CFR. 124, then an operator would file an appeal to a federal or state court.

⁴⁰ 40 CFR 98.441(b)(2)(ii).

⁴¹ See EPA-approved MRV plans.

⁴² See EPA-approved MRV plans.

ADDITIONAL RESOURCES

EPA GHGRP Subpart RR Final Rule. <https://www.gpo.gov/fdsys/pkg/FR-2010-12-01/pdf/2010-29934.pdf>

EPA GHGRP Subpart RR Rule Information and MRV Plan Decisions.
<https://www.epa.gov/ghgreporting/subpart-rr-geologic-sequestration-carbon-dioxide>

EPA Memo: Key Principles in EPA's Underground Injection Control Program Class VI Rule Related to Transition of Class II Enhanced Oil or Gas Recovery Wells to Class VI
https://www.epa.gov/sites/production/files/2015-07/documents/class2eorclass6memo_1.pdf

IRS Notice 2009-83, 2009-44 I.R.B. 588: Credit for Carbon Dioxide Sequestration under Section 45Q. https://www.irs.gov/irb/2009-44_IRB#NOT-2009-83