State Primacy Crosswalk: Texas

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
GENERAL REQUIREMENTS						
PART 124--PROCEDURES FOR DECISION MAKING						
SUBPART A--GENERAL PROGRAM REQUIREMENTS						
40 CFR 124.3 Application for a permit						
1.	Applicable to State programs, see §145.11 (UIC). (1) Any person who requires a permit under the RCRA, UIC, NPDES, or PSD programs shall complete, sign, and submit to the Director an application for each permit required under §144.1 (UIC). Applications are not required for underground injections authorized by rules (§§ 144.21 through 144.26).	40 CFR 124.3(a)(1) (See also 145.11(a)(24)) **§145.11 Requirements for permitting.** (a) All State programs under this part must have legal authority to implement each of the following provisions and must be administered in conformance with each; except that States are not precluded from omitting or modifying any provisions to impose more stringent requirements. (24) Section 124.3(a)—(Application for a permit);	**§5.202(a) Permit required**. A person may not begin drilling or operating an anthropogenic CO_2 injection well for geologic storage or constructing or operating a geologic storage facility regulated under this subchapter without first obtaining the necessary permit(s) from the Commission.			
2.	The Director shall not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit. See §144.31 (UIC).	40 CFR 124.3(a)(2) (See also 145.11(a)(24))	**§5.203(a)**(3) **Application completeness**. The commission may not issue a permit before receiving a complete application. A permit application is complete when the director determines that the application contains information addressing each application requirement of the regulatory program and all information necessary to initiate the final review by the director.			

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3.	Permit applications must comply with the signature and certification requirements of § 144.32 (UIC). **§144.32 - Signatories to permit applications and reports.** **(a) Applications**. All permit applications shall be signed as follows: (1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means; (i) A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (**b) Reports**. All reports required by permits, other information requested by the Director, shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if: (1) The authorization is made in writing by a person described in paragraph (a) of this section; (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and (3) The written authorization is submitted to the Director. **(c) Changes to authorization**. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has	40 CFR 124.3(a)(3) (See also 145.11(a)(24))	***§5.203. Application Requirements.*** **(a) General.** (1) Form and filing; signatories; certification. (A) Form and filing. Each applicant for a permit to construct and operate a geologic storage facility must file an application with the division in Austin on a form prescribed by the Commission. The applicant must file the application and all attachments with the division and with EPA Region 6 in an electronic format approved by EPA. On the same date, the applicant must file one copy with the appropriate district office(s) and one copy with the Executive Director of the Texas Commission on Environmental Quality. (B) Signatories to permit applications. An applicant must ensure that the application is executed by a party having knowledge of the facts entered on the form and included in the required attachments. All permit applications shall be signed as follows: (i) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means; (I) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decisionmaking functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (II) for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or (III) for a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. (C) Certification. Any person signing a permit application or permit amendment application shall make the following certification: *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of*			

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	responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative. **(d) Certification**. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification: *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations*.		*my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations*. (2) General information. (A) On the application, the applicant must include the name, mailing address, and location of the facility for which the application is being submitted and the operator's name, address, telephone number, Commission Organization Report number, and ownership of the facility. (B) When a geologic storage facility is owned by one person but is operated by another person, it is the operator's duty to file an application for a permit. (C) The application must include a listing of all relevant permits or construction approvals for the facility received or applied for under federal or state environmental programs; (D) A person making an application to the director for a permit under this subchapter must submit with the application a letter of determination from the Texas Commission on Environmental Quality (TCEQ) concluding that drilling and operating an anthropogenic carbon dioxide injection well for geologic storage or constructing or operating a geologic storage facility will not impact or interfere with any previous or existing Class I injection well, including any associated waste plume, or any other injection well authorized or permitted by the TCEQ. (3) Application completeness. The Commission may not issue a permit before receiving a complete application. A permit application is complete when the director determines that the application contains information addressing each application requirement of this subchapter and all information necessary to initiate the final review by the director. (4) Reports. An applicant must ensure that all descriptive reports are prepared by a qualified and knowledgeable person and include an interpretation of the results of all logs, surveys, sampling, and tests required in this subchapter. The applicant must include in the application a quality assurance and surveillance plan for all testing and monitoring, which includes, at a minimum, validation of the analytical laboratory data,			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			calibration of field instruments, and an explanation of the sampling and data acquisition techniques. (5) If otherwise required under Occupations Code, Chapter 1001, relating to Texas Engineering Practices Act, or Chapter 1002, relating to Texas Geoscientists Practices Act, respectively, a licensed professional engineer or geoscientist must conduct the geologic and hydrologic evaluations required under this subchapter and must affix the appropriate seal on the resulting reports of such evaluations. ***§5.207. Reporting and Record-Keeping*** **(c) Signatories to reports.** (1) Reports. All reports required by permits and other information requested by the director, shall be signed by a person described in §5.203(a)(1)(B) of this subchapter, or by a duly authorized representative of that person. A person is a duly authorized representative only if: (A) The authorization is made in writing by a person described in §5.203(a)(1)(B) of this subchapter; (B) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility; and (C) The written authorization is submitted to the director. (2) Changes to authorization. If an authorization under paragraph (1) of this subsection is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (1) of this subsection must be submitted to the director prior to or together with any reports, information, or applications to be signed by an authorized representative.			
	§ 124.5 Modification, revocation and reissuance, or termination of permits.					

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4.	(Applicable to State programs, see §145.11 (UIC).) Permits may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in §144.39 or 144.40 (UIC). All requests shall be in writing and shall contain facts or reasons supporting the request. (a) *Causes for modification.* The following are causes for modification. For Class I hazardous waste injection wells, Class II, Class III or Class VI wells the following may be causes for revocation and reissuance as well as modification; and for all other wells the following may be cause for revocation or reissuance as well as modification when the permittee requests or agrees. (1) *Alterations.* There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit. (2) *Information.* The Director has received information. Permits other than for Class II and III wells may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. For UIC area permits (§ 144.33), this cause shall include any information indicating that cumulative effects on the environment are unacceptable. (3) *New regulations.* The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued. Permits other than for Class I hazardous waste injection wells, Class II, Class III or Class VI wells may be modified during their permit terms for this cause only as follows: (i) For promulgation of amended standards or regulations, when: (A) The permit condition requested to be modified was based on a promulgated part 146 regulation; and (B) EPA has revised, withdrawn, or modified that portion of the regulation on which the permit condition was based, and (C) A permittee requests modification in accordance with § 124.5 within ninety (90) days after FEDERAL REGISTER notice of the action on which the request is based. (ii) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations if the remand and stay concern that portion of the regulations on which the permit condition was based and	40 CFR 124.5(a) (See also 145.11(a)(25)) §145.11 Requirements for permitting. (a) All State programs under this part must have legal authority to implement each of the following provisions and must be administered in conformance with each; except that States are not precluded from omitting or modifying any provisions to impose more stringent requirements. (25) [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/124.5"] [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fa2675f754f2da7a19c987f51d2ccfaa&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:145:Subpart:B:145.11"], [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=35bafaf9b8e212d4cdafd0ff3635927a&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:145:Subpart:B:145.11"], [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=790c31e8e3d4cc14adfec5b9ecd23158&	**§5.202 Permit Required.** **(d) Modification, revocation and reissuance, or cancellation, of a geologic storage facility permit.** (1) Permit review. Permits are subject to review by the Commission. Any interested person (i.e., the storage operator, local governments having jurisdiction over land within the area of review, and any person who has suffered or will suffer actual injury or economic damage) may request that the Commission review permits issued under this subchapter for one of the reasons set forth below. All requests must be in writing and must contain facts or reasons supporting the request. If the Commission determines that the request may have merit or at the Commission's initiative for one or more of the reasons set forth below, the Commission may review the permit. (2) Action by the Commission. The director may modify, revoke and reissue, or cancel a geologic storage facility permit after notice and opportunity for hearing under any of the following circumstances. (A) Causes for modification or for revocation and reissuance. The following may be causes for revocation and reissuance as well as modification: (i) Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance that justify the inclusion of permit conditions that are different or absent in the existing permit. (ii) New information. The director has received information that was not available at the time of permit issuance and would have justified the inclusion of different permit conditions at the time of issuance. These may include any increase greater than the permitted carbon dioxide storage volume, and/or changes in the chemical composition of the carbon dioxide stream, (iii) New regulations. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued. (iv) Compliance schedules. The director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.			

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	a request is filed by the permittee in accordance with § 124.5 within ninety (90) days of judicial remand. (4) *Compliance schedules.* The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy. See also § 144.41(c) (minor modifications). (5) *Basis for modification of Class VI permits.* Additionally, for Class VI wells, whenever the Director determines that permit changes are necessary based on: (i) Area of review reevaluations under §146.84(e)(1) of this chapter; (ii) Any amendments to the testing and monitoring plan under § 146.90(j) of this chapter; (iii) Any amendments to the injection well plugging plan under § 146.92(c) of this chapter; (iv) Any amendments to the post-injection site care and site closure plan under §146.93(a)(3) of this chapter; (v) Any amendments to the emergency and remedial response plan under § 146.94(d) of this chapter; or (vi) A review of monitoring and/or testing results conducted in accordance with permit requirements. (b) *Causes for modification or revocation and reissuance.* The following are causes to modify or, alternatively, revoke and reissue a permit: (1) Cause exists for termination under § 144.40, and the Director determines that modification or revocation and reissuance is appropriate. (2) The Director has received notification (as required in the permit, see § 144.41(d)) of a proposed transfer of the permit. A permit also may be modified to reflect a transfer after the effective date of an automatic transfer (§ 144.38(b)) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee. (3) A determination that the waste being injected is a hazardous waste as defined in § 261.3 either because the definition has been revised, or because a previous determination has been changed. (c) *Facility siting.* Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance. **§ 144.40 Termination of permits.** (a) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes: (1) Noncompliance by the permittee with any condition of the permit; (2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts,	term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:145:Subpart:B:145.11"], and (f) - (Modification of permits); §124.5 Modification, revocation and reissuance, or termination of permits. (a) (Applicable to State programs, see 145.11 (UIC). [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] may be modified, revoked and reissued, or terminated either at the request of any interested [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8df28b03f6d1b553b6e32826a1f8f195&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] (including the permittee) or upon the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=42e0c29cbbfc72e786a6af2f8b720ef6&term_occur=999&term_src=	(v) Basis for permit modification. Whenever the director determines that permit changes are necessary based on: (I) Area of review reevaluations under §5.203(d) of this subchapter; (II) Any amendments to the testing and monitoring plan under §5.203(f) of this subchapter; (III) Any amendments to the injection well plugging plan under §5.203(k) of this subchapter; (IV) Any amendments to the post-injection site care and site closure plan under §5.203(m) of this subchapter; (V) Any amendments to the emergency and remedial response plan under §5.203(l) of this subchapter; or (VI) A review of monitoring and/or testing results conducted in accordance with permit requirements. (VII) Cause exists for termination under §5.202(d)(2)(B) of this subchapter, and the director determines that modification or revocation and reissuance is appropriate. (VIII) The director has received notification of a proposed transfer of the permit. (IX) A determination that the fluid being injected is a hazardous waste as defined in 40 CFR §261.3 either because the definition has been revised, or because a previous determination has been changed. (vi) If the director tentatively decides to modify or revoke and reissue a permit, the director shall prepare a draft permit incorporating the proposed changes. The director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of revoked and reissued permits, the director shall require the submission of a new application. (vii) In a permit modification, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding, the permittee shall comply			

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	or the permittee's misrepresentation of any relevant facts at any time; or (3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;	Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"]'s initiative. However, [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] may only be modified, revoked and reissued, or terminated for the reasons specified in 144.39 or 144.40 (UIC). All requests shall be in writing and shall contain facts or reasons supporting the request. (b) If the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=42e0c29cbbfc72e786a6af2f8b720ef6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] decides the request is not justified, he or she shall send the requester a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings. (c) (Applicable to State programs, see 14 §5.11 (UIC)). (1) If the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&ifram	with all conditions of the existing permit until a new final permit is reissued. (viii) Upon the consent of the permittee, the director may modify a permit to make the corrections or allowances for changes in the permit, without following the procedures of §5.2031, relating to draft permit and fact sheet, and §5.204, relating to notice of permit actions and public comment period, to: (I) correct typographical errors; (II) require more frequent monitoring or reporting by the permittee; (III) change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; (IV) allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the director; (V) change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the director, would not interfere with the operation of the facility or its ability to meet the permit conditions; (VI) change construction requirements approved by the director pursuant to §5.206, provided that any such alteration shall comply with the requirements of this subchapter; (VII) amend a plugging and abandonment plan which has been updated under §5.203(k); or (VIII) amend an injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the director.			

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		e=true&def_id=42e0c29cbbfc72e786a6af2f8b720ef6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] tentatively decides to modify or revoke and reissue a [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] under 40 CFR 144.39 (UIC), he or she shall prepare a [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=6ca1e02f68d20132a2d9c5ba8a45339e&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] under §124.6 incorporating the proposed changes. The [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=42e0c29cbbfc72e786a6af2f8b720ef6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:12				

		4.5"] may request additional information and, in the case of a modified [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"], may require the submission of an updated [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e513d63942a48e92e6fad590cc640cd7&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"]. In the case of revoked and reissued permits, other than under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/270.41"](b)(3), the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=42e0c29cbbfc72e786a6af2f8b720ef6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] shall require the submission of a new [HYPERLINK				

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		u/definitions/index.php?width=840&height=800&iframe=true&def_id=6eba71cbb9f29a33cc630991742863a4&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] standardized permits. (2) In a [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] modification under this section, only those conditions to be modified shall be reopened when a new [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=6ca1e02f68d20132a2d9c5ba8a45339e&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] is prepared. All other aspects of the existing [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_sr				

		c=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] shall remain in effect for the duration of the unmodified [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"]. When a [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] is revoked and reissued under this section, the entire [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] is reopened just as if the [HYPERLINK "https://www.law.cornell.ed				

		u/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] had expired and was being reissued. During any revocation and reissuance proceeding the permittee shall comply with all conditions of the existing [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] until a new final [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] is reissued. (3) "Minor modifications" as defined in 144.41 (UIC) are not subject to the requirements of this section. (d) (1) If the Director tentatively decides to terminate: A [HYPERLINK "https://www.law.cornell.ed				

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		u/definitions/index.php?width=840&height=800&iframe=true&def_id=a944457a4a2b323995eac281e30c3e79&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.40"] (UIC) of this chapter, where the permittee objects, he or she shall issue a notice of intent to terminate. A notice of intent to terminate is a type of [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=6ca1e02f68d20132a2d9c5ba8a45339e&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] which follows the same procedures as any [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=6ca1e02f68d20132a2d9c5ba8a45339e&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:124:Subpart:A:124.5"] prepared under [HYPERLINK "https://www.law.cornell.ed				

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
		u/cfr/text/40/124.6"] of this chapter.				
5.	If the Director decides the request is not justified, he or she shall send the requester a brief written response giving a reason for the decision. Denials of requests for modification, revocation and reissuance, or termination are not subject to public notice, comment, or hearings.	40 CFR 124.5(b)				
6.	(Applicable to State programs, see 40 CFR 145.11 (UIC)). (1) If the Director tentatively decides to modify or revoke and reissue a permit under 40 CFR 144.39 (UIC), he or she shall prepare a draft permit under §124.6 incorporating the proposed changes. The Director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of revoked and reissued permits, the Director shall require the submission of a new application.	40 CFR 124.5(c)(1)	**§5.202 (d)(2)(A)(vi)**_If the director tentatively decides to modify or revoke and reissue a permit, the director shall prepare a draft permit incorporating the proposed changes. The director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of revoked and reissued permits, the director shall require the submission of a new application.			
7.	In a permit modification under this section, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding the permittee shall comply with all conditions of the existing permit until a new final permit is reissued.	40 CFR 124.5(c)	**§5.202(d)(2)(A)(vii)** In a permit modification, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding, the permittee shall comply with all conditions of the existing permit until a new final permit is reissued.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
8.	''Minor modifications'' as defined in §144.41 (UIC) are not subject to the requirements of this section. **§ 144.41 Minor modifications of permits.** Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in § 144.39. Minor modifications may only: (a) Correct typographical errors; (b) Require more frequent monitoring or reporting by the permittee; (c) Change in interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; or (d) Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director. (e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification. (f) Change construction requirements approved by the Director pursuant to § 144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of this part and part 146. (g) Amend a plugging and abandonment plan which has been updated under § 144.52(a)(6).	40 CFR 124.5(c)(3) (See also 145.11(a)(25))	**§5.202(d)(2)(A)(viii)** Upon the consent of the permittee, the director may modify a permit to make the corrections or allowances for changes in the permit, without following the procedures of §5.2031, relating to draft permit and fact sheet, and §5.204, relating to notice of permit actions and public comment period, to: (I) correct typographical errors; (II) require more frequent monitoring or reporting by the permittee; (III) change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; (IV) allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the director; (V) change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the director, would not interfere with the operation of the facility or its ability to meet the permit conditions; (VI) change construction requirements approved by the director pursuant to §5.206, provided that any such alteration shall comply with the requirements of this subchapter; (VII) amend a plugging and abandonment plan which has been updated under §5.203(k); or (VIII) amend an injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the director.		AMENDMENT	

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
9.	(Applicable to State programs, see §145.11 (UIC) of this chapter.) (1) If the Director tentatively decides to terminate: A permit under § 144.40 (UIC) of this chapter, he or she shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit which follows the same procedures as any draft permit prepared under §124.6 of this chapter **§ 144.40 Termination of permits.** (a) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes: (1) Noncompliance by the permittee with any condition of the permit; (2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or (3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; (b) The Director shall follow the applicable procedures in part 124 in terminating any permit under this section..	40 CFR 124.5(d)(1) (See also 145.11(a)(25))	**§5.202(d)(2)(B) Cancellation of permits.** **(i)** The following may be causes to cancel a permit during its term, or deny a permit renewal application: (I) the permittee's failure to comply with any condition of the permit or applicable Commission orders or regulations; (II) the permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; (III) fluids are escaping or are likely to escape from the injection zone; (IV) USDWs are likely to be endangered as a result of the continued operation of the geologic storage facility; or (V) a determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination. (ii) The director shall follow the applicable procedures in §5.2031, relating to draft permit and fact sheet, and §5.204, relating to notice of permit actions and public comment period, in terminating any permit under this section. (iii) If the director tentatively decides to cancel a permit under this subchapter, where the permittee objects, the director shall issue a notice of intent to cancel. A notice of intent to cancel is a type of draft permit.		AMEND	
§ 124.6 Draft permits.						
10.	(Applicable to State programs, see §145.11 (UIC).) Once an application is complete, the Director shall tentatively decide whether to prepare a draft permit or to deny the application.	40 CFR 124.6(a) (See also 145.11(a)(26))	**§5.2031. Draft permit and fact sheet** **(a)** Draft permit; notice of intent to deny. (1) Once a storage facility permit application is complete, the director shall decide whether to prepare a draft permit or to deny the application.			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
11.	If the Director tentatively decides to deny the permit application, he or she shall issue a notice of intent to deny. A notice of intent to deny the permit application is a type of draft permit which follows the same procedures as any draft permit prepared under this section. See §124.6(e). If the Director's final decision (§124.15) is that the tentative decision to deny the permit application was incorrect, he or she shall withdraw the notice of intent to deny and proceed to prepare a draft permit under paragraph (d) of this section.	40 CFR 124.6(b)	**§5.2031(a)**(2) If the director tentatively decides to deny the permit application, the director shall issue a notice of intent to deny. A notice of intent to deny the permit application is a type of draft permit which follows the same procedures as any draft permit prepared under this section. If the director's final decision is that the tentative decision to deny the permit application was incorrect, the director shall withdraw the notice of intent to deny and proceed to prepare a draft permit.			
12.	(Applicable to State programs, see §145.11 (UIC).) If the Director decides to prepare a draft permit, he or she shall prepare a draft permit that contains the following information:	40 CFR 124.6(d) (See also 145.11(a)(26))	The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.			
13.	All conditions under §144.51 and 144.42 (UIC);	40 CFR 124.6(d)(1) (See also 145.11(a)(26))	**§5.203. Application Requirements & §5.206. Permit Standards**			
14.	All compliance schedules under §144.53 (UIC);	40 CFR 124.6(d)(2) (See also 145.11(a)(26))	**§5.206 (n)(2)(I):** Schedule of compliance			
15.	All monitoring requirements under §144.54 (UIC); and	40 CFR 124.6(d)(3) (See also 145.11(a)(26))	**§5.206(d) & §5.207(a)(2)(C)(vii):**			
16.	For: *** UIC permits, permit conditions under § 144.52;	40 CFR 124.6(d)(4)(ii) (See also 145.11(a)(26))	**§5.206.** Permit standards (includes permit conditions)			
17.	(Applicable to State programs, see §145.11 (UIC).) Draft permits prepared by a State shall be accompanied by a fact sheet if required under §124.8.	40 CFR 124.6(e) (See also 145.11(a)(26))	**§5.202(e)(2)(A)** Fact sheet			
§ 124.8 Fact sheet.						
18.	A fact sheet shall be prepared for every draft permit for a major, UIC facility or activity, and for every draft permit which the Director finds is the subject of wide-spread public interest or raises major issues. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. The Director shall send this fact sheet to the applicant and, on request, to any other person.	40 CFR 124.8(a) (See also 145.11(a)(27))	**§5.202(e)(2)(B) Fact sheet** (1) A fact sheet shall be prepared for every draft permit. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. (2) The director shall send this fact sheet to the applicant and, on request, to any other person.			
19.	The fact sheet shall include, when applicable:	40 CFR 124.8(b) (See also 145.11(a)(27))	§5.202(e)(2) The fact sheet shall include, when applicable:			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
20.	A brief description of the type of facility or activity which is the subject of the draft permit;	40 CFR 124.8(b)(1) (See also 145.11(a)(27))	§5.202(e)(2) The fact sheet shall include, when applicable: (i) a brief description of the type of facility or activity which is the subject of the draft permit;			
21.	The type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged.	40 CFR 124.8(b)(2) (See also 145.11(a)(27))	**§5.2031)(b)(3)(B)** the quantity of carbon dioxide proposed to be injected and stored;			
22.	A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions;	40 CFR 124.8(b)(4) (See also 145.11(a)(27))	No reference found			
23.	Reasons why any requested variances or alternatives to required standards do or do not appear justified;	40 CFR 124.8(b)(5) (See also 145.11(a)(27))	§5.202(e)(2) The fact sheet shall include, when applicable: (iii) the reasons why any requested variances or alternatives to required standards do or do not appear justified;			
24.	A description of the procedures for reaching a final decision on the draft permit including: (i) The beginning and ending dates of the comment period under § 124.10 and the address where comments will be received; (ii) Procedures for requesting a hearing and the nature of that hearing; and (iii) Any other procedures by which the public may participate in the final decision.	40 CFR 124.8(b)(6) (See also 145.11(a)(27))	§5.202(e)(2) The fact sheet shall include, when applicable: (iv) a description of the procedures for reaching a final decision on the draft permit including: (I) the beginning and ending dates of the comment period; (II) the address where comments will be received; (III) The date, time, and location of the storage facility permit hearing, if a hearing has been scheduled; and (IV) any other procedures by which the public may participate in the final decision;			
25.	Name and telephone number of a person to contact for additional information.	40 CFR 124.8(b)(7) (See also 145.11(a)(27))	§5.202(e)(2) The fact sheet shall include, when applicable: (v) the name and telephone number of a person to contact for additional information.			
40 CFR §124.10 Public notice of permit actions and public comment period.						
26.	Scope. (a)(1) The Director shall give public notice that the following actions have occurred:	40 CFR 124.10(a)(1) (See also 145.11(a)(28))	**§5.204. Notice of permit actions and public comment period.** (a) Notice requirements. (1) The Commission shall give notice of the following actions: (A) a draft permit has been prepared under §5.202(e) of this title (relating to Permit Required, and Draft Permit and Fact Sheet); and (B) a hearing that has been scheduled under subsection (b)(2) of this section.			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
27.	A permit application has been tentatively denied under § 124.6(b);	40 CFR 124.10(a)(1)(i)	**§5.202**(e)(1) (A) Once a geologic storage facility permit application is complete, the director 31 shall decide whether to prepare a draft permit or to deny the application. (B) If the director tentatively decides to deny the permit application, the director shall issue a notice of intent to deny. A notice of intent to deny the permit application is a type of draft permit which follows the same procedures as any draft permit prepared under this section. If the director's final decision is that the tentative decision to deny the permit application was incorrect, the director shall withdraw the notice of intent to deny and proceed to prepare a draft permit.	Not required of state programs.		
28.	(Applicable to State programs, see §145.11 (UIC).) A draft permit has been prepared under §124.6(d);	40 CFR 124.10(a)(1)(ii) (See also 145.11(a)(28))	**§5.202(e)(1)(C)** If the director decides to prepare a draft permit, the draft permit shall contain the permit conditions required under §5.206 (relating to Permit standards).			
29.	(Applicable to State programs, see §145.11 (UIC).) A hearing has been scheduled under § 124.12; **§ 124.12 Public hearings.** (a) (*Applicable to State programs, see, 145.11 (UIC).*) (1) The Director shall hold a public hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit(s); (2) The Director may also hold a public hearing at his or her discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision; (4) Public notice of the hearing shall be given as specified in § 124.10. (c) Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under §124.10 shall automatically be extended to the close of any public hearing under this section. The hearing officer may also extend the comment period by so stating at the hearing.	40 CFR 124.10(a)(1)(iii) (See also 145.11(a)(28))	§5.202(a)(7) Comment period for a draft permit. Public notice of a draft permit, including a notice of intent to deny a permit application, shall allow at least 30 days for public comment. §5.202(b)Public comment and hearing requirements. (1) Public comment. (A) During the public comment period, any interested person may submit written comments on the draft permit and may request a hearing if one has not already been scheduled. (B) Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. (C) The public comment period shall automatically be extended to the close of any public hearing under this section. The hearing examiner may also extend the comment period by so stating at the hearing.			
30.	An appeal has been granted under § 124.19(c);	40 CFR 124.10(a)(1)(iv)		Not required of state programs.		

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
31.	No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under § 124.5(b). Written notice of that denial shall be given to the requester and to the permittee.	40 CFR 124.10(a)(2)		Not required of state programs.		
32.	Timing (applicable to State programs, see §145.11 (UIC)). (1) Public notice of the preparation of a draft permit (including a notice of intent to deny a permit application) required under paragraph (a) of this section shall allow at least 30 days for public comment. (2) Public notice of a public hearing shall be given at least 30 days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)	40 CFR 124.10(b) (See also 145.11(a)(28))	**§5.204(a)(1) & (a)(2)**			
33.	Methods (applicable to State programs, see 40 CFR 145.11 (UIC)). Public notice of activities described in paragraph (a)(1) of this section shall be given by the following methods: (1) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits);	40 CFR 124.10(c)(1) (See also 145.11(a)(28))	**§5.204(a)(3)(A) Methods**			
34.	The applicant;	40 CFR 124.10(c)(1)(i) (See also 145.11(a)(28))	**§5.204(a)(3)(A)(i)(I)**			
35.	Any other agency which the Director knows has issued or is required to issue a RCRA, UIC, PSD (or other permit under the Clean Air Act), NPDES, 404, sludge management permit, or ocean dumping permit under the Marine Research Protection and Sanctuaries Act for the same facility or activity (including EPA when the draft permit is prepared by the State);	40 CFR 124.10(c)(1)(ii) (See also 145.11(a)(28))	**§5.204(a)(3)(A)(i)(II-III)**			
36.	Federal and State agencies with jurisdiction over fish, shellfish, and wildlife resources and over coastal zone management plans, the Advisory Council on Historic Preservation, State Historic Preservation Officers, including any affected States (Indian Tribes).	40 CFR 124.10(c)(1)(iii) (See also 145.11(a)(28))	**§5.204(a)(3)(A)(i)(III)**			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
37.	Persons on a mailing list developed by: (A) Including those who request in writing to be on the list; (B) Soliciting persons for ''area lists'' from participants in past permit proceedings in that area; and (C) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as Regional and State funded newsletters, environmental bulletins, or State law journals.	40 CFR 124.10(c)(1)(ix) (See also 145.11(a)(28))	**§5.204(a)(3)(A)(i)(XII)** Persons on the mailing list developed by the Commission, including those who request in writing to be on the list and by soliciting participants in public hearings in that area for their interest in being included on area mailing lists;			
38.	(A) To any unit of local government having jurisdiction over the area where the facility is proposed to be located; and (B) to each State agency having any authority under State law with respect to the construction or operation of such facility.	40 CFR 124.10(c)(1)(x) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(i)(**X) any other unit of local government having jurisdiction over the area where the facility is or is proposed to be located, and each state agency having any authority under state law with respect to the construction or operation of the facility; and			
39.	For Class VI injection well UIC permits, mailing or emailing a notice to State and local oil and gas regulatory agencies and State agencies regulating mineral exploration and recovery, the Director of the Public Water Supply Supervision program in the State, and all agencies that oversee injection wells in the State.	40 CFR §124.10(c)(1)(xi)	**§5.204.(a)(3)(A)(i)(** III)		RRC is the state oil and gas regulatory agency and regulates mineral exploration and recovery. TCEQ regulates Public Water Supply and oversees injection wells not regulated by RRC.	
40.	For major permits publication of a notice in a daily or weekly newspaper within the area affected by the facility or activity;	40 CFR 124.10(c)(2)(i) (See also 145.11(a)(28))	**§5.204(a)**(2) General notice by publication. To give general notice to local governments and interested or affected persons, the Commission shall publish notice of a draft permit. The Commission shall cause the notice to be published once a week for three consecutive weeks in each newspaper of general circulation in each county where the storage facility is located or is to be located.			
41.	When the program is being administered by an approved State, in a manner constituting legal notice to the public under State law; and	40 CFR 124.10(c)(3) (See also 145.11(a)(28))	**§5.204(a)(3)(A)(XII)(iii)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
42.	Any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.	40 CFR 124.10(c)(4) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)((iv)-(xii)**			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
43.	Contents (applicable to State programs, see §145.11 (UIC))—(1) All public notices. All public notices issued under this part shall contain the following minimum information:	40 CFR 124.10(d)(1) (See also 145.11(a)(28))	**§5.204(a)(3)(A)(XII)(iii)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
44.	Name and address of the office processing the permit action for which notice is being given;	40 CFR 124.10(d)(1)(i) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(XII)(iii)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
45.	Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;	40 CFR 124.10(d)(1)(ii) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(XII)(iii)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
46.	A brief description of the business conducted at the facility or activity described in the permit application or the draft permit.	40 CFR 124.10(d)(1)(iii) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(XII)(iii)** (iii) Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
47.	Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit, fact sheet, and the application; and	40 CFR 124.10(d)(1)(iv) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(XII)(iii)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
48.	A brief description of the comment procedures required by §§ 124.11 and 124.12 and the time and place of any hearing that will be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled) and other procedures by which the public may participate in the final permit decision.	40 CFR 124.10(d)(1)(v) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(XII)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
49.	Any additional information considered necessary or proper.	40 CFR 124.10(d)(1)(x) (See also 145.11(a)(28))	**§5.204.(a)(3)(A)(XII)(iii)** Notices shall include information satisfying the requirements of 40 CFR §124.10(d) and the Texas Government Code, Chapter 2001.			
50.	Public notices for hearings. In addition to the general public notice described in paragraph (d)(1) of this section, the public notice of a hearing under § 124.12 shall contain the following information:	40 CFR 124.10(d)(2) (See also 145.11(a)(28))	**§5.204 (a)(1)(C)** Public notice of a public hearing shall be given at least 30 days before the hearing. Public notice of a hearing may be given at the same time as public notice of the draft permit and the two notices may be combined. Upon the written request of the applicant, The Commission must give notice of a hearing to all affected persons, local governments, and other persons who express, in writing, an interest in the application. After the hearing, the examiner will recommend a final action by the Commission. Notices shall include information satisfying the requirements of 40 Code of Federal Regulations §124.10(d)(2) and the Texas Government Code, Chapter 2001.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
51.	Reference to the date of previous public notices relating to the permit;	40 CFR 124.10(d)(2)(i) (See also 145.11(a)(28))	**§5.204 (a)(1)(C)**	.		
52.	Date, time, and place of the hearing;	40 CFR 124.10(d)(2)(ii) (See also 145.11(a)(28))	**§5.204 (a)(1)(C)**	.		
53.	A brief description of the nature and purpose of the hearing, including the applicable rules and procedures;	40 CFR 124.10(d)(2)(iii) (See also 145.11(a)(28))	**§5.204 (a)(1)(C)**			
54.	(Applicable to State programs, see §145.11 (UIC).) In addition to the general public notice described in paragraph (d)(1) of this section, all persons identified in paragraphs (c)(1) (i), (ii), (iii), and (iv) of this section shall be mailed a copy of the fact sheet, the permit application (if any) and the draft permit (if any).	40 CFR 124.10(e) (See also 145.11(a)(28))	**§5.204(a)(3)**			
§ 124.11 Public comments and requests for public hearings.						

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
55.	(Applicable to State programs, see §145.11 (UIC).) During the public comment period provided under §124.10, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in §124.17.	40 CFR 124.11 (See also 145.11(a)(29))	**§5.204(c) Public comment and hearing requirements** **(1) Public comment** (A) During the public comment period, interested person may submit written comments on the draft permit and may request a hearing if one has not already been scheduled. (B) Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. (C) The public comment period shall automatically be extended to the close of any public hearing under this section. The hearing examiner may also extend the comment period by so stating at the hearing. **(2) Public hearing** (A) If the Commission receives a protest regarding an application for a new permit or for an amendment of an existing permit for a geologic storage facility from a person notified pursuant to subsection (b) of this section or from any other affected person within 30 days of the date of receipt of the application by the division, receipt of individual notice, or last publication of notice, whichever is later, then the director will notify the applicant that the director cannot administratively approve the application. Upon the written request of the applicant, the director will schedule a hearing on the application. The Commission must give notice of the hearing to all affected persons, local governments, and other persons who express, in writing, an interest in the application. After the hearing, the examiner will recommend a final action by the Commission.			
§ 124.12 Public hearings.						
56.	(Applicable to State programs, see §145.11 (UIC).) (1) The Director shall hold a public hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit(s);	40 CFR 124.12(a)(1) (See also 145.11(a)(30))	**§5.204(c)(2)(B)** The director shall hold a public hearing whenever he or she finds, on the basis of requests, a significant degree of public interest in a draft permit; and			
57.	The Director may also hold a public hearing at his or her discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision;	40 CFR 124.12(a)(2) (See also 145.11(a)(30))	**§5.204(c)(2)(C)** The director may also hold a public hearing at his or her discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
58.	Public notice of the hearing shall be given as specified in **§124.10 Public notice of permit actions and public comment period.** **(a)** ***Scope***. (1) The Director shall give public notice that the following actions have occurred: (i) A permit application has been tentatively denied under §124.6(b); (ii) *(Applicable to State programs, see 145.11 (UIC)).* A draft permit has been prepared under §124.6(d); (iii) *(Applicable to State programs, see §145.11 (UIC).* A hearing has been scheduled under § 124.12, subpart E or subpart F; (iv) An appeal has been granted under §124.19(c); (2) No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under § 124.5(b). Written notice of that denial shall be given to the requester and to the permittee. (3) Public notices may describe more than one permit or permit actions. **(b)** ***Timing*** *(applicable to State programs, 145.11 (UIC)* (1) Public notice of the preparation of a draft permit (including a notice of intent to deny a permit application) required under paragraph (a) of this section shall allow at least 30 days for public comment. (2) Public notice of a public hearing shall be given at least 30 days before the hearing. (Public notice of the hearing may be given at the same time as	40 CFR 124.12(a)(4) (See also 145.11(a)(30))	**§5.204(a)(1)(C)**			
59.	Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under §124.10 shall automatically be extended to the close of any public hearing under this section. The hearing officer may also extend the comment period by so stating at the hearing.	40 CFR 124.12(c)		Not required of state programs.		
60.	A tape recording or written transcript of the hearing shall be made available to the public.	40 CFR 124.12(d)		Not required of state programs .		
§ 124.17 Response to comments.						
61.	(Applicable to State programs, see §145.11 (UIC).) At the time that any final permit decision is issued under §124.15, the Director shall issue a response to comments. States are only required to issue a response to comments when a final permit is issued. This response shall:	40 CFR 124.17(a) (See also 145.11(a)(31))	**§5.204 (4)(E)(c)(1)**			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
62.	Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and	40 CFR 124.17(a)(1) (See also 145.11(a)(31))	No reference found			
63.	Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any hearing.	40 CFR 124.17(a)(2) (See also 145.11(a)(31))	No reference found			
64.	(Applicable to State programs, see §145.11 (UIC).) The response to comments shall be available to the public.	40 CFR 124.17(c) (See also 145.11(a)(31))	All draft permits, fact sheets, permits and responses to comments will be placed on the Commission's website.			
PART 144--UNDERGROUND INJECTION CONTROL PROGRAM						
SUBPART A--GENERAL PROVISIONS						
40 CFR §144.1 Purpose and scope of Part 144.						
65.	Subpart H of part 146 sets forth requirements for owners or operators of Class VI injection wells.	40 CFR §144.1(f)(1)(viii)		No equivalent provision is needed.		
66.	*Scope of the permit or rule requirement.* The UIC permit program regulates underground injection by six classes of wells (see definition of ''well injection,'' §144.3). The six classes of wells are set forth in §144.6. All owners or operators of these injection wells must be authorized either by permit or rule by the Director. In carrying out the mandate of the SDWA, this subpart provides that no injection shall be authorized by permit or rule if it results in the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 141 or may adversely affect the health of persons (§144.12). No aquifer is an exempted aquifer until it has been affirmatively designated under the procedures at §144.7. During initial Class VI program development, the Director shall not expand the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption for Class VI injection wells and EPA shall not approve a program that applies for aquifer exemption expansions of Class II-Class VI exemptions as part of the program description. All Class II to Class VI aquifer exemption expansions previously issued by EPA must be incorporated into the Class VI program descriptions pursuant to requirements at §145.23(f)(9).***	40 CFR §144.1(g)		No equivalent provision is needed.		

Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.3 Definitions. DEFINE MAJOR FACILITY – any Class VI facility or activity classified as such by the RA in conjunction with the Director.					
67. *Administrator* means the Administrator of the United States Environmental Protection Agency, or an authorized representative.		No reference found.	This language is required only if the state's regulation does not explicitly use the term "EPA Administrator" when referring to the EPA Administrator. For example, if the state refers to the EPA Administrator as simply "the Administrator," this definition is required. If the state uses the term "EPA Administrator" in its rule language, no definition is required.		
68. *Application* means the EPA standard national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in approved States, including any approved modifications or revisions.		No reference found.	Not required of state programs.		
69. *Approved State Program* means a UIC program administered by the State or Indian Tribe that has been approved by EPA according to SDWA sections 1422 and/or 1425.		No reference found.	Not required of state programs.		
70. *Aquifer* means a geological "formation," group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.		**§5.102**(4) Aquifer--A geologic formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.			
71. *Contaminant* means any physical, chemical, biological, or radiological substance or matter in water.		**§5.102(13)** Contaminant – Any physical, chemical, biological, or radiological substance or matter in water, excluding indigenous flora and fauna.			
72. *Director* means the Regional Administrator, the State director or the Tribal director as the context requires, or an authorized representative. When there is no approved State or Tribal program, and there is an EPA administered program, "Director" means the Regional Administrator. When there is an approved State or Tribal program, "Director" normally means the State or Tribal director. In some circumstances, however, EPA retains the authority to take certain actions even when there is an approved State or Tribal program. In such cases, the term "Director" means the Regional Administrator and not the State or Tribal director.		**§5.102**(12) Director--The director of the Oil and Gas Division of the commission or the director's delegate.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
73.	*Draft permit* means a document prepared under §124.6 indicating the Director's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a "permit." A notice of intent to terminate a permit, and a notice of intent to deny a permit, as discussed in §124.5 are types of "draft permits." A denial of a request for modification, revocation and reissuance, or termination, as discussed in §124.5 is not a "draft permit."		**§5.102** (17) Draft permit -- A a document prepared indicating the director's tentative decision to issue or deny, modify, revoke and reissue, cancel, or reissue a permit. A notice of intent to cancel a permit, and a notice of intent to deny a permit are types of "draft permits." A denial of a request for modification, revocation and reissuance, or termination is not a draft permit.			
74.	*Drilling mud* means a heavy suspension used in drilling an "injection well," introduced down the drill pipe and through the drill bit.		No reference found.	Not required of state programs.		
75.	*Eligible Indian Tribe* is a Tribe that meets the statutory requirements established at 42 U.S.C. 300j-11(b)(1).		No reference found.	Not required of state programs.		
76.	*Environmental Protection Agency* ("EPA") means the United States Environmental Protection Agency.		No reference found.	Not required of state programs.		
77.	*Exempted aquifer* means an "aquifer" or its portion that meets the criteria in the definition of "underground source of drinking water" but which has been exempted according to the procedures in §144.7.		**§5.102**(20) Exempted aquifer -- An aquifer or its portion that meets the criteria in the definition of underground source of drinking water but which has been exempted according to the procedures in 40 CFR §144.7.			
78.	*Existing injection* well means an "injection well" other than a "new injection well."		No reference found.	This definition is optional if the state does not distinguish between new and existing injection wells.		
79.	*Facility or activity* means any UIC "injection well," or an other facility or activity that is subject to regulation under the UIC program.		§5.102 (19) Geologic storage facility or storage facility--The underground reservoir, underground equipment, injection wells, and surface buildings and equipment used or to be used for the geologic storage of anthropogenic CO_2 and all surface and subsurface rights and appurtenances necessary to the operation of a facility for the geologic storage of anthropogenic CO_2. The term includes any reasonable and necessary areal buffer, subsurface monitoring zones, and pressure fronts. The term does not include a pipeline used to transport CO_2 from the facility at which the CO_2 is captured to the geologic storage facility. The storage of CO_2 incidental to or as part of enhanced recovery operations does not in itself automatically render a facility a geologic storage facility.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
80.	*Fluid* means any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state.		Texas Water Code, §27.002(7) (7) "Fluid" means a material or substance that flows or moves in a liquid, gaseous, solid, semi-solid, sludge, or other form or state.			
81.	*Formation* means a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.		**§5.102**(23) Formation – A body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.			
82.	*Formation fluid* means "fluid" present in a "formation" under natural conditions as opposed to introduced fluids, such as "drilling mud."		§5.102(16) Formation fluid--Fluid present in a formation under natural conditions.			
83.	*Geologic sequestration* means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. This term does not apply to carbon dioxide capture or transport.***	40 CFR §144.3	§5.102(18) Geologic storage--The long-term containment of anthropogenic CO_2 in a reservoir.			
84.	*Ground water* means water below the land surface in a zone of saturation.		Texas Water Code §26.001(5) "Water" or "water in the state" means groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico, inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state.			
85.	*Hazardous waste* means a hazardous waste as defined in 40 CFR 261.3.		No reference found.	The state regulation does not include this definition in the context of Class VI well requirements.		
86.	*Indian Tribe* means any Indian Tribe having a Federally recognized governing body carrying out substantial governmental duties and powers over a defined area.		No reference found.	This provision is not required of state programs.	Negligible Indian lands in Texas	

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
87.	*Injection well* means a "well" into which "fluids" are being injected.		Texas Water Code,§ 27.002(11) "Injection well" means an artificial excavation or opening in the ground made by digging, boring, drilling, jetting, driving, or some other method, and used to inject, transmit, or dispose of industrial and municipal waste or oil and gas waste into a subsurface stratum; or a well initially drilled to produce oil and gas which is used to transmit, inject, or dispose of industrial and municipal waste or oil and gas waste into a subsurface stratum; or a well used for the injection of any other fluid; but the term does not include any surface pit, surface excavation, or natural depression used to dispose of industrial and municipal waste or oil and gas waste.			
88.	*New injection* wells means an "injection well" which began injection after a UIC program for the State applicable to the well is approved or prescribed.		No reference found.	This language is optional if the state regulation does not distinguish between new and existing wells.		
89.	*Owner or operator* means the owner or operator of any "facility or activity" subject to regulation under the UIC program.		§5.102(23) Operator--A person, acting for himself or as an agent for others, designated to the Railroad Commission of Texas as the person with responsibility for complying with the rules and regulations regarding the permitting, physical operation, closure, and post-closure care of a geologic storage facility, or such person's authorized representative.		RRC holds the "operator" responsible for compliance.	
90.	*Permit* means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of this part, parts 145, 146 and 124. "Permit" includes an area permit (§144.33) and an emergency permit (§144.34). Permit does not include UIC authorization by rule (§144.21), or any permit which has not yet been the subject of final agency action, such as a "draft permit."		**§5.102**(36) Permit -- An authorization, license, or equivalent control document issued by the Commission to implement the requirements of chapter.			
91.	*Person* means an individual, association, partnership, corporation, municipality, state, federal, or tribal agency, or an agency or employee thereof		§5.102(24) Person--A natural person, corporation, organization, government, governmental subdivision or agency, business trust, estate, trust, partnership, association, or any other legal entity.			
92.	*RCRA* means the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (Pub. L. 94–580, as amended by Pub. L. 95–609, Pub. L. 96–510, 42 U.S.C. 6901 *et seq*.).		No reference found.	Not required of state programs.		

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
93.	*Regional Administrator* means the Regional Administrator of the appropriate Regional Office of the Environmental Protection Agency or the authorized representative of the Regional Administrator.		No reference found.	Not required of state programs.		
94.	*SDWA* means the Safe Drinking Water Act (Pub. L. 93–523, as amended; 42 U.S.C. 300f *et seq*.).		No reference found.	Not required of state programs.		
95.	*Site* means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.		No reference found.	The state regulation does not include this definition in the context of Class VI well requirements.		
96.	*State* means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, or an Indian Tribe treated as a State.		No reference found.	Not required of state programs.		
97.	*State Director* means the chief administrative officer of any State, interstate, or Tribal agency operating an "approved program," or the delegated representative of the State director. If the responsibility is divided among two or more States, interstate, or Tribal agencies, "State Director" means the chief administrative officer of the State, interstate, or Tribal agency authorized to perform the particular procedure or function to which reference is made.		§5.102(12) Director--The director of the Oil and Gas Division of the Railroad Commission of Texas or the director's delegate.			
98.	*Stratum* (plural strata) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.		**§5.102**(42) Stratum (plural strata) -- A single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.			
99.	*Total dissolved solids* means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR part 136.		No reference found.	Not required of state programs.		
100.	*UIC* means the Underground Injection Control program under Part C of the Safe Drinking Water Act, including an "approved State program."		No reference found.	Not required of state programs.		
101.	*Underground injection* means a "well injection."		No reference found.		Understood in the context of Class VI injection wells. Understood in the context of Class VI injection wells.	

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
102.	*Underground source of drinking water* (USDW) means an aquifer or its portion: (a)(1) Which supplies any public water system; or (2) Which contains a sufficient quantity of ground water to supply a public water system; and (i) Currently supplies drinking water for human consumption; or (ii) Contains fewer than 10,000 mg/l total dissolved solids; and (b) Which is not an exempted aquifer.		§5.102(29) Underground source of drinking water--An aquifer or its portion which is not an exempt aquifer as defined in 40 Code of Federal Regulations §146.4 and which: (A) supplies any public water system; or (B) contains a sufficient quantity of ground water to supply a public water system; and (i) currently supplies drinking water for human consumption; or (ii) contains fewer than 10,000 mg/l TDS.			
103.	*Well* means: A bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.		Texas Water Code §27.102 (11) "Injection well" means an artificial excavation or opening in the ground made by digging, boring, drilling, jetting, driving, or some other method, and used to inject, transmit, or dispose of industrial and municipal waste or oil and gas waste into a subsurface stratum; or a well initially drilled to produce oil and gas which is used to transmit, inject, or dispose of industrial and municipal waste or oil and gas waste into a subsurface stratum; or a well used for the injection of any other fluid; but the term does not include any surface pit, surface excavation, or natural depression used to dispose of industrial and municipal waste or oil and gas waste.			
104.	*Well injection* means the subsurface emplacement of fluids through a well.		**§5.102** (46) Well injection – The subsurface emplacement of fluids through a well.			
40 CFR §144.6 Classification of wells.						
105.	Injection wells are classified as follows:	40 CFR 144.6 (See also 145.11(a)(2))				
106.	*Class II.* Wells which inject fluids:	40 CFR 144.6(b) (See also 145.11(a)(2))	No reference found.	Not required of state programs.		
107.	Which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection.	40 CFR 144.6(b)(1) (See also 145.11(a)(2))	No reference found.	Not required of state programs.		
108.	For enhanced recovery of oil or natural gas; and	40 CFR 144.6(b)(2) (See also 145.11(a)(2)	No reference found.	Not required of state programs.		

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
109.	For storage of hydrocarbons which are liquid at standard temperature and pressure.	40 CFR 144.6(b)(3) (See also 145.11(a)(2))	No reference found.	Not required of state programs.		
110.	*Class V*. Injection wells not included in Class I, II, III, IV, or VI. Specific types of Class V injection wells are described in §144.81.	40 CFR §144.6(e)	No reference found.	Not required of state programs.		
111.	*Class VI*. Wells that are not experimental in nature that are used for geologic sequestration of carbon dioxide beneath the lowermost formation containing a USDW; or, wells used for geologic sequestration of carbon dioxide that have been granted a waiver of the injection depth requirements pursuant to requirements at §146.95 of this chapter; or, wells used for geologic sequestration of carbon dioxide that have received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to §§146.4 of this chapter and 144.7(d).	40 CFR §144.6(f)	**§5.201 Applicability and Compliance** (a) This subchapter applies to the GS of anthropogenic CO2 in, and the injection of anthropogenic CO2 into, a reservoir.		The rule applicability clearly indicates that wells injecting CO2 for geological storage must be permitted as Class VI wells.	

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.7 Identification of underground sources of drinking water and exempted aquifers.						
112.	The Director may identify (by narrative description, illustrations, maps, or other means) and shall protect as underground sources of drinking water, all aquifers and parts of aquifers which meet the definition of "underground source of drinking water" in §144.3, except to the extent there is an applicable aquifer exemption under paragraph (b) of this section or an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption for the exclusive purpose of Class VI injection for geologic sequestration under paragraph (d) of this section. Other than EPA approved aquifer exemption expansions that meet the criteria set forth in §146.4(d) of this chapter, new aquifer exemptions shall not be issued for Class VI injection wells. Even if an aquifer has not been specifically identified by the Director, it is an underground source of drinking water if it meets the definition in §144.3.	40 CFR §144.7(a)	**§5.101 Purpose.** The purpose of this chapter is to implement the portion of the state program for geologic storage of anthropogenic CO_2 over which the Railroad Commission has jurisdiction consistent with state and federal law related to protection of underground sources of drinking water. **§5.102(20) Exempted aquifer**--An aquifer or its portion that the criteria in the definition of USDW but which has been exempted according to the procedures in 40 CFR §144.7. **§5.201(e) Expansion of aquifer exemption.** The areal extent of an aquifer exemption for a Class II enhanced recovery well may be expanded for the exclusive purpose of Class VI injection for geologic storage if the aquifer does not currently serve as a source of drinking water; and the total dissolved solids content is more than 3,000 milligrams per liter (mg/l) and less than 10,000 mg/l; and it is not reasonably expected to supply a public water system in accordance with 40 CFR §146.4. An operator seeking such an expansion shall submit, concurrent with the permit application, a supplemental report that complies with 40 CFR §144.7(d). The Commission adopts 40 CFR §144.7 and §146.4 by reference, effective July 1, 2022.			
113.	The Director may identify (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite, all aquifers or parts thereof which the Director proposes to designate as exempted aquifers using the criteria in §146.4 of this chapter.	40 CFR §144.7(b)(1)		Not required		

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
114.	No designation of an exempted aquifer submitted as part of a UIC program shall be final until approved by the Administrator as part of a UIC program. No designation of an expansion to the areal extent of a Class II enhanced oil recovery or enhanced gas recovery aquifer exemption for the exclusive purpose of Class VI injection for geologic sequestration shall be final until approved by the Administrator as a revision to the applicable Federal UIC program under part 147 or as a substantial revision of an approved State UIC program in accordance with §145.32 of this chapter. ***	40 CFR §144.7(b)(2)	**§5.201(e) Applicability and compliance**			
115.	*Expansion to the Areal Extent of Existing Class II Aquifer Exemptions for Class VI Wells*. Owners or operators of Class II enhanced oil recovery or enhanced gas recovery wells may request that the Director approve an expansion to the areal extent of an aquifer exemption already in place for a Class II enhanced oil recovery or enhanced gas recovery well for the exclusive purpose of Class VI injection for geologic sequestration. Such requests must be treated as a revision to the applicable Federal UIC program under part 147 or as a substantial program revision to an approved State UIC program under §145.32 of this chapter and will not be final until approved by EPA.	40 CFR §144.7(d)	**§5.201 Applicability and compliance** (e) Expansion of aquifer exemption. The areal extent of an aquifer exemption for a Class II enhanced recovery well may be expanded for the exclusive purpose of Class VI injection for geologic storage if it does not currently serve as a source of drinking water; and the total dissolved solids content is more than 3,000 milligrams per liter (mg/l) and less than 10,000 mg/l; and it is not reasonably expected to supply a public water system in accordance with 40 CFR §146.4. An operator seeking such an expansion shall submit, concurrent with the permit application, a supplemental report that complies with 40 CFR §144.7(d). The Commission adopts 40 CFR §144.7 and §146.4 by reference, effective July 1, 2022.			
116.	The owner or operator of a Class II enhanced oil recovery or enhanced gas recovery well that requests an expansion of the areal extent of an existing aquifer exemption for the exclusive purpose of Class VI injection for geologic sequestration must define (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) that are clear and definite, all aquifers or parts thereof that are requested to be designated as exempted using the criteria in §146.4 of this chapter.	40 CFR §144.7(d)(1)	**§5.201(e)**			
117.	In evaluating a request to expand the areal extent of an aquifer exemption of a Class II enhanced oil recovery or enhanced gas recovery well for the purpose of Class VI injection, the Director must determine that the request meets the criteria for exemptions in §146.4. In making the determination, the Director shall consider:	40 CFR §144.7(d)(2)	**§5.201**(e)			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
118.	Current and potential future use of the USDWs to be exempted as drinking water resources;	40 CFR §144.7(d)(2)(i)	**§5.201(e)**			
119.	The predicted extent of the injected carbon dioxide plume, and any mobilized fluids that may result in degradation of water quality, over the lifetime of the GS project, as informed by computational modeling performed pursuant to §146.84(c)(1), in order to ensure that the proposed injection operation will not at any time endanger USDWs including non-exempted portions of the injection formation;	40 CFR §144.7(d)(2)(ii)	**§5.203**(d)1(A)(i) Using computational modeling that considers the volumes and the physical and chemical properties of the injected CO2 stream, the physical properties of the formation into which the CO2 stream is to be injected, and available data including data available from logging, testing, or operation of wells, the applicant must predict the lateral and vertical extent of migration for the CO2 plume and formation fluids and the pressure differentials required to cause movement of injected fluids or formation fluids into an underground source of drinking water in the subsurface for the following time periods: (I) five years after initiation of injection; (II) from initiation of injection to the end of the injection period proposed by the applicant; and (III) from initiation of injection until the plume movement ceases, for a minimum of [~~to~~] 10 years after the end of the injection period proposed by the applicant.			
120.	Whether the areal extent of the expanded aquifer exemption is of sufficient size to account for any possible revisions to the computational model during reevaluation of the area of review, pursuant to §146.84(e); and	40 CFR §144.7(d)(2)(iii)	**§5.201(e)**			
121.	Any information submitted to support a waiver request made by the owner or operator under §146.95, if appropriate.	40 CFR §144.7(d)(2)(iv)	**§5.201(f)**			
40 CFR §144.8 Noncompliance and program reporting by the Director.						
122.	The Director shall prepare quarterly and annual reports as detailed below. When the State is the permit-issuing authority, the State Director shall submit any reports required under this section to the Regional Administrator. (a) *Quarterly reports.* The Director shall submit quarterly narrative reports for major facilities as follows:	40 CFR 144.8(a) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, and need not be included in a state's Class VI regulation.		
123.	*Format.* The report shall use the following format: (i) Provide an alphabetized list of permittees. When two or more permittees have the same name, the lowest permit number shall be entered first.	40 CFR 144.8(a)(1)(i) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, and need not be included in a state's Class VI regulation.		

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
124.	For each entry on the list, include the following information in the following order: (A) Name, location, and permit number of the noncomplying permittees. (B) A brief description and date of each instance of noncompliance for that permittee. Instances of noncompliance may include one or more the kinds set forth in paragraph (a)(2) of this section. When a permittee has noncompliance of more than one kind, combine the information into a single entry for each such permittee. (C) The date(s) and a brief description of the action(s) taken by the Director to ensure compliance. (D) Status of the instance(s) of noncompliance with the date of the review of the status or the date of resolution. (E) Any details which tend to explain or mitigate the instance(s) of noncompliance.	40 CFR 144.8(a)(1)(ii) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
125.	*Instances of noncompliance to be reported.* Any instances of noncompliance within the following categories shall be reported in successive reports until the noncompliance is reported as resolved. Once noncompliance is reported as resolved it need not appear in subsequent reports.	40 CFR 144.8(a)(2) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
126.	*Failure to complete construction elements.* When the permittee has failed to complete, by the date specified in the permit, an element of a compliance schedule involving either planning for construction or a construction step (for example, begin construction, attain operation level); and the permittee has not returned to compliance by accomplishing the required elements of the schedule within 30 days from the date a compliance schedule report is due under the permit.	40 CFR 144.8(a)(2)(i) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
127.	*Modifications to schedules of compliance.* When a schedule of compliance in the permit has been modified under §§144.39 or 144.41 because of the permittee's noncompliance.	40 CFR 144.8(a)(2)(ii) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
128.	*Failure to complete or provide compliance schedule or monitoring reports.* When the permittee has failed to complete or provide a report required in a permit compliance schedule (for example, progress report or notice of noncompliance or compliance) or a monitoring report; and the permittee has not submitted the complete report within 30 days from the date it is due under the permit for compliance schedules, or from the date specified in the permit for monitoring reports.	40 CFR 144.8(a)(2)(iii) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
129.	*Deficient reports.* When the required reports provided by the permittee are so deficient as to cause misunderstanding by the Director and thus impede the review of the status of compliance.	40 CFR 144.8(a)(2)(iv) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
130.	*Noncompliance with other permit requirements.* Noncompliance shall be reported in the following circumstances: (A) Whenever the permittee has violated a permit requirement (other than reported under paragraph (a)(2)(i) or (ii) of this section), and has not returned to compliance within 45 days from the date reporting of noncompliance was due under the permit; or (B) When the Director determines that a pattern of noncompliance exists for a major facility permittee over the most recent four consecutive reporting periods. This pattern includes any violation of the same requirement in two consecutive reporting periods, and any violation of one or more requirements in each of four consecutive reporting periods; or (C) When the Director determines significant permit noncompliance or other significant event has occurred, such as a migration of fluids into a USDW.	40 CFR 144.8(a)(2)(v) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
131.	*All other.* Statistical information shall be reported quarterly on all other instances of noncompliance by major facilities with permit requirements not otherwise reported under paragraph (a) of this section.	40 CFR 144.8(a)(2)(vi) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
132.	*Annual reports* — (1) *Annual noncompliance report.* Statistical reports shall be submitted by the Director on nonmajor UIC permittees indicating the total number reviewed, the number of noncomplying nonmajor permittees, the number of enforcement actions, and number of permit modifications extending compliance deadlines. The statistical information shall be organized to follow the types of noncompliance listed in paragraph (a) of this section.	40 CFR 144.8(b)(1) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
133.	For State-administered UIC Programs only. In addition to the annual noncompliance report, the State Director shall: Submit each year a program report to the Administrator (in a manner and form prescribed by the Administrator) consisting of:	40 CFR 144.8(b)(2)(i) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
134.	A detailed description of the State's implementation of its program;	40 CFR 144.8(b)(2)(i)(A) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
135.	Suggested changes, if any to the program description (see § 145.23(f)) which are necessary to reflect more accurately the State's progress in issuing permits;	40 CFR 144.8(b)(2)(i)(B) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
136.	An updated inventory of active underground injection operations in the State.	40 CFR 144.8(b)(2)(i)(C) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
137.	All Class VI program reports shall be consistent with reporting requirements set forth in §146.91 of this chapter.	40 CFR §144.8(b)(2)(iii)	No reference found	This is a requirement of the state, but need not be included in a state's Class VI regulation.		
138.	Schedule. (1) For all quarterly reports. On the last working day of May, August, November, and February, the State Director shall submit to the Regional Administrator information concerning noncompliance with permit requirements by major facilities in the State in accordance with the following schedule. The Regional Administrator shall prepare and submit information for EPA-issued permits to EPA Headquarters in accordance with the same schedule. QUARTERS COVERED BY REPORTS ON NONCOMPLIANCE BY MAJOR FACILITIES [Date for completion of reports] January, February, and March ..... 1 May 31 April, May, and June ..... 1 Aug. 31 July, August, and September ..... 1 Nov. 30 October, November, and December ..... 1 Feb. 28 1 Reports must be made available to the public for inspection and copying on this date.	40 CFR 144.8(c)(1) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
139.	For all annual reports. The period for annual reports shall be for the calendar year ending December 31, with reports completed and available to the public no more than 60 days later.	40 CFR 144.8(c)(2) (See also 145.11(a)(4))	No reference found.	This is a requirement of the state, but need not be included in a state's Class VI regulation.		

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
SUBPART B--GENERAL PROGRAM REQUIREMENTS						
40 CFR 144.11 Prohibition of unauthorized injection.						
140.	Any underground injection, except into a well authorized by rule or except as authorized by permit issued under the UIC program, is prohibited. The construction of any well required to have a permit is prohibited until the permit has been issued.	40 CFR 144.11 (See also 145.11(a)(5))	**§5.202**(a) Permit required. A person may not begin drilling or operating an anthropogenic CO2 injection well for geologic storage or constructing or operating a geologic storage facility regulated under this subchapter without first obtaining the necessary permit(s) from the commission.			
40 CFR §144.12 Prohibition of movement of fluid into underground sources of drinking water.						
141.	No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this paragraph are met.	40 CFR 144.12(a) (See also 145.11(a)(6))	**§5.203(d)(1)(C)** Corrective action. The applicant must demonstrate whether each of the wells on the table of penetrations has or has not been plugged and whether each of the underground mines (if any) on the table of penetrations has or has not been closed in a manner that prevents the movement of injected fluids or displaced formation fluids that may endanger USDWs or allow the injected fluids or formation fluids to escape the permitted injection zone. The applicant must perform corrective action on all wells and underground mines in the AOR that are determined to need corrective action. The operator must perform corrective action using materials suitable for use with the CO2 stream. Corrective action may be phased.			
142.	If any water quality monitoring of an USDW indicates the movement of any contaminant into the USDW, except as authorized under part 146, the Director shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement.	40 CFR §144.12(b)	**§5.203(j) Plan for monitoring, sampling, and testing after initiation of operation.** (1) The applicant must submit a monitoring, sampling, and testing plan for verifying that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone. **§5.206(g)(3) Action.** If an operator obtains evidence that the injected CO2 stream and associated pressure front may cause an endangerment to USDWs, the operator must: (A) immediately cease injection; (B) take all steps reasonably necessary to identify and characterize any release; (C) notify the director as soon as practicable but within at least 24 hours; and (D) implement the approved emergency and remedial response plan.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
143.	Notwithstanding any other provision of this section, the Director may take emergency action upon receipt of information that a contaminant which is present in or likely to enter a public water system or USDW may present an imminent and substantial endangerment to the health of persons.	40 CFR 144.12(e) (See also 145.11(a)(6))	**§5.202(d)(2)** Emergency shutdown. Notwithstanding the provisions of paragraph (1) of this subsection, in the event of an emergency that threatens endangerment to USDWs or to life or property, or an imminent threat of uncontrolled release of CO2, the director may immediately order suspension of the operation of the GS facility until a final order is issued pursuant to a hearing, if any.			
40 CFR §144.15 Prohibition of non-experimental Class V wells for geologic sequestration.						
144.	The construction, operation or maintenance of any non-experimental Class V geologic sequestration well is prohibited.	40 CFR §144.15	No reference found		The state regulation does not contain this prohibition; however, the statutes and rules require a Class VI permit for the construction, operation and maintenance of geologic sequestration wells.	
40 CFR 144.16 Waiver of requirement by Director.						
145.	When injection does not occur into, through or above an USDW, the Director may authorize a well or project with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required in 40 CFR part 146 or § 144.52 to the extent that the reduction in requirements will not result in an increased risk of movement of fluids into an underground source of drinking water.	40 CFR 144.16(a)	No reference found.	Not required of state programs.		
146.	When injection occurs through or above an USDW, but the radius of endangering influence when computed under §146.06(a) is smaller or equal to the radius of the well, the Director may authorize a well or project with less stringent requirements for operation, monitoring, and reporting than required in 40 CFR part 146 or § 144.52 to the extent that the reduction in requirements will not result in an increased risk of movement of fluids into an underground source of drinking water.	40 CFR 144.16(b)	No reference found.	Not required of state programs.		
147.	When reducing requirements under paragraph (a) or (b) of this section, the Director shall prepare a fact sheet under §124.8 explaining the reasons for the action.	40 CFR 144.16(c)	No reference found.	Not required of state programs.		

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR 144.17 Records.						
148.	The Director may require, by written notice on a selective well-by-well basis, an owner or operator of an injection well to establish and maintain records, make reports, conduct monitoring, and provide other information as is deemed necessary to determine whether the owner or operator has acted or is acting in compliance with Part C of the SDWA or its implementing regulations.	40 CFR 144.17	**§5.206(d) Monitoring, sampling, and testing requirements**. The operator of an anthropogenic CO2 injection well must maintain and comply with the approved monitoring, sampling, and testing plan to verify that the GS facility is operating as permitted and that the injected fluids are confined to the injection zone. The director may require additional monitoring as necessary to support, upgrade, and improve computational modeling of the area of review evaluation and to determine compliance with the requirement that the injection activity not allow movement of fluid that would endanger USDWs.			
40 CFR §144.18 Requirements for Class VI wells.						
149.	Owners or operators of Class VI wells must obtain a permit. Class VI wells cannot be authorized by rule to inject carbon dioxide.	40 CFR §144.18	**§5.202(a) Permit required**. A person may not begin drilling or operating an anthropogenic CO_2 injection well for geologic storage or constructing or operating a geologic storage facility regulated under this subchapter without first obtaining the necessary permit(s) from the Commission.		Neither the statutes nor the regulations provide for authorization by rule for Class VI injection wells.	

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.19 Transitioning from Class II to Class VI.						
150.	Owners or operators that are injecting carbon dioxide for the primary purpose of long- term storage into an oil and gas reservoir must apply for and obtain a Class VI geologic sequestration permit when there is an increased risk to USDWs compared to Class II operations. In determining if there is an increased risk to USDWs, the owner or operator must consider the factors specified in §144.19(b).	40 CFR §144.19(a)	**§5.201 Applicability and Compliance** **(b)** Injection of CO2 for enhanced recovery. (1) This subchapter does not apply to the injection of fluid through the use of an injection well regulated under §3.46 for the primary purpose of enhanced recovery operations from which there is reasonable expectation of more than insignificant future production volumes of oil, gas, or geothermal energy and operating pressures are no higher than reasonably necessary to produce such volumes or rates. However, the operator of an ER project may propose to also permit the ER project as a CO2 GS facility simultaneously. (2) If the director determines that an injection well regulated under §3.46 should be regulated under this subchapter because the injection well is no longer being used for the primary purpose of ER operations or there is an increased risk to USDWs, the director must notify the operator of such determination and allow the operator at least 30 days to respond to the determination and to file an application under this subchapter or cease operation of the well. In determining if there is an increased risk to USDWs, the director shall consider the following factors: (A) Increase in reservoir pressure within the injection zone; (B) Increase in CO2 injection rates; (C) Decrease in reservoir production rates; (D) Distance between the injection zone and USDWs; (E) Suitability of the enhanced oil or gas recovery area of review delineation; (F) Quality of abandoned well plugs within the area of review; (G) The storage operator's plan for recovery of CO2 at the cessation of injection; (H) The source and properties of injected CO2; and (I) Any additional site-specific factors as determined by the Commission.			
151.	The Director shall determine when there is an increased risk to USDWs compared to Class II operations and a Class VI permit is required. In order to make this determination the Director must consider the following:	40 CFR §144.19(b)	**§5.201(b)**			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
152.	Increase in reservoir pressure within the injection zone(s);	40 CFR §144.19(b)(1)	**§5.201(b)(2)(A)**			
153.	Increase in carbon dioxide injection rates;	40 CFR §144.19(b)(2)	**§5.201(b)(2)(B)**			
154.	Decrease in reservoir production rates;	40 CFR §144.19(b)(3)	**§5.201(b)(2)(C)**			
155.	Distance between the injection zone(s) and USDWs;	40 CFR §144.19(b)(4)	**§5.201(b)(2)(D)**			
156.	Suitability of the Class II area of review delineation;	40 CFR §144.19(b)(5)	**§5.201(b)(2)(E)**			
157.	Quality of abandoned well plugs within the area of review;	40 CFR §144.19(b)(6)	**§5.201(b)(2)(F)**			
158.	The owner's or operator's plan for recovery of carbon dioxide at the cessation of injection;	40 CFR §144.19(b)(7)	**§5.201(b)(2)(G)**			
159.	The source and properties of injected carbon dioxide; and	40 CFR §144.19(b)(8)	**§5.201(b)(2)(H)**			
160.	Any additional site-specific factors as determined by the Director.	40 CFR §144.19(b)(9)	**§5.201(b)(2)(I)**			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
SUBPART C--AUTHORIZATION OF UNDERGROUND INJECTION BY RULE						
40 CFR §144.22 Existing Class II enhanced recovery and hydrocarbon storage wells.						
161.	Duration of well authorization by rule. Well authorization under this section expires upon the effective date of a permit issued pursuant to §§144.19, 144.25, 144.31, 144.33 or 144.34; after plugging and abandonment in accordance with an approved plugging and abandonment plan pursuant to §§144.28(c) and 146.10 of this chapter; and upon submission of a plugging and abandonment report pursuant to §144.28(k); or upon conversion in compliance with §144.28(j).	40 CFR §144.22(b)	No reference found.	Authorization by rule is not applicable to Class VI wells.		
SUBPART D--AUTHORIZATION BY PERMIT						
40 CFR §144.31 Application for a permit; authorization by permit.						
162.	Permit application. Unless an underground injection well is authorized by rule under subpart C of this part, all injection activities including construction of an injection well are prohibited until the owner or operator is authorized by permit. An owner or operator of a well currently authorized by rule must apply for a permit under this section unless well authorization by rule was for the life of the well or project. Authorization by rule for a well or project for which a permit application has been submitted terminates for the well or project upon the effective date of the permit. Procedures for applications, issuance and administration of emergency permits are found exclusively in § 144.34..	40 CFR 144.31(a) (See also 145.11(a)(10))	**§5.202(a) Permit required**. A person may not begin drilling or operating an anthropogenic CO_2 injection well for geologic storage or constructing or operating a geologic storage facility regulated under this subchapter without first obtaining the necessary permit(s) from the Commission.			
163.	Who applies? When a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit.	40 CFR 144.31(b) (See also 145.11(a)(10))	**§5.202 Permit Required** (a) Permit required. A person may not begin drilling or operating an anthropogenic CO2 injection well for GS or constructing or operating a GS facility regulated under this subchapter without first obtaining the necessary permit(s) from the Commission.		The state regulation requires that the operator apply for the permit.	
164.	Time to apply. Any person who performs or proposes an underground injection for which a permit is or will be required shall submit an application to the Director in accordance with the UIC program as follows:	40 CFR 144.31(c) (See also 145.11(a)(10))	§5.202(a)			
165.	For existing wells, as expeditiously as practicable and in accordance with the schedule in any program description under § 145.23(f), but no later than 4 years from the approval or promulgation of the UIC program.	40 CFR 144.31(c)(1) (See also 145.11(a)(10))	No reference found.	Not required of state programs.		

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
166.	For new injection wells, except new wells in projects authorized under §144.21(d) or authorized by an existing area permit under §144.33(c), a reasonable time before construction is expected to begin.	40 CFR 144.31(c)(2) (See also 145.11(a)(10))	§5.202(a)		There is no specific provision related to the timing of permit applications; however construction may not commence without a permit.	
167.	Completeness. The Director shall not issue a permit before receiving a complete application for a permit except for emergency permits. An application for a permit is complete when the Director receives an application form and any supplemental information which are completed to his or her satisfaction. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity.	40 CFR 144.31(d) (See also 145.11(a)(10))	**§5.203**(3) **Application completeness**. The Commission may not issue a permit before receiving a complete application. A permit application is complete when the director determines that the application contains information addressing each application requirement of the regulatory program and all information necessary to initiate the final review by the director.		State rules do not provide for issuance of emergency permits for Class VI wells.	
168.	(e) ***Information requirements.*** All applicants for Class I, II, III, and V permits shall provide the following information to the Director, using the application form provided by the Director. Applicants for Class VI permits shall follow the criteria provided in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.82"] of this chapter.	40 CFR §144.31(e)	Not required for Class VI wells			
169.	The activities conducted by the applicant which require it to obtain permits under RCRA, UIC, the National Pollution Discharge Elimination system (NPDES) program under the Clean Water Act, or the Prevention of Significant Deterioration (PSD) program under the Clean Air Act.	40 CFR 144.31(e)(1) (See also 145.11(a)(10))	See 40 CFR 144.31(e)(6). Not applicable to Class VI wells			
170.	Name, mailing address, and location of the facility for which the application is submitted.	40 CFR 144.31(e)(2) (See also 145.11(a)(10))	Not applicable to Class VI wells			
171.	Up to four SIC codes which best reflect the principal products or services provided by the facility.	40 CFR 144.31(e)(3) (See also 145.11(a)(10))	Not applicable to Class VI wells			
172.	The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity.	40 CFR 144.31(e)(4) (See also 145.11(a)(10))	Not applicable to Class VI wells			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
173.	Whether the facility is located on Indian lands.	40 CFR 144.31(e)(5) (See also 145.11(a)(10))	Not applicable to Class VI wells		Very minimal Indian lands in Texas	
174.	A listing of all permits or construction approvals received or applied for under any of the following programs:	40 CFR 144.31(e)(6) (See also 145.11(a)(10))		Not applicable to Class VI wells		
175.	Hazardous Waste Management program under RCRA.	40 CFR 144.31(e)(6)(i) (See also 145.11(a)(10))		Not applicable to Class VI wells		
176.	UIC program under SDWA.	40 CFR 144.31(e)(6)(ii) (See also 145.11(a)(10))		Not applicable to Class VI wells		
177.	NPDES program under CWA.	40 CFR 144.31(e)(6)(iii) (See also 145.11(a)(10))		Not applicable to Class VI wells		
178.	Prevention of Significant Deterioration (PSD) program under the Clean Air Act.	40 CFR 144.31(e)(6)(iv) (See also 145.11(a)(10))		Not applicable to Class VI wells		
179.	Nonattainment program under the Clean Air Act.	40 CFR 144.31(e)(6)(v) (See also 145.11(a)(10))		Not applicable to Class VI wells		
180.	National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act.	40 CFR 144.31(e)(6)(vi) (See also 145.11(a)(10))		Not applicable to Class VI wells		
181.	Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.	40 CFR 144.31(e)(6)(vii) (See also 145.11(a)(10))		Not applicable to Class VI wells		
182.	Dredge and fill permits under section 404 of CWA.	40 CFR 144.31(e)(6)(viii) (See also 145.11(a)(10))		Not applicable to Class VI wells		
183.	Other relevant environmental permits, including State permits.	40 CFR 144.31(e)(6)(ix) (See also 145.11(a)(10))		Not applicable to Class VI wells.		

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
§ 144.32 Signatories to permit applications and reports.						
184.	Applications. All permit applications, except those submitted for Class II wells (see paragraph (b) of this section), shall be signed as follows:	40 CFR 144.32(a) (See also 145.11(a)(11))	**§5.203(a)(1)(B)** (B) Signatories to permit applications. An applicant must ensure that the application is executed by a party having knowledge of the facts entered on the form and included in the required attachments. All permit applications shall be signed as specified in this subparagraph: (i) For a corporation, the permit application shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned 10 or delegated to the manager in accordance with corporate procedures. (ii) For a partnership or sole proprietorship, the permit application shall be signed by a general partner or the proprietor, respectively. (iii) For a municipality, State, Federal, or other public agency, the permit application shall be signed by either a principal executive officer or ranking elected official.			
185.	For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means;	40 CFR 144.32(a)(1) (See also 145.11(a)(11))	**§5.203(a)(1)(B)**			
186.	A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision making functions for the corporation, or	40 CFR 144.32(a)(1)(i) (See also 145.11(a)(11))	**§5.203(a)(1)(B)**			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
187.	the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. NOTE: EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in § 144.32(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under § 144.32(a)(1)(ii) rather than to specific individuals.	40 CFR 144.32(a)(1)(ii) (See also 145.11(a)(11))	**§5.203(a)(1)(B)**			
188.	For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or	40 CFR 144.32(a)(2) (See also 145.11(a)(11))	**§5.203(a)(1)(B)**			
189.	For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:	40 CFR 144.32(a)(3) (See also 145.11(a)(11))	No reference			
190.	The chief executive officer of the agency, or	40 CFR 144.32(a)(3)(i) (See also 145.11(a)(11))	No reference	The state regulation does not describe acceptable federal signatories.		
191.	a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).	40 CFR 144.32(a)(3)(ii) (See also 145.11(a)(11))	No reference	The state regulation does not describe acceptable federal signatories.		
192.	Reports. All reports required by permits, other information requested by the Director, and all permit applications submitted for Class II wells under § 144.31 shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:	40 CFR 144.32(b) (See also 145.11(a)(11))	**§5.207(c)**(1) Reports. All reports required by permits and other information requested by the director, shall be signed by a person described in §5.203(a)(1)(B) of this subchapter, or by a duly authorized representative of that person. A person is a duly authorized representative only if:			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
193.	The authorization is made in writing by a person described in paragraph (a) of this section;	40 CFR 144.32(b)(1) (See also 145.11(a)(11))	**§5.207(c)(1)(A)**(1) Reports. All reports required by permits and other information requested by the director, shall be signed by a person described in §5.203(a)(1)(B) of this subchapter, or by a duly authorized representative of that person. A person is a duly authorized representative only if: (A) The authorization is made in writing by a person described in §5.203(a)(1)(B) of this subchapter;			
194.	The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and	40 CFR 144.32(b)(2) (See also 145.11(a)(11))	§5.207 (c)(1)(B) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility; and			
195.	The written authorization is submitted to the Director.	40 CFR 144.32(b)(3) (See also 145.11(a)(11))	§5.207 (c)(1)(C) The written authorization is submitted to the director.			
196.	Changes to authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.	40 CFR 144.32(c) (See also 145.11(a)(11))	§5.207 (c)(2) Changes to authorization. If an authorization under paragraph (1) of this subsection is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (1) of this subsection must be submitted to the director prior to or together with any reports, information, or applications to be signed by an authorized representative.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
197.	Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	40 CFR 144.32(d) (See also 145.11(a)(11))	**§5.207 (d) Certification**. All reports required by permits and other information requested by the director under this subchapter, shall be certified as follows: *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*			
40 CFR §144.33 Area permits.						
198.	The Director may issue a permit on an area basis, rather than for each well individually, provided that the permit is for injection wells:	40 CFR 144.33(a) (See also 145.11(a)(12))	No reference found	Note that area permits are not allowed for Class VI wells; area permit provisions are included in this crosswalk only to show that they are banned for Class VI.	The state regulations do not provide for area permits.	
199.	Used to inject other than hazardous waste; and	40 CFR §144.33(a)(4)	No reference found		The state regulations do not provide for area permits.	
200.	Other than Class VI wells.	40 CFR §144.33(a)(5)	No reference found		The state regulations do not provide for area permits.	
§ 144.35 Effect of a permit.						

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203	Except for Class II and III wells, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Part C of the SDWA. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in §§ 144.39 and 144.40. (a) Causes for modification. The following are causes for modification. For …. Class VI wells the following may be causes for revocation and reissuance as well as modification….. (1) Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit. (2) Information. The Director has received information. Permits other than for Class II and III wells may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. (3) New regulations. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued. Permits other than for Class I hazardous waste injection wells, Class II, Class III or Class VI may be modified during their terms for this cause only as follows: (4) Compliance schedules. The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy. See also [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.41" \l "c" \h] (minor modifications). (5) Basis for modification of Class VI permits. Additionally, for Class VI wells, whenever the Director determines that permit changes are necessary based on: (i) Area of review reevaluations under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "e_1" \h] of this chapter;	40 CFR 144.35(a) (See also 145.11(a)(14))	**§5.207(d) Modification, revocation and reissuance, or cancellation, [~~or suspension~~] of a geologic storage facility permit.** (1) Permit review. Permits are subject to review by the Commission. Any interested person (i.e., the storage operator, local governments having jurisdiction over land within the area of review, and any person who has suffered or will suffer actual injury or economic damage) may request that the Commission review permits issued under this subchapter for one of the reasons set forth below. All requests must be in writing and must contain facts or reasons supporting the request. If the Commission determines that the request may have merit or at the Commission's initiative for one or more of the reasons set forth below, the Commission may review the permit. (2) Action by the Commission. The director may modify, revoke and reissue, or cancel a geologic storage facility permit after notice and opportunity for hearing under any of the following circumstances. (A) **Causes for modification** or for revocation and reissuance. The following may be causes for revocation and reissuance as well as modification: (i) **Alterations.** There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance that justify the inclusion of permit conditions that are different or absent in the existing permit. (ii) **New information**. The director has received information that was not available at the time of permit issuance and would have justified the inclusion of different permit conditions at the time of issuance. These may include any increase greater than the permitted carbon dioxide storage volume, and/or changes in the chemical composition of the carbon dioxide stream, (iii) **New regulations**. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued. (iv) **Compliance schedules**. The director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or			

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	(ii) Any amendments to the testing and monitoring plan under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.90" \l "j" \h] of this chapter; (iii) Any amendments to injection well plugging plan under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.92" \l "c" \h] of this chapter; (iv) Any amendments to the post-injection site care and site closure plan under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.93" \l "a_3" \h] of this chapter; (v) Any amendments to the emergency and remedial response plan under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.94" \l "d" \h] of this chapter; or (vi) A review of monitoring and/or testing results conducted in accordance with permit requirements. (b) Causes for modification or revocation and reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit: (1) Cause exists for termination under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.40" \h], and the Director determines that modification or revocation and reissuance is appropriate. (2) The Director has received notification (as required in the permit, see [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.41" \l "d" \h]) of a proposed transfer of the permit. A permit also may be modified to reflect a transfer after the effective date of an automatic transfer ([HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.38" \l "b" \h]) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee. (3) A determination that the waste being injected is a hazardous waste as defined in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/261.3" \h] either because the definition has been		other events over which the permittee has little or no control and for which there is no reasonably available remedy. (v) Basis for permit modification. Whenever the director determines that permit changes are necessary based on: (I) Area of review reevaluations under §5.203(d) of this subchapter; (II) Any amendments to the testing and monitoring plan under §5.203(f) of this subchapter; (III) Any amendments to the injection well plugging plan under §5.203(k) of this subchapter; (IV) Any amendments to the post-injection site care and site closure plan under §5.203(m) of this subchapter; (V) Any amendments to the emergency and remedial response plan under §5.203(l) of this subchapter; or (VI) A review of monitoring and/or testing results conducted in accordance with permit requirements. (VII) Cause exists for termination under §5.202(d)(2)(B) of this subchapter, and the director determines that modification or revocation and reissuance is appropriate. (VIII) The director has received notification of a proposed transfer of the permit. (IX) A determination that the fluid being injected is a hazardous waste as defined in 40 CFR §261.3 either because the definition has been revised, or because a previous determination has been changed. (vi) If the director tentatively decides to modify or revoke and reissue a permit, the director shall prepare a draft permit incorporating the proposed changes. The director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of revoked and reissued permits, the director shall require the submission of a new application. (vii) In a permit modification, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the unmodified permit.		

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	revised, or because a previous determination has been changed. (c) Facility siting. Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.		When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding, the permittee shall comply with all conditions of the existing permit until a new final permit is reissued. (viii) Upon the consent of the permittee, the director may modify a permit to make the corrections or allowances for changes in the permit, without following the procedures of §5.2031, relating to draft permit and fact sheet, and §5.204, relating to notice of permit actions and public comment period, to: (I) correct typographical errors; (II) require more frequent monitoring or reporting by the permittee; (III) change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; (IV) allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the director; (V) change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the director, would not interfere with the operation of the facility or its ability to meet the permit conditions; (VI) change construction requirements approved by the director pursuant to §5.206, provided that any such alteration shall comply with the requirements of this subchapter; (VII) amend a plugging and abandonment plan which has been updated under §5.203(k); or (VIII) amend an injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			modifications merely clarify or correct the plan, as determined by the director.			
201.	The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.	40 CFR 144.35(b) (See also 145.11(a)(14))	**§5.206(n)(2)(E)** The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.			
202.	The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.	40 CFR 144.35(c) (See also 145.11(a)(14))	**§5.206(n)(2)(F)** The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.			

Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.36 Duration of permits.					
203. …….UIC permits for Class VI wells shall be issued for the operating life of the facility and the post-injection site care period. The Director shall review each issued Class … VI well UIC permit at least once every 5 years to determine whether it should be modified, revoked and reissued, terminated or a minor modification made as provided in §§144.39, 144.40, or 144.41.	40 CFR §144.36(a)	**§5.206(n) Other permit terms and conditions**. In any permit for a GS facility, the director must impose terms and conditions reasonably necessary to protect USDWs. Permits issued under this subchapter continue in effect until revoked, modified, or suspended by Commission. The operator must comply with each requirement set forth in this subchapter as a condition of the permit unless modified by the terms of the permit. **§5.207(a)(2)((D) Annual reports.** The operator must submit an annual report detailing: (iii) re-calculated area of review unless the operator submits a statement signed by an appropriate company official confirming that monitoring and operational data supports the current delineation of the AoR on file with the Commission; (vi) The operator must maintain and update required plans in accordance with the provisions of this subchapter. (I) Operators must submit an annual statement, signed by an appropriate company official, confirming that the operator has: (-a-) reviewed the monitoring and operational data that are relevant to a decision on whether to reevaluate the area of review and the monitoring and operational data that are relevant to a decision on whether to update an approved plan required by §5.203 or §5.206 of this title; and (-b-) determined whether any updates were warranted by material change in the monitoring and operational data or in the evaluation of the monitoring and operational data by the operator. (II) Operators must submit either the updated plan or a summary of the modifications for each plan for which an update the operator determined to be warranted pursuant to subclause (I) of this clause. The director may require submission of copies of any updated plans and/or additional information regarding whether or not updates of any particular plans are warranted.			
40 CFR §144.38 Transfer of permits.					

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204.	Transfers by modification. Except as provided in paragraph (b) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued (under § 144.39(b)(2)), or a minor modification made (under § 144.41(d)), to identify the new permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.	40 CFR 144.38(a) (See also 145.11(a)(16))	**§5.202(c) Permit transfer**. An operator may transfer its geologic storage facility permit to another operator if the requirements of this subsection are met. A new operator shall not assume operation of the geologic storage facility without a valid permit. (1) **Notice.** An applicant must submit written notice of an intended permit transfer to the director at least 45 days prior to the date the transfer of operations is proposed to take place, unless such action could trigger U. S. Securities and Exchange Commission fiduciary and insider trading restrictions and/or rules. (A) The applicant's notice to the director must contain: (i) the name and address of the person to whom the geologic storage facility will be sold, assigned, transferred, leased, conveyed, exchanged, or otherwise disposed; (ii) the name and location of the geologic storage facility and a legal description of the land upon which the storage facility is situated; (iii) the date that the sale, assignment, transfer, lease conveyance, exchange, or other disposition is proposed to become final; and (iv) the date that the transferring operator will relinquish possession as a result of the sale, assignment, transfer, lease conveyance, exchange, or other disposition. (B) The person acquiring a geologic storage facility, whether by purchase, transfer, assignment, lease, conveyance, exchange, or other disposition, must notify the director in writing of the acquisition as soon as it is reasonably possible but not later than five business days after the date that the acquisition of the geologic storage facility becomes final. The director shall not approve the transfer of a geologic storage facility permit until the new operator provides all of the following: (i) the name and address of the operator from which the geologic storage facility was acquired; (ii) the name and location of the geologic storage facility and a description of the land upon which the geologic storage facility is situated; (iii) the date that the acquisition became or will become final; (iv) the date that possession was or will be acquired; and (v) the financial assurance required by this subchapter.		The state regulation requires approval of a transfer of a permit, but does not specify that the permit be modified or revoked and reissued.	

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			(2) **Evidence of financial responsibility**. The operator acquiring the permit must provide the director with evidence of financial responsibility satisfactory to the director in accordance with §5.205 of this title (relating to Fees, Financial Responsibility, and Financial Assurance). **§5.202 (c)**(3) **Transfer of responsibility**. An operator remains responsible for the geologic storage facility until the director approves in writing the sale, assignment, transfer, lease, conveyance, exchange, or other disposition and the person acquiring the storage facility complies with all applicable requirements.			
205.	Automatic transfers. As an alternative to transfers under paragraph (a) of this section, any UIC permit for a well not injecting hazardous waste or injecting carbon dioxide for geologic sequestration may be automatically transferred to a new permittee if:	40 CFR §144.38(b)	**N/A**			

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.39 Modification or revocation and reissuance of permits.						
206.	When the Director receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit (see § 144.51 of this chapter), receives a request for modification or revocation and reissuance under §124.5, or conducts a review of the permit file) he or she may determine whether or not one or more of the causes listed in paragraphs (a) and (b) of this section for modification or revocation and reissuance or both exist. If cause exists, the Director may modify or revoke and reissue the permit accordingly, subject to the limitations of paragraph (c) of this section, and may request an updated application if necessary. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term. See §124.5(c)(2) of this chapter. If cause does not exist under this section or § 144.41 of this chapter, the Director shall not modify or revoke and reissue the permit. If a permit modification satisfies the criteria in §144.41 for ''minor modifications'' the permit may be modified without a draft permit or public review. Otherwise, a draft permit must be prepared and other procedures in part 124 must be followed.	40 CFR 144.39 (See also 145.11(a)(17))	**§5.202(d) Modification, cancellation, or suspension of a GS facility permit.** (1) General. The director may modify, suspend, or cancel a GS facility permit after notice and opportunity for hearing under any of the following circumstances: (A) There is a material change in conditions in the operation of the GS facility, or there are material deviations from the information originally furnished to the director. A change in conditions at a facility that does not affect the ability of the facility to operate without causing an unauthorized release of CO2 and/or formation fluids is not considered to be material; (B) USDWs are likely to be endangered as a result of the continued operation of the GS facility; (C) There are substantial violations of the terms and provisions of the permit or of applicable RRC orders or regulations; (D) The operator misrepresented material facts during the permit application or issuance process; or (E) Fluids are escaping or are likely to escape from the injection zone.		The state regulations do not reference reissuance of a permit. However, if a permit is terminated, a new application for a new permit must be submitted.	
207.	Causes for modification. The following are causes for modification. For …. Class VI wells the following may be causes for revocation and reissuance as well as modification…..	40 CFR 144.39(a) (See also 145.11(a)(17))	**§5.202(d)** (2) Action by the Commission. The director may modify, revoke and reissue, or terminate a geologic storage facility permit after notice and opportunity for hearing under any of the following circumstances.			
208.	*Alterations*. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.	40 CFR 144.39(a)(1) (See also 145.11(a)(17))	**§5.202(d)(2)(A)**(i) Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance that justify the inclusion of permit conditions that are different from or absent in the existing permit.			

Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
209. *Information.* The Director has received information. Permits other than for Class II and III wells may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. For UIC area permits (§ 144.33), this cause shall include any information indicating that cumulative effects on the environment are unacceptable.	40 CFR 144.39(a)(2) (See also 145.11(a)(17))	**§5.202(d)(2)(A)**(ii) New information. The director has received information that was not available at the time of permit issuance and would have justified the inclusion of different permit conditions at the time of issuance. This may include any increase greater than the permitted CO2 storage volume, and/or changes in the chemical composition of the CO2 stream;			
210. *New regulations*. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial decision after the permit was issued. Permits other than for Class I hazardous waste injection wells, Class II, Class III or Class VI wells may be modified during their permit terms for this cause only as follows:	40 CFR 144.39(a)(3) (See also 145.11(a)(17))	**§5.202 (d)(2)(A)(iii)** New regulations. The standards or regulations on which the permit was based have been changed by promulgation of new or amended standards or regulations or by judicial 4 decision after the permit was issued.			
211. *Compliance schedules.* The Director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy. See also §144.41(c) (minor modifications).	40 CFR 144.39(a)(4) (See also 145.11(a)(17))	**§5.202 (d)(2)(A)**(iv) Compliance schedules. The director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or materials shortage, or other events over which the permittee has little or no control and for which there is no reasonably available remedy.			
212. *Basis for modification of Class VI permits.* Additionally, for Class VI wells, whenever the Director determines that permit changes are necessary based on:	40 CFR §144.39(a)(5)	**§5.202(d)(2)(A)**(v) Basis for permit modification. The director shall modify the permit whenever the director determines that permit changes are necessary based on:			
213. Area of review reevaluations under §146.84(e)(1) of this chapter;	40 CFR §144.39(a)(5)(i)	**§5.202(d)(2)(A)**(v)(I) a re-evaluation under §5.203(d) of this title (relating to Application Requirements);			
214. Any amendments to the testing and monitoring plan under §146.90(j) of this chapter;	40 CFR §144.39(a)(5)(ii)	**§5.202(d)(2)(A)**(v)(II) any amendments to the testing and monitoring plan under §5.203(j) of this subchapter;			
215. Any amendments to the injection well plugging plan under §146.92(c) of this chapter;	40 CFR §144.39(a)(5)(iii)	**§5.202(d)(2)(A)**(v)(III) any amendments to the injection well plugging plan under §5.203(k) of this title;			
216. Any amendments to the post-injection site care and site closure plan under §146.93(a)(3) of this chapter;	40 CFR §144.39(a)(5)(iv)	**§5.202(d)(2)(A)**(v)(IV) any amendments to the post-injection site care and site closure plan under §5.203(m) of this title;			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
217.	Any amendments to the emergency and remedial response plan under §146.94(d) of this chapter; or	40 CFR §144.39(a)(5)(v)	**§5.202(d)(2)(A)(v)(V)** any amendments to the emergency and remedial response plan under §5.203(l) of this title;			
218.	A review of monitoring and/or testing results conducted in accordance with permit requirements.	40 CFR §144.39(a)(5)(vi)	**§5.202(d)(2)(A)(v)**(VI) a review of monitoring and/or testing results conducted in accordance with permit requirements;			
219.	Causes for modification or revocation and reissuance. The following are causes to modify or, alternatively, revoke and reissue a permit:	40 CFR 144.39(b) (See also 145.11(a)(17))	**§5.202(d)(2)(A)(v)** (VII) cause exists for termination under subparagraph (B) of this paragraph, and the director determines that modification or revocation and reissuance is appropriate; (VIII) the director has received notification of a proposed transfer of the permit; or (IX) a determination that the fluid being injected is a hazardous waste as defined in 40 CFR §261.3 either because the definition has been revised, or because a previous determination has been changed. (vi) If the director tentatively decides to modify or revoke and reissue a permit, the director shall prepare a draft permit incorporating the proposed changes. The director may request additional information and, in the case of a modified permit, may require the submission of an updated application. In the case of revoked and reissued permits, the director shall require the submission of a new application. (vii) In a permit modification, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the existing permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding,		See above for causes to modify a permit. See below for discussion of causes to revoke and reissue or terminate a permit.	
220.	Cause exists for termination under §144.40, and the Director determines that modification or revocation and reissuance is appropriate.	40 CFR 144.39(b)(1) (See also 145.11(a)(17))	**§5.202(d)(2)(A)(v)**(VII) cause exists for termination under subparagraph (B) of this paragraph, and the director determines that modification or revocation and reissuance is appropriate;		The state regulation identifies broad reasons for revoking or reissuing a permit.	

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
221.	The Director has received notification (as required in the permit, see § 144.41(d)) of a proposed transfer of the permit. A permit also may be modified to reflect a transfer after the effective date of an automatic transfer (§ 144.38(b)) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee.	40 CFR 144.39(b)(2) (See also 145.11(a)(17))	**§5.202(d)(2)(A)(v)**(VIII) the director has received notification of a proposed transfer of the permit; or		The state regulations do not allow for automatic transfers.	
222.	A determination that the waste being injected is a hazardous waste as defined in § 261.3 either because the definition has been revised, or because a previous determination has been changed.	40 CFR 144.39(b)(3) (See also 145.11(a)(17))	**§5.202(d)(2)(A)(v)**(IX) a determination that the fluid being injected is a hazardous waste as defined in 40 CFR §261.3 either because the definition has been revised, or because a previous determination has been changed.			
223.	Facility siting. Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.	40 CFR 144.39(c) (See also 145.11(a)(17))	**§5.202(d)(3)** Facility siting. Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.			
40 CFR 144.40 Termination of permits.						
224.	The Director may terminate a permit during its term, or deny a permit renewal application for the following causes:	40 CFR 144.40(a) (See also 145.11(a)(18))	**§5.202(d)(2)(B)** Termination of permits. (i) The following may be causes to terminate a permit during its term, or deny a permit renewal application:			
225.	Noncompliance by the permittee with any condition of the permit;	40 CFR 144.40(a)(1) (See also 145.11(a)(18))	**§5.202(d)(2)(B)(i)(I)** the permittee's failure to comply with any condition of the permit or applicable Commission orders or regulations;			
226.	The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or	40 CFR 144.40(a)(2) (See also 145.11(a)(18))	**§5.202(d)(2)(B)(i)(II)**(II) the permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;			
227.	A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;	40 CFR 144.40(a)(3) (See also 145.11(a)(18))	**§5.202(d)(2)(B)(i)**(III) fluids are escaping or are likely to escape from the injection zone; (IV) USDWs are likely to be endangered as a result of the continued operation of the geologic storage facility; or (V) a determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
228.	The Director shall follow the applicable procedures in part 124 in terminating any permit under this section.	40 CFR 144.40(b) (See also 145.11(a)(18))	**§5.202(d)(2)(B)**(ii) The director shall follow the applicable procedures in subsection (e) of this section, and §5.204 of this title, in terminating any permit under this section. (iii) If the director tentatively decides to terminate a permit under this subchapter, where the permittee objects, the director shall issue a notice of intent to terminate. A notice of intent to terminate is a type of draft permit. (vii) In a permit modification, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the existing permit. When a permit is revoked and reissued under this section, the entire permit is reopened just as if the permit had expired and was being reissued. During any revocation and reissuance proceeding,			

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Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.41 Minor modifications of permits.					

229.	Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in §144.39. Minor modifications may only:	40 CFR 144.41	**§5.202(d)(2)(A)(viii)** Upon the consent of the permittee, the director may modify a permit to make the corrections or allowances for changes in the permit, without following the procedures of subsection (e) of this section, and §5.204 of this title (relating to Notice of Permit Actions and Public Comment Period), to: (I) correct typographical errors; (II) require more frequent monitoring or reporting by 7 the permittee; (III) change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; (IV) allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the director; (V) change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the director, would not interfere with the operation of the facility or its ability to meet the permit conditions; (VI) change construction requirements approved by the director pursuant to §5.206 of this title (relating to Permit Standards), provided that any such alteration shall comply with the requirements of this subchapter; (VII) amend a plugging and abandonment plan which has been updated under §5.203(k) of this title; or (VIII) amend an injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the director. the permittee shall comply with all conditions of the existing permit until a new final permit is reissued. (viii) Upon the consent of the permittee, the director may modify a permit to make the corrections or allowances for changes in the permit, without following the procedures of §5.2031, relating to draft permit and fact sheet, and §5.204, relating to notice of permit actions and public comment period, to:			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			(I) correct typographical errors; (II) require more frequent monitoring or reporting by the permittee; (III) change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; (IV) allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the director; (V) change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the director, would not interfere with the operation of the facility or its ability to meet the permit conditions; (VI) change construction requirements approved by the director pursuant to §5.206, provided that any such alteration shall comply with the requirements of this subchapter; (VII) amend a plugging and abandonment plan which has been updated under §5.203(k); or (VIII) amend an injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the director.			
230.	Correct typographical errors;	40 CFR 144.41(a)	**§5.202(d)(2)(A)(viii)**(I) correct typographical errors;			
231.	Require more frequent monitoring or reporting by the permittee;	40 CFR 144.41(b)	**§5.202(d)(2)(A)(viii)**(II) require more frequent monitoring or reporting by the permittee;			
232.	Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; or	40 CFR 144.41(c)	**§5.202(d)(2)(A)(viii)**(III) change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
233.	Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director.	40 CFR 144.41(d)	**§5.202(d)(2)(A)(viii)**(IV) allow for a change in ownership or operational control of a facility where the director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the director;			
234.	Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.	40 CFR 144.41(e)	**§5.202(d)(2)(A)(viii)**(V) change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the director, would not interfere with the operation of the facility or its ability to meet the permit conditions;			
235.	Change construction requirements approved by the Director pursuant to § 144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of this part and part 146.	40 CFR 144.41(f)	**§5.202(d)(2)(A)(viii)**(VI) change construction requirements approved by the director pursuant to §5.206 of this title (relating to Permit Standards), provided that any such alteration shall comply with the requirements of this subchapter;			
236.	Amend a Class VI injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the Director.	40 CFR §144.41(h)	**§5.202(d)(2)(A)(viii)**(VII) amend a plugging and abandonment plan which has been updated under §5.203(k) of this title; or (VIII) amend an injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the director.			

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
SUBPART E--PERMIT CONDITIONS						
40 CFR §144.51 Conditions applicable to all permits.						
237.	The following conditions apply to all UIC permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit.	40 CFR 144.51 (See also 145.11(a)(19))	**§5.206. Permit Standards.** (a) Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this chapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.			
238.	Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit under §144.34.	40 CFR 144.51(a) (See also 145.11(a)(19))	**§5.206(**o) Other permit terms and conditions. (2) Other conditions. The following conditions shall also be included in any permit issued under this subchapter. (A) Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. However, the permittee need not comply with the provisions of the permit to the extent and for the duration such noncompliance is authorized in an emergency permit under 40 CFR §144.34.			
239.	Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.	40 CFR 144.51(b) (See also 145.11(a)(19))	**§5.206(o) Other permit terms and conditions**. In any permit for a GS facility, the director must impose terms and conditions reasonably necessary to protect USDWs. Permits issued under this subchapter continue in effect until revoked, modified, or suspended by RRC. The operator must comply with each requirement set forth in this subchapter as a condition of the permit unless modified by the terms of the permit.		Class VI permits are issued for the life of the project and PISC	
240.	Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.	40 CFR 144.51(c) (See also 145.11(a)(19))	**§5.206(o)(2)(B)** Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.			
241.	Duty to mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.	40 CFR 144.51(d) (See also 145.11(a)(19))	**§5.206(o)(2)(C)**Duty to mitigate. The permittee shall take all reasonable steps to minimize or 24 correct any adverse impact on the environment resulting from noncompliance with this permit.			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
242.	Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.	40 CFR 144.51(e) (See also 145.11(a)(19))	**§5.206 (o)(2)(D)** Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.			
243.	Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.	40 CFR 144.51(f) (See also 145.11(a)(19))	No reference found			
244.	Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.	40 CFR 144.51(g) (See also 145.11(a)(19))	**§5.205 (o)(2)(E)** Property rights not conveyed. The issuance of a permit does not convey property rights of any sort, or any exclusive privilege.			
245.	Duty to provide information. The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.	40 CFR 144.51(h) (See also 145.11(a)(19))	**§5.205 (o)(2)(H)** Duty to provide information. The operator shall furnish to the Commission, within a time specified by the Commission, any information that the Commission may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. The operator shall also furnish to the Commission, upon request, copies of records required to be kept under the conditions of the permit.			
246.	Inspection and entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:	40 CFR 144.51(i) (See also 145.11(a)(19))	**§5.205 (o)(2)(I)** Inspection and entry. The operator shall allow any member or employee of the Commission, on proper identification, to:			
247.	Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;	40 CFR 144.51(i)(1) (See also 145.11(a)(19))	**§5.205 (o)(2)(I)(i)** enter upon the premises where a regulated activity is conducted or where records are kept under the conditions of the permit; **See also Texas Water Code, Chapter 27,** **§27.071.** POWER TO ENTER PROPERTY. **§27.072.** POWER TO EXAMINE RECORDS.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
248.	Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;	40 CFR 144.51(i)(2) (See also 145.11(a)(19))	**§5.205 (o)(2)(I)(ii)** have access to and copy, during reasonable working hours, any records required to be kept under the conditions of the permit; **See also Texas Water Code, Chapter 27,** **§27.071.** POWER TO ENTER PROPERTY. **§27.072.** POWER TO EXAMINE RECORDS.			
249.	Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and	40 CFR 144.51(i)(3) (See also 145.11(a)(19))	**§5.205 (o)(2)(I)(iii)** inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit; and **See also Texas Water Code, Chapter 27,** **§27.071.** POWER TO ENTER PROPERTY. **§27.072.** POWER TO EXAMINE RECORDS.			
250.	Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.	40 CFR 144.51(i)(4) (See also 145.11(a)(19))	**§5.205 (o)(2)(I)(iv)** sample or monitor any substance or parameter for the purpose of assuring compliance with the permit or as otherwise authorized by the Texas Water Code, §27.071, or the Texas Natural Resources Code, §91.1012. **See also Texas Water Code, Chapter 27,** **§27.071.** POWER TO ENTER PROPERTY. **§27.072.** POWER TO EXAMINE RECORDS.			
251.	Monitoring and records. (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.	40 CFR 144.51(j)(1) (See also 145.11(a)(19))	**§5.206(e) Monitoring, sampling, and testing requirements.** (1) The operator of an anthropogenic CO2 injection well must maintain and comply with the approved monitoring, sampling, and testing plan to verify that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone. (2) All permits shall include the following requirements: (A) the proper use, maintenance, and installation of monitoring equipment or methods; (B) monitoring including type, intervals, and frequency sufficient to yield data that are representative of the monitored activity including, when required, continuous monitoring; (C) reporting no less frequently than as specified in §5.207 of this title (relating to Reporting and Record-Keeping).			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
252.	The permittee shall retain records of all monitoring information, including the following:	40 CFR 144.51(j)(2) (See also 145.11(a)(19))	§5.206(m) Retention of records. The operator must retain for 10 years following storage facility closure records collected during the post-injection storage facility care period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the Commission.		All records are required to be submitted to the Commission. Such records are retained.	
253.	Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and	40 CFR 144.51(j)(2)(i) (See also 145.11(a)(19))			All records are required to be submitted to the Commission. Such records are retained.	
254.	The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under §144.52(a)(6), or under part 146 subpart G as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.	40 CFR 14.51(j)(2)(ii) (See also 145.11(a)(19))	**§5.206(k)**(6) Storage facility closure report. Once the director has authorized storage facility closure, the operator must submit a storage facility closure report within 90 days that must thereafter be retained by the Commission in Austin. The report must include the following information: (C) records reflecting the nature, composition and volume of the CO2 stream.		All records are required to be submitted to the Commission. Such records are retained.	

255.	Records of monitoring information shall include:	40 CFR 144.51(j)(3) (See also 145.11(a)(19))	**§5.207 Reporting and Record-Keeping** (a) The operator of a GS facility must provide, at a minimum, the following reports to the director and retain the following information. (1) Test records. The operator must file a complete record of all tests in duplicate with the district office within 30 days after the testing. In conducting and evaluating the tests enumerated in this subchapter or others to be allowed by the director, the operator and the director must apply methods and standards generally accepted in the industry. When the operator reports the results of mechanical integrity tests to the director, the operator must include a description of the test(s) and the method(s) used. In making this evaluation, the director must review monitoring and other test data submitted since the previous evaluation. (2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days. (B) Report within 30 days. The operator must report: (i) the results of periodic tests for mechanical integrity; (ii) the results of any other test of the injection well conducted by the operator if required by the director; and (iii) a description of any well workover. (C) Semi-annual report. The operator must report: (i) a summary of well head pressure monitoring; (ii) changes to the physical, chemical, and other relevant characteristics of the CO2 stream from the proposed operating data; (iii) monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure;			

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			(iv) a description of any event that significantly exceeds operating parameters for annulus pressure or injection pressure as specified in the permit; (v) a description of any event that triggers a shutdown device and the response taken; and (vi) the results of monitoring prescribed under §5.206(d) (Permit Standards). (D) Annual reports. The operator must submit an annual report detailing: (i) corrective action performed; (ii) new wells installed and the type, location, number, and information required in 5.203(e) of this title (relating to Application Requirements); (iii) re-calculated area of review unless the operator submits a statement signed by an appropriate company official confirming that monitoring and operational data supports the current delineation of the AoR on file with RRC; (iv) the updated area for which the operator has a good faith claim to the necessary and sufficient property rights to operate the GS facility; (v) tons of CO2 injected; and (vi) The operator must maintain and update required plans in accordance with the provisions of this subchapter. (I) Operators must submit an annual statement, signed by an appropriate company official, confirming that the operator has: (-a-) reviewed the monitoring and operational data that are relevant to a decision on whether to reevaluate the area of review and the monitoring and operational data that are relevant to a decision on whether to update an approved plan required by §5.203 or §5.206 of this title; and (-b-) determined whether any updates were warranted by material change in the monitoring and operational data or in the evaluation of the monitoring and operational data by the operator. (II) Operators must submit either the updated plan or a summary of the modifications for each plan for which an update the operator determined to be warranted pursuant to subclause (I) of this clause. The director may			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			require submission of copies of any updated plans and/or additional information regarding whether or not updates of any particular plans are warranted. (III) The director may require the revision of any required plan whenever the director determines that such a revision is necessary to comply with the requirements of this title. (vii) other information as required by the permit.			
256.	The date, exact place, and time of sampling or measurements;	40 CFR 144.51(j)(3)(i) (See also 145.11(a)(19))	**§5.203(f)**			
257.	The individual(s) who performed the sampling or measurements;	40 CFR 144.51(j)(3)(ii) (See also 145.11(a)(19))	**§5.203(f)**			
258.	The date(s) analyses were performed;	40 CFR 144.51(j)(3)(iii) (See also 145.11(a)(19))	**§5.203(f)**			
259.	The individual(s) who performed the analyses;	40 CFR 144.51(j)(3)(iv) (See also 145.11(a)(19))	**§5.203(f)**			
260.	The analytical techniques or methods used; and	40 CFR 144.51(j)(3)(v) (See also 145.11(a)(19))	**§5.203(f)**			
261.	The results of such analyses.	40 CFR 144.51(j)(3)(vi) (See also 145.11(a)(19))	**§5.203(f)**			

262.	Owners or operators of Class VI wells shall retain records as specified in subpart H of part 146, including §§146.84(g), 146.91(f), 146.92(d), 146.93(f), and 146.93(h) of this chapter. 146.84(g) All modeling inputs and data used to support area of review reevaluations under paragraph (e) of this section shall be retained for 10 years. (f) Records shall be retained by owner or operator as follows: (1) All data collected under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.82" \h] for Class VI permit applications shall be retained throughout the life of the geologic sequestration project and for 10 years following site closure. (2) Data on the nature and composition of all injected fluids collected pursuant to [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.90" \l "a" \h] shall be retained until 10 years after site closure. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period. (3) Monitoring data collected pursuant to [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.90" \l "b" \h] through (i) shall be retained for 10 years after it is collected. (4) Well plugging reports, post-injection site care data, including, if appropriate, data and information used to develop the demonstration of the alternative post-injection site care timeframe, and the site closure report collected pursuant to requirements at [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.93" \l "f" \h] shall be retained for 10 years following site closure. (5) The Director has authority to require the owner or operator to retain any records required in this subpart for longer than 10 years after site closure. 146.92(d) Plugging report. Within 60 days after plugging, the owner or operator must submit, pursuant to [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.91" \l "e"], a plugging report to the Director.	40 CFR §144.51(j)(4)	**§5.206(l) Retention of records**. The operator must retain for 5 years following storage facility closure records collected during the post-injection storage facility care period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of RRC. **§3.14(b)** Commencement of plugging operations, extensions, and testing. (1) The operator shall complete and file in the district office a duly verified plugging record, in duplicate, on the appropriate form within 30 days after plugging operations are completed. (FORM W-3, Plugging Report. Includes certification: I have knowledge that the cementing operations, as reflected by the information found on this form, were performed as indicated by such information. CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge. A cementing report made by the party cementing the well shall be attached to, or made a part of, the plugging report. If the well the operator is plugging is a dry hole, an electric log status report shall be filed with the plugging record. FORM W-15, Cementing Report CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only. Name and title of cementer's representative Cementing Company Signature Address City, State, Zip Code Tel: Area Code Number Date: mo. day yr. OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
	The report must be certified as accurate by the owner or operator and by the person who performed the plugging operation (if other than the owner or operator.) The owner or operator shall retain the well plugging report for 10 years following site closure. 146.93(f) The owner or operator must submit a site closure report to the Director within 90 days of site closure, which must thereafter be retained at a location designated by the Director for 10 years. The report must include: (1) Documentation of appropriate injection and monitoring well plugging as specified in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.92" \h] and paragraph (e) of this section. The owner or operator must provide a copy of a survey plat which has been submitted to the local zoning authority designated by the Director. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to the Regional Administrator of the appropriate EPA Regional Office; (2) Documentation of appropriate notification and information to such State authorities that have authority over drilling activities to enable such State authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zone(s); and (3) Records reflecting the nature, composition, and volume of the CO2 stream. 146.93(h) The owner or operator must retain for 10 years following site closure, records collected during the post-injection site care post-injection site care period. The owner or operator must deliver the records to the Director at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Director for that purpose.		Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
263.	Signatory requirement. All applications, reports, or information submitted to the Administrator shall be signed and certified. (See §144.32.)	40 CFR 144.51(k) (See also 145.11(a)(19))	**§5.203(a)(1)(B)** Signatories to permit applications. An applicant must ensure that the application is executed by a party having knowledge of the facts entered on the form and included in the required attachments. All permit applications shall be signed as specified in this subparagraph: …. (C) Certification. Any person signing a permit application or permit amendment application shall make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." **§5.207(d) Certification.** All reports required by permits and other information requested by the director under this subchapter, shall be certified as follows: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
264.	Reporting requirements. (1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.	40 CFR 144.51(l)(1) (See also 145.11(a)(19))	§5.207(a)(2) (A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days.		Any planned changes would be a violation of the permit which includes approval of the various plans (construction, testing, monitoring, etc.) Changes that do not impact operation, monitoring, and testing would be beyond the scope of the Class VI regulations.	
265.	Anticipated noncompliance.The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.	40 CFR 144.51(l)(2) (See also 145.11(a)(19))			Any planned changes would be a violation of the permit which includes approval of the various plans (construction, testing, monitoring, etc.) Any planned changes would be a violation of the permit which includes approval of the various plans (construction, testing, monitoring, etc.) Changes that do not impact operation, monitoring, and testing would be beyond the scope of the Class VI regulations.	
266.	Transfers. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act. (See §144.38; in some cases, modification or revocation and reissuance is mandatory.)	40 CFR 144.51(l)(3) (See also 145.11(a)(19))	**§5.202(c) Permit transfer**. An operator may transfer its geologic storage facility permit to another operator if the requirements of this subsection are met. A new operator shall not assume operation of the geologic storage facility without a valid permit.			
267.	Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.	40 CFR 144.51(l)(4) (See also 145.11(a)(19))	**§5.207(a)(2)**			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
268.	Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.	40 CFR 144.51(l)(5) (See also 145.11(a)(19))	§5.206(o)(2)(J) Schedule of compliance: The permit may, when appropriate, specify a schedule of compliance leading to compliance with all provisions of this subchapter and Chapter 3 of this title. (i) Any schedule of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit. (ii) If the schedule of compliance is for a duration of more than one year from the date of permit issuance, then interim requirements and completion dates (not to exceed one year) must be incorporated into the compliance schedule and permit. (iii) Progress reports must be submitted no later than 30 days following each interim date and the final date of compliance.			

269.	Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment, including:	40 CFR 144.51(l)(6) (See also 145.11(a)(19))	**§5.206(c)(2)(F)(ii)** If an automatic shutdown is triggered or a loss of mechanical integrity is discovered, the operator must immediately investigate and identify as expeditiously as possible the cause. If, upon investigation, the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking MI, the operator must: (I) immediately cease injection; (II) take all steps reasonably necessary to determine whether there may have been a release of the injected CO2 stream into any unauthorized zone; (III) notify the director as soon as practicable, but within 24 hours; (IV) restore and demonstrate MI to the satisfaction of the director prior to resuming injection; and (V) notify the director when injection can be expected to resume. (g)(3)(C) (3) Action. If an operator obtains evidence that the injected CO2 stream and associated pressure front may cause an endangerment to underground sources of drinking water, the operator must: (A) immediately cease injection; (B) take all steps reasonably necessary to identify and characterize any release; (C) notify the director as soon as practicable but within at least 24 hours; and (D) implement the approved emergency and remedial response plan. **§5.207 Reporting and Record-Keeping** (a) The operator of a GS facility must provide, at a minimum, the following reports to the director and retain the following information. (2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
270.	Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or	40 CFR 144.51(l)(6)(i) (See also 145.11(a)(19))	§5.206(h)(3) Action. If an operator obtains evidence that the injected CO2 stream and associated pressure front may cause an endangerment to USDWs, the operator must: (A) immediately cease injection; (B) take all steps reasonably necessary to identify and characterize any release; (C) notify the director as soon as practicable but within at least 24 hours; and (D) implement the approved emergency and remedial response plan.			
271.	Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.	40 CFR 144.51(l)(6)(ii) (See also 145.11(a)(19))	**§5.207 Reporting and Record-Keeping** (a) The operator of a geologic storage facility must provide, at a minimum, the following reports to the director and retain the following information. (2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days.			
272.	Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (l) (4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (l)(6) of this section.	40 CFR 144.51(l)(7) (See also 145.11(a)(19))	**§5.206(m)(2)(A)**			
273.	Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.	40 CFR 144.51(l)(8) (See also 145.11(a)(19))	**§5.203(p)** Application Requirements (Other Information).			
274.	Requirements prior to commencing injection. … a new injection well may not commence injection until construction is complete, and	40 CFR 144.51(m) (See also 145.11(a)(19))	**§5.202(a)(2)** A person may not begin injection until: (A) construction of the well is complete;			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
275.	The permittee has submitted notice of completion of construction to the Director; and	40 CFR 144.51(m)(1) (See also 145.11(a)(19))	**§5.202(a)(2)** A person may not begin injection until: (B) the operator has submitted to the director notice of completion of construction;			
276.	The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or	40 CFR 144.51(m)(2)(i) (See also 145.11(a)(19))	**§5.202(a)(2)** A person may not begin injection until: (C) the Commission has inspected or otherwise reviewed the injection well and finds it is in compliance with the conditions of the permit; and (D) the director has issued a permit to operate the injection well.			
277.	The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (m)(1) of this section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.	40 CFR 144.51(m)(2)(ii) (See also 145.11(a)(19))	No reference found			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
278.	The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well…..	40 CFR 144.51(n) (See also 145.11(a)(19))	**(k) Well plugging plan**. The applicant must submit a well plugging plan for all injection wells and monitoring wells that penetrate the base of usable quality water that includes: (1) a proposal for plugging all monitoring wells that penetrate the base of usable quality water and all injection wells upon abandonment in accordance with §3.14 of this title (relating to Plugging); (2) proposals for activities to be undertaken prior to plugging an injection well, specifically: (A) flushing each injection well with a buffer fluid; (B) performing tests or measures to determine bottomhole reservoir pressure; (C) performing final tests to assess mechanical integrity; and (D) ensuring that the material to be used in plugging must be compatible with the CO2 stream and the formation fluids; (3) a proposal for giving notice of intent to plug monitoring wells that penetrate the base of usable quality water and all injection wells. The applicant's plan must ensure that: (A) the operator notifies the director at least 60 days before plugging a well. At this time, if any changes have been made to the original well plugging plan, the operator must also provide a revised well plugging plan. At the discretion of the director, an operator may be allowed to proceed with well plugging on a shorter notice period; and (B) the operator will file a notice of intention to plug and abandon (Form W-3A) a well with the appropriate Commission district office and the division in Austin at least five days prior to the beginning of plugging operations;			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
279.	A …. Class V permit may include conditions which meet the applicable requirements of §146.10 of this chapter to ensure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of §146.10 of this chapter, the Director shall incorporate the plan into the permit as a permit condition. Where the Director's review of an application indicates that the permittee's plan is inadequate, the Director may require the applicant to revise the plan, prescribe conditions meeting the requirements of this paragraph, or deny the permit. A Class VI permit shall include conditions which meet the requirements set forth in §146.92 of this chapter. Where the plan meets the requirements of §146.92 of this chapter, the Director shall incorporate it into the permit as a permit condition. For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment.	40 CFR §144.51(o)	**§5.203(k) Well plugging plan**. **§5.206(j) Well plugging.** The operator of a geologic storage facility must maintain and comply with the approved well plugging plan required by §5.203(k) of this title.			
280.	*Duty to establish and maintain mechanical integrity.* The owner or operator of a Class I, II, III or VI well permitted under this part shall establish mechanical integrity prior to commencing injection or on a schedule determined by the Director. Thereafter …. the owner or operator of Class VI wells must maintain mechanical integrity as defined in §146.89 of this chapter.	40 CFR §144.51(q)(1)	**§5.206(f) Mechanical integrity.** (1) The operator must maintain and comply with the approved mechanical integrity testing plan submitted in accordance with §5.203(j) of this title. (2) Other than during periods of well workover in which the sealed tubing-casing annulus is of necessity disassembled for maintenance or corrective procedures, the operator must maintain mechanical integrity of the injection well at all times. (3) The operator must either repair and successfully retest or plug a well that fails a mechanical integrity test. (4) The director may require additional or alternative tests if the results presented by the operator do not demonstrate to the director that there is no significant leak in the casing, tubing, or packer or movement of fluid into or between formations containing USDWs resulting from the injection activity.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
281.	When the Director determines that a ….Class VI well lacks mechanical integrity pursuant to §§146.8 or 146.89 of this chapter for Class VI of this chapter, he/she shall give written notice of his/her determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of §146.10 of this chapter or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator has demonstrated mechanical integrity pursuant to §146.8 of this chapter.	40 CFR 144.51(q)(2) (See also 145.11(a)(19))	**§5.206(h)(3) Action.** If an operator obtains evidence that the injected CO2 stream and associated pressure front may cause an endangerment to USDWs, the operator must: (A) immediately cease injection; (B) take all steps reasonably necessary to identify and characterize any release; (C) notify the director as soon as practicable but within at least 24 hours; and (D) implement the approved emergency and remedial response plan. (4) Resumption of injection. The director may allow the operator to resume injection prior to remediation if the operator demonstrates that the injection operation will not endanger USDW.			

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §144.52 Establishing permit conditions.						
282.	In addition to conditions required in §144.51, the Director shall establish conditions, as required on a case-by-case basis under §144.36 (duration of permits), §144.53(a) (schedules of compliance), §144.54 (monitoring)… Permits for owners or operators of Class VI injection wells shall include conditions meeting the requirements of subpart H of part 146.	40 CFR §144.52(a)	**§5.206(o) Other permit terms and conditions**. In any permit for a geologic storage facility, the director must impose terms and conditions reasonably necessary to protect USDWs. Permits issued under this subchapter continue in effect until revoked, modified, or suspended by the Commission. The operator must comply with each requirement set forth in this subchapter as a condition of the permit unless modified by the terms of the permit.			
283.	Construction requirements as set forth in part 146. Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. No construction may commence until a permit has been issued containing construction requirements (see §144.11). New wells shall be in compliance with these requirements prior to commencing injection operations. Changes in construction plans during construction may be approved by the Administrator as minor modifications (§144.41). No such changes may be physically incorporated into construction of the well prior to approval of the modification by the Director.	40 CFR 144.52(a)(1) (See also 145.11(a)(20))	§5.202. Permit Required, and Draft Permit and Fact Sheet. (a) Permit required. (1) A person shall not begin drilling or operating an anthropogenic CO2 injection well for geologic storage or constructing or operating a geologic storage facility regulated under this subchapter without first obtaining the necessary permits from the Commission. Following receipt of a geologic storage facility permit issued under this subchapter, the storage operator shall obtain a permit to drill, deepen, or convert a well for storage purposes in accordance with §3.5 of this title (relating to Application to Drill, Deepen, Reenter, or Plug Back). (2) A person may not begin injection until: (A) construction of the well is complete; (B) the operator has submitted to the director notice of completion of construction; (C) the Commission has inspected or otherwise reviewed the injection well and finds it is in compliance with the conditions of the permit; and (D) the director has issued a permit to operate the injection well. **§5.203(e) Injection well construction.** **§5.203(f) Plan for logging, sampling, and testing of injection wells after permitting but before injection.** **§5.203(g) Compatibility determination.** **§5.203(h) Mechanical integrity testing.**			
284.	Corrective action as set forth in §§144.55, 146.7, and 146.84 of this chapter.	40 CFR §144.52(a)(2)	**§5.206(g) Area of Review and Corrective Action**			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
285.	Operation requirements as set forth in 40 CFR part 146; the permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements.	40 CFR 144.52(a)(3) (See also 145.11(a)(20))	**§5.206(d)** Operating a geologic storage facility.			
286.	Monitoring and reporting requirements as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data.	40 CFR 144.52(a)(5) (See also 145.11(a)(20))	**§5.206(e)** Monitoring, sampling, and testing requirements. (1) The operator of an anthropogenic CO2 injection well must maintain and comply with the approved monitoring, sampling, and testing plan to verify that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone. (2) All permits shall include the following requirements: (A) the proper use, maintenance, and installation of monitoring equipment or methods; (B) monitoring including type, intervals, and frequency sufficient to yield data that are representative of the monitored activity including, when required, continuous monitoring; (C) reporting no less frequently than as specified in §5.207 of this title (relating to Reporting and Record-Keeping). (3) The director may require additional monitoring as necessary to support, upgrade, and improve computational modeling of the AOR evaluation and to determine compliance with the requirement that the injection activity not allow movement of fluid that would endanger USDWs.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
287.	Financial responsibility. (i) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:	(See also 145.11(a)(20))	**§5.203(n) Fees, financial responsibility, and financial assurance.** The applicant must pay the fees, demonstrate that it has met the financial responsibility requirements, and provide the Commission with financial assurance as required under §5.205 of this title (relating to Fees, Financial Responsibility, and Financial Assurance). (1) The applicant must demonstrate financial responsibility and resources for corrective action, injection well plugging, post-injection storage facility care and storage facility closure, and emergency and remedial response until the director has provided to the operator a written verification that the director has determined that the facility has reached the end of the post-injection storage facility care period.			
288.	The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to §§144.51(o), 146.10, and 146.92 of this chapter, and submitted a plugging and abandonment report pursuant to §144.51(p); or	40 CFR §144.52(a)(7)(i)(A)	**§5.203(n) Fees, financial responsibility, and financial assurance.**			
289.	The well has been converted in compliance with the requirements of §144.51(n); or	40 CFR 144.52(a)(7)(i)(B) (See also 145.11(a)(20))	No reference found			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
290.	The transferor of a permit has received notice from the Director that the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.	40 CFR 144.52(a)(7)(i)(C) (See also 145.11(a)(20))	**§5.202(c) Permit transfer.** An operator may transfer its geologic storage facility permit to another operator if the requirements of this subsection are met. A new operator shall not assume operation of the geologic storage facility without a valid permit. (B) The person acquiring a geologic storage facility, whether by purchase, transfer, assignment, lease, conveyance, exchange, or other disposition, must notify the director in writing of the acquisition as soon as it is reasonably possible but not later than five business days after the date that the acquisition of the geologic storage facility becomes final. The director shall not approve the transfer of a geologic storage facility permit until the new operator provides all of the following: (v) the financial assurance required by this subchapter. (2) Evidence of financial responsibility. The operator acquiring the permit must provide the director with evidence of financial responsibility satisfactory to the director in accordance with §5.205 of this title (relating to Fees, Financial Responsibility, and Financial Assurance). (3) Transfer of responsibility. An operator remains responsible for the geologic storage facility until the director approves in writing the sale, assignment, transfer, lease, conveyance, exchange, or other disposition and the person acquiring the storage facility complies with all applicable requirements.			

291.	The permittee shall show evidence of such financial responsibility to the Director by the submission of a surety bond, or other adequate assurance, such as a financial statement or other materials acceptable to the Director. For Class VI wells, the permittee shall show evidence of such financial responsibility to the Director by the submission of a qualifying instrument (see §146.85(a) of this chapter), such as a financial statement or other materials acceptable to the Director. The owner or operator of a Class VI well must comply with the financial responsibility requirements set forth in §146.85 of this chapter.	40 CFR §144.52(a)(7)(ii) 40 CFR §146.85	**§5.203 Application Requirements** **(n) Fees, financial responsibility, and financial assurance.** The applicant must pay the fees, demonstrate that it has met the financial responsibility requirements, and provide the Commission with financial assurance as required under §5.205 of this title (relating to Fees, Financial Responsibility, and Financial Assurance). (1) The applicant must demonstrate financial responsibility and resources for corrective action, injection well plugging, post-injection storage facility care and storage facility closure, and emergency and remedial response until the director has provided to the operator a written verification that the director has determined that the facility has reached the end of the post-injection storage facility care period. (2) In determining whether the applicant is financially responsible, the director must rely on the following: (A) the person's most recent audited annual report filed with the U. S. Securities and Exchange Commission under Section 13 or 15(d), Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)). The date of the audit may not be more than one year before the date of submission of the application to the division; and (B) the person's most recent quarterly report filed with the U. S. Securities and Exchange Commission under Section 13 or 15(d), Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); or (C) if the person is not required to file such a report, the person's most recent audited financial statement. The date of the audit must not be more than one year before the date of submission of the application to the division. **§5.203(n)** Fees, Financial Responsibility, and Financial Assurance. (b) Financial responsibility. (1) A person to whom a permit is issued under this subchapter must provide annually to the director evidence of financial responsibility that is satisfactory to the director. The operator must demonstrate and maintain financial responsibility and resources for corrective action, injection well plugging, post-injection storage facility care and storage facility closure, and emergency and remedial response until the director has provided written verification that the director has determined			

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			that the facility has reached the end of the post-injection storage facility care period. (2) In determining whether the person is financially responsible, the director must rely on: (A) the person's most recent audited annual report filed with the U. S. Securities and Exchange Commission under Section 13 or 15(d), Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); and (B) the person's most recent quarterly report filed with the U. S. Securities and Exchange Commission under Section 13 or 15(d), Securities Exchange Act of 1934 (15 U.S.C. Section 78m or 78o(d)); or (C) if the person is not required to file such a report, the person's most recent audited financial statement. The date of the audit must not be more than one year before the date of submission of the application to the director. (3) The applicant's demonstration of financial responsibility must account for the entire area of review, regardless of whether corrective action in the AOR is phased. (c) Financial assurance. (1) Injection and monitoring wells. The operator must comply with the requirements of §3.78 of this title for all monitoring wells that penetrate the base of usable quality water and all injection wells. (2) Geologic storage facility. (A) The applicant must include in an application for a geologic storage facility permit: (i) a written estimate of the highest likely dollar amount necessary to perform post-injection monitoring and closure of the facility that shows all assumptions and calculations used to develop the estimate; (ii) a copy of the form of the bond or letter of credit that will be filed with the Commission; and (iii) information concerning the issuer of the bond or letter of credit including the issuer's name and address and evidence of authority to issue bonds or letters of credit in Texas. (B) A geologic storage facility may not receive CO_2 until a bond or letter of credit in an amount approved by the director under this subsection and meeting the requirements of this subsection as to form and issuer has been filed with and approved by the director. (C) The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements:			

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			(i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, post-injection monitoring and site care, and closure of the geologic storage facility, exclusive of plugging costs for any well or wells at the facility, at any time during the permit term in accordance with all applicable state laws, Commission rules and orders, and the permit; (ii) A qualified professional engineer licensed by the State of Texas, as required under Occupations Code, Chapter 1001, relating to Texas Engineering Practices Act, must prepare or supervise the preparation of a written estimate of the highest likely amount necessary to close the geologic storage facility. The operator must submit to the director the written estimate under seal of a qualified licensed professional engineer, as required under Occupations Code, Chapter 1001, relating to Texas Engineering Practices Act; and (iii) The Commission may use the proceeds of financial assurance filed under this subsection to pay the costs of plugging any well or wells at the facility if the financial assurance for plugging costs filed with the Commission is insufficient to pay for the plugging of such well or wells. (D) Bonds and letters of credit filed in satisfaction of the financial assurance requirements for a geologic storage facility must comply with the following standards as to issuer and form. (i) The issuer of any geologic storage facility bond filed in satisfaction of the requirements of this subsection must be a corporate surety authorized to do business in Texas. The form of bond filed under this subsection must provide that the bond be renewed and continued in effect until the conditions of the bond have been met or its release is authorized by the director. (ii) Any letter of credit filed in satisfaction of the requirements of this subsection must be issued by and drawn on a bank authorized under state or federal law to operate in Texas. The letter of credit must be an irrevocable, standby letter of credit subject to the requirements of Texas Business and Commerce Code, §5.101 -§5.118. The letter of credit must provide that it will be renewed and continued in effect until the conditions of the letter			

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			of credit have been met or its release is authorized by the director. (E) The operator of a geologic storage facility must provide to the director annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes to the area of review and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the post-injection storage facility care and closure plan. The operator must provide to the director upon request an adjustment of the cost estimate if the director has reason to believe that the original demonstration is no longer adequate to cover the cost of injection well plugging and post-injection storage facility care and closure. (3) The director may consider allowing the phasing in of financial assurance for only corrective action based on project-specific factors. (4) The director may approve a reduction in the amount of financial assurance required for post-injection monitoring and/or corrective action based on project-specific monitoring results. (d) Notice of adverse financial conditions. (1) The operator must notify the Commission of adverse financial conditions that may affect the operator's ability to carry out injection well plugging and post-injection storage facility care and closure. An operator must file any notice of bankruptcy in accordance with §3.1(f) of this title (relating to Organization Report; Retention of Records; Notice Requirements). The operator must give such notice by certified mail. (2) The operator filing a bond must ensure that the bond provides a mechanism for the bond or surety company to give prompt notice to the Commission and the operator of any action filed alleging insolvency or bankruptcy of the surety company or the bank or alleging any violation that would result in suspension or revocation of the surety or bank's charter or license to do business. (3) Upon the incapacity of a bank or surety company by reason of bankruptcy, insolvency or suspension, or revocation of its charter or license, the Commission must deem the operator to be without bond coverage. The Commission must issue a notice to any operator who is without bond coverage and must specify a reasonable period to replace bond coverage, not to exceed 90 days.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
292.	*Mechanical integrity*. A permit for any Class VI well which lacks mechanical integrity shall include a condition prohibiting injection operations until the permittee shows to the satisfaction of the Director under §§146.8, or 146.89 for Class VI, that the well has mechanical integrity.	40 CFR §144.52(a)(8) 40 CFR §146.89	**§5.206(d)(2)** (F) The operator must comply with the following requirements for alarms and automatic shut-off systems. (i) The operator must install and use alarms and automatic shut-off systems designed to alert the operator and shut-in the well when operating parameters such as annulus pressure, injection rate or other parameters diverge from permitted ranges and/or gradients. On offshore wells, the automatic shut-off systems must be installed down-hole. (ii) If an automatic shutdown is triggered or a loss of mechanical integrity is discovered, the operator must immediately investigate and identify as expeditiously as possible the cause. If, upon investigation, the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking mechanical integrity, the operator must: (I) immediately cease injection; (II) take all steps reasonably necessary to determine whether there may have been a release of the injected CO2 stream into any unauthorized zone; (III) notify the director as soon as practicable, but within 24 hours; (IV) restore and demonstrate mechanical integrity to the satisfaction of the director prior to resuming injection; and (V) notify the director when injection can be expected to resume.			
293.	*Additional conditions*. The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water.	40 CFR 144.52(a)(9) (See also 145.11(a)(20))	**§5.206(o) Other permit terms and conditions**. In any permit for a geologic storage facility, the director must impose terms and conditions reasonably necessary to protect USDWs. Permits issued under this subchapter continue in effect until revoked, modified, or suspended by the Commission. The operator must comply with each requirement set forth in this subchapter as a condition of the permit unless modified by the terms of the permit.			
294.	In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the SDWA and parts 144, 145, 146 and 124.	40 CFR 144.52(b)(1) (See also 145.11(a)(20))	**§5.206(o) Other permit terms and conditions**.			

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
295.	For a State issued permit, an applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. For State and EPA administered programs, an applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in §144.39.	40 CFR 144.52(b)(2) (See also 145.11(a)(20))	No reference found.			
296.	New or reissued permits, and to the extent allowed under §144.39 modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in §144.52.	40 CFR 144.52(b)(3) (See also 145.11(a)(20))	**§5.206**			
297.	Incorporation. All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.	40 CFR 144.52(c) (See also 145.11(a)(20))	**§5.206. Permit Standards.** (a) Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this chapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.			
40 CFR 144.53 Schedule of compliance.						
298.	General. The permit may, when appropriate, specify a schedule of compliance leading to compliance with the SDWA and parts 144, 145, 146, and 124.	40 CFR 144.53(a) (See also 145.11(a)(21))	**§5.206(o)(2)(J)** Schedule of compliance: The permit may, when appropriate, specify a schedule of compliance leading to compliance with all provisions of this subchapter and Chapter 3 of this title. (i) Any schedule of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit. (ii) If the schedule of compliance is for a duration of more than one year from the date of permit issuance, then interim requirements and completion dates (not to exceed one year) must be incorporated into the compliance schedule and permit. (iii) Progress reports must be submitted no later than 30 days following each interim date and the final date of compliance.			
299.	Time for compliance. Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.	40 CFR 144.53(a)(1) (See also 145.11(a)(21))	**§5.206(o)(2)(J)** Schedule of compliance: (i) Any schedule of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
300.	Interim dates. Except as provided in paragraph (b)(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.	40 CFR 144.53(a)(2) (See also 145.11(a)(21))	**§5.206(o)(2)(J)** Schedule of compliance: (ii) If the schedule of compliance is for a duration of more than one year from the date of permit issuance, then interim requirements and completion dates (not to exceed one year) must be incorporated into the compliance schedule and permit.			
301.	The time between interim dates shall not exceed 1 year.	40 CFR 144.53(a)(2)(i) (See also 145.11(a)(21))	**§5.206(o)(2)(I)(ii)**			
302.	If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.	40 CFR 144.53(a)(2)(ii) (See also 145.11(a)(21))	**§5.206(o)(2)(I)(ii)**			
303.	Reporting. The permit shall be written to require that if paragraph (a)(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.	40 CFR 144.53(a)(3) (See also 145.11(a)(21))	**§5.206(o)(2)(I)(ii)**			
40 CFR 144.54 Requirements for recording and reporting of monitoring results.						
304.	All permits shall specify: Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);	40 CFR 144.54(a) (See also 145.11(a)(22))	**§5.206(e) Monitoring, sampling, and testing requirements.** (1) The operator of an anthropogenic CO2 injection well must maintain and comply with the approved monitoring, sampling, and testing plan to verify that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone. (2) All permits shall include the following requirements: (A) the proper use, maintenance, and installation of monitoring equipment or methods;			
305.	Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;	40 CFR 144.54(b) (See also 145.11(a)(22))	**§5.206(e)(2)(B)** monitoring including type, intervals, and frequency sufficient to yield data that are representative of the monitored activity including, when required, continuous monitoring;			

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
306.	Applicable reporting requirements based upon the impact of the regulated activity and as specified in part 146. Reporting shall be no less frequent than specified in the above regulations.	40 CFR 144.54(c) (See also 145.11(a)(22))	**§5.206(e)(2)(C)** reporting no less frequently than as specified in §5.207 of this title (relating to Reporting and Record-Keeping). (3) The director may require additional monitoring as necessary to support, upgrade, and improve computational modeling of the AOR evaluation and to determine compliance with the requirement that the injection activity not allow movement of fluid that would endanger USDWs.			
SUBPART G--REQUIREMENTS FOR OWNERS AND OPERATORS OF CLASS V INJECTION WELLS						
40 CFR §144.80 What is a Class V injection well? Note: This part is not in the Class VI primacy manual crosswalk. These rows could be deleted from this table.						
PART 146--UNDERGROUND INJECTION CONTROL PROGRAM: CRITERIA AND STANDARDS						
SUBPART A--GENERAL PROVISIONS						
40 CFR 146.1 Applicability and scope.						
307.	(a) This part sets forth technical criteria and standards for the UIC Program. This part should be read in conjunction with 40 CFR parts 124, 144, and 145, which also apply to UIC programs. 40 CFR part 144 defines the regulatory framework of EPA administered permit programs. 40 CFR part 145 describes the elements of an approvable State program and procedures for EPA approval of State participation in the permit programs. 40 CFR part 124 describes the procedures the Agency will use for issuing permits under the covered programs. Certain of these procedures will also apply to State-administered programs as specified in 40 CFR 5.	40 CFR 146.1(a)	No reference found.	Note that states are not expected to have language equivalent to this section. This provision is included here to provide background on the UIC program.		
308.	Upon the approval, partial approval or promulgation of a State UIC program by the Administrator, any underground injection which is not authorized by the Director by rule or by permit is unlawful.	40 CFR 146.1(b)	No reference found.	Not needed in the state regulation.		
40 CFR 146.3 Definitions						
309.	*Abandoned well* means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.		**16 TAC 3.15(a)(6)** Inactive well—An unplugged well that has been spudded or has been equipped with cemented casing and that has had not reported production, disposal, injection, or other permitted activity for a period of greater than 12 months.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
310.	*Casing* means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole.		**§5.102(8)** Casing--A pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole.			
311.	*Cementing* means the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.		**§5.102(9)** Cementing--The operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.			
312.	*Effective date* of a UIC program means the date that a State UIC program is approved or established by the Administrator.		No reference found.	Not required of state regulations.		
313.	*Experimental technology* means a technology which has not been proven feasible under the conditions in which it is being tested.		No reference found.			
314.	*Fault* means a surface or zone of rock fracture along which there has been displacement.		**§5.202(44)** Transmissive fault or fracture--A fault or fracture that has sufficient permeability and vertical extent to allow fluids to move beyond the confining zone.			
315.	*Flow rate* means the volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel.		**§5.102(22)** Flow rate--The volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel.			
316.	*Lithology* means the description of rocks on the basis of their physical and chemical characteristics.		**§5.102(30)** Lithology--The description of rocks on the basis of their physical and chemical characteristics.			
317.	*Owner or operator* means the owner or operator of any facility or activity subject to regulation under the RCRA, UIC, NPDES, or 404 programs.		**§5.102(34)** Operator--A person, acting for himself or as an agent for others, designated to the Railroad Commission of Texas as the person with responsibility for complying with the rules and regulations regarding the permitting, physical operation, closure, and post-closure care of a geologic storage facility, or such person's authorized representative.			
318.	*Packer* means a device lowered into a well to produce a fluid-tight seal.		**§5.102(35)** Packer--A device lowered into a well to produce a fluid-tight seal.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
319.	*Permit* means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of this part and parts 124, 144, and 145. Permit does not include RCRA interim status (§122.23), UIC authorization by rule (§§144.21 to 144.26 and 144.15), or any permit which has not yet been the subject of final agency action, such as a "draft permit" or a "proposed permit."		**§5.102(36)** Permit--An authorization, license, or equivalent control document issued by the Commission to implement the requirements of this chapter.			
320.	*Plugging* means the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation.		**§5.102(38)** Plugging--The act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation.			
321.	*Plugging record* means a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration and waste injection wells, and may contain a well log, description of amounts and types of plugging material used, the method employed for plugging, a description of formations which are sealed and a graphic log of the well showing formation location, formation thickness, and location of plugging structures.		No reference found		Self explanatory	
322.	*Pressure* means the total load or force per unit area acting on a surface.		No reference found		Self explanatory	
323.	*Sole or principal source aquifer* means an aquifer which has been designated by the Administrator pursuant to section 1424 (a) or (e) of the SDWA.		No reference found			
324.	*Surface casing* means the first string of well casing to be installed in the well.		**§5.102(43)** Surface casing--The first string of well casing to be installed in the well.			
325.	*Well plug* means a watertight and gastight seal installed in a borehole or well to prevent movement of fluids.		No reference found.			
326.	*Well stimulation* means several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for wastewater to move more readily into the formation, and includes (1) surging, (2) jetting, (3) blasting, (4) acidizing, (5) hydraulic fracturing.		**§5.202(47) Well stimulation**--Any of several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for fluid to move more readily into the formation including, but not limited to, surging, jetting, blasting, acidizing, and hydraulic fracturing.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
327.	*Well monitoring* means the measurement by on-site instruments or laboratory methods, of the quality of water in a well		**§5.102(32) Monitoring well**—A well either completed or re-completed to observe subsurface phenomena, including the presence of anthropogenic CO2, pressure fluctuations, fluid levels and flow, temperature, and/or in situ water chemistry.			
40 CFR §146.4 Criteria for exempted aquifers.						
328.	An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" in §146.3 may be determined under §144.7 of this chapter to be an "exempted aquifer" for Class I-V wells if it meets the criteria in paragraphs (a) through (c) of this section. Class VI wells must meet the criteria under paragraph (d) of this section:	40 CFR §146.4			Other than EPA approved aquifer exemption expansions, new aquifer exemptions shall not be issued for Class VI injection wells. Even if an aquifer has not been specifically identified by the administrator, it is an underground source of drinking water if it meets the definition in §5.102(45) of this chapter.	
329.	It does not currently serve as a source of drinking water; and	40 CFR 146.4(a)	**§5.201(e) Expansion of aquifer exemption.** The areal extent of an aquifer exemption for a Class II enhanced recovery well may be expanded for the exclusive purpose of Class VI injection for geologic storage if the aquifer does not currently serve as a source of drinking water; and the total dissolved solids content is more than 3,000 milligrams per liter (mg/l) and less than 10,000 mg/l; and it is not reasonably expected to supply a public water system in accordance with 40 CFR §146.4. An operator seeking such an expansion shall submit, concurrent with the permit application, a supplemental report that complies with 40 CFR §144.7(d). The Commission adopts 40 CFR §144.7 and §146.4 by reference, effective July 1, 2022.			
330.	It cannot now and will not in the future serve as a source of drinking water because:	40 CFR 146.4(b)	**§5.201(e) Expansion of aquifer exemption.**			
331.	It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.	40 CFR 146.4(b)(1)	**§5.201(e) Expansion of aquifer exemption.**			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
332.	It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;	40 CFR 146.4(b)(2)	**§5.201(e) Expansion of aquifer exemption.**.			
333.	It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or	40 CFR 146.4(b)(3)	**§5.201(e) Expansion of aquifer exemption.**			
334.	It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or	40 CFR 146.4(b)(4)	**§5.201(e) Expansion of aquifer exemption.**			
335.	The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.	40 CFR 146.4(c)	**§5.201(e) Expansion of aquifer exemption.**			
336.	The areal extent of an aquifer exemption for a Class II enhanced oil recovery or enhanced gas recovery well may be expanded for the exclusive purpose of Class VI injection for geologic sequestration under §144.7(d) of this chapter if it meets the following criteria:	40 CFR §146.4(d)	**§5.201 (e) Expansion of aquifer exemption**. The areal extent of an aquifer exemption for a Class II enhanced recovery well may be expanded for the exclusive purpose of Class VI injection for geologic storage if the aquifer does not currently serve as a source of drinking water; and the total dissolved solids content is more than 3,000 milligrams per liter (mg/l) and less than 10,000 mg/l; and it is not reasonably expected to supply a public water system in accordance with 40 CFR §146.4. An operator seeking such an expansion shall submit, concurrent with the permit application, a supplemental report that complies with 40 CFR §144.7(d). The Commission adopts 40 CFR §144.7 and §146.4 by reference, effective July 1, 2022.			
337.	It does not currently serve as a source of drinking water; and	40 CFR §146.4(d)(1)	§5.201 (e) Expansion of aquifer exemption.			
338.	The total dissolved solids content of the ground water is more than 3,000 mg/l and less than 10,000 mg/l; and	40 CFR §146.4(d)(2)	§5.201 (e) Expansion of aquifer exemption.			
339.	It is not reasonably expected to supply a public water system.	40 CFR §146.4(d)(3)	§5.201 (e) Expansion of aquifer exemption.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
40 CFR §146.5 Classification of injection wells.						
340.	*Class V*. Injection wells not included in Class I, II, III, IV or VI. ***	40 CFR §146.5(e)	No reference found.		The definition of Class V wells is not included in Texas' Class VI regulations.	
341.	*Class VI.* Wells that are not experimental in nature that are used for geologic sequestration of carbon dioxide beneath the lowermost formation containing a USDW; or, wells used for geologic sequestration of carbon dioxide that have been granted a waiver of the injection depth requirements pursuant to requirements at §146.95; or, wells used for geologic sequestration of carbon dioxide that have received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to §§146.4 of this chapter and 144.7(d).	40 CFR §146.5(f)	No reference found.		The definition of a Class VI well in the state regulation does not specify that Class VI wells are not experimental in nature; however, a Class VI permit is required for any well injecting CO2 for the purpose of geologic sequestration.	

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
SUBPART H--CRITERIA AND STANDARDS APPLICABLE TO CLASS VI WELLS						
40 CFR §146.81 Applicability.						
342.	This subpart establishes criteria and standards for UIC programs to regulate any Class VI carbon dioxide geologic sequestration injection wells.	40 CFR §146.81(a)	**§5.101 Purpose.** The purpose of this chapter is to implement the portion of the state program for geologic storage of anthropogenic CO_2 over which the Railroad Commission has jurisdiction consistent with state and federal law related to protection of USDWs.			
343.	This subpart applies to any wells used to inject carbon dioxide specifically for the purpose of geologic sequestration, i.e., the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations.	40 CFR §146.81(b)	**§5.201 Applicability and Compliance.** (a) This subchapter applies to the geologic storage of anthropogenic CO_2 in, and the injection of anthropogenic CO_2 into, a reservoir that is initially or may be productive of oil, gas, or geothermal resources or a saline formation directly above or below that reservoir. A reservoir that may be productive means an identifiable geologic unit that has had production in the past, which is similar to productive or previously productive reservoirs along the same or a similar trend, or potentially contains oil, gas, or geothermal resources based on analysis of geophysical and/or seismic data. (c) This subchapter applies to a well that is authorized as or converted to an anthropogenic CO_2 injection well for geologic storage. (e) The operator of a geologic storage facility must comply with the requirements of this subchapter as well as with all other applicable Commission rules and orders, including the requirements of Chapter 8 of this title (relating to Pipeline Safety Regulations) for pipelines and associated facilities.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
344.	This subpart also applies to owners or operators of permit- or rule-authorized Class I, Class II, or Class V experimental carbon dioxide injection projects who seek to apply for a Class VI geologic sequestration permit for their well or wells. Owners or operators seeking to convert existing Class I, Class II, or Class V experimental wells to Class VI geologic sequestration wells must demonstrate to the Director that the wells were engineered and constructed to meet the requirements at §146.86(a) and ensure protection of USDWs, in lieu of requirements at §§146.86(b) and 146.87(a). By December, 10, 2011, owners or operators of either Class I wells previously permitted for the purpose of geologic sequestration or Class V experimental technology wells no longer being used for experimental purposes that will continue injection of carbon dioxide for the purpose of GS must apply for a Class VI permit. A converted well must still meet all other requirements under part 146.	40 CFR §146.81(c)	**§5.201** Applicability and Compliance (b) This subchapter does not apply to the injection of fluid through the use of an injection well regulated under §3.46 of this title (relating to Fluid Injection into Productive Reservoirs) for the primary purpose of enhanced recovery operations from which there is reasonable expectation of more than insignificant future production volumes of oil, gas, or geothermal energy and operating pressures are no higher than reasonably necessary to produce such volumes or rates. However, the operator of an enhanced recovery project may propose to also permit the enhanced recovery project as a CO_2 geologic storage facility simultaneously. If the director determines that an injection well regulated under §3.46 of this title should be regulated under this subchapter because the injection well is no longer being used for the primary purpose of enhanced recovery operations, the director must notify the operator of such determination and allow the operator at least 30 days to respond to the determination and to file an application under this subchapter or cease operation of the well. Additionally, this subchapter does not preclude an enhanced oil recovery project operator from opting into a regulatory program that provides carbon credit for anthropogenic CO_2 sequestered through the enhanced recovery project.		Any Class V well permitted for injection of CO2 should have a Class VI permit by the time Texas receives primacy.	
345.	*Definitions*. The following definitions apply to this subpart. To the extent that these definitions conflict with those in §§144.3 or 146.3 of this chapter these definitions govern for Class VI wells:	40 CFR §146.81(d)	**§5.102**.Definitions			
346.	*Area of review* means the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and displaced fluids, and is based on available site characterization, monitoring, and operational data as set forth in §146.84.	40 CFR §146.81(d)	**§5.201(5)** Area of review--The subsurface three-dimensional extent of the CO_2 stream plume and the associated pressure front, as well as the overlying formations, any underground sources of drinking water overlying an injection zone along with any intervening formations, and the surface area above that delineated region.			
347.	*Carbon dioxide plume* means the extent underground, in three dimensions, of an injected carbon dioxide stream.	40 CFR §146.81(d)	**§5.102(6)** Carbon dioxide (CO_2) plume--The underground extent, in three dimensions, of an injected CO_2 stream.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
348.	*Carbon dioxide stream* means carbon dioxide that has been captured from an emission source (e.g., a power plant), plus incidental associated substances derived from the source materials and the capture process, and any substances added to the stream to enable or improve the injection process. This subpart does not apply to any carbon dioxide stream that meets the definition of a hazardous waste under 40 CFR part 261.	40 CFR §146.81(d)	**§5.102(7)** Carbon dioxide (CO_2) stream--CO_2 that has been captured from an emission source, incidental associated substances derived from the source materials and the capture process, and any substances added to the stream to enable or improve the injection process. The term does not include any CO_2 stream that meets the definition of a hazardous waste under 40 CFR Part 261.			
349.	*Confining zone* means a geologic formation, group of formations, or part of a formation stratigraphically overlying the injection zone(s) that acts as barrier to fluid movement. For Class VI wells operating under an injection depth waiver, confining zone means a geologic formation, group of formations, or part of a formation stratigraphically overlying and underlying the injection zone(s).	40 CFR §146.81(d)	**§5.102(13)** Confining zone--A geologic formation, group of formations, or part of a formation that is capable of limiting fluid movement from an injection zone.			
350.	*Corrective action* means the use of Director-approved methods to ensure that wells within the area of review do not serve as conduits for the movement of fluids into underground sources of drinking water (USDW).	40 CFR §146.81(d)	**§5.102(14)** Corrective action--Methods to assure that wells within the area of review do not serve as conduits for the movement of fluids into or between underground sources of drinking water, including the use of corrosion resistant materials, where appropriate.			
351.	*Geologic sequestration* means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. This term does not apply to carbon dioxide capture or transport.	40 CFR §146.81(d)	**§5.102(26)** Geologic storage--The long-term containment of anthropogenic CO_2 in a reservoir.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
352.	*Geologic sequestration project* means an injection well or wells used to emplace a carbon dioxide stream beneath the lowermost formation containing a USDW; or, wells used for geologic sequestration of carbon dioxide that have been granted a waiver of the injection depth requirements pursuant to requirements at §146.95; or, wells used for geologic sequestration of carbon dioxide that have received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to §§146.4 of this chapter and 144.7(d). It includes the subsurface three-dimensional extent of the carbon dioxide plume, associated area of elevated pressure, and displaced fluids, as well as the surface area above that delineated region.	40 CFR §146.81(d)	**§5.102(27)** Geologic storage facility or storage facility--The underground reservoir, underground equipment, injection wells, and surface buildings and equipment used or to be used for the geologic storage of anthropogenic CO2 and all surface and subsurface rights and appurtenances necessary to the operation of a facility for the geologic storage of anthropogenic CO2. The term includes the subsurface three-dimensional extent of the CO2 plume, associated area of elevated pressure, and displaced fluids, as well as the surface area above that delineated region, and any reasonable and necessary areal buffer and subsurface monitoring zones. The term does not include a pipeline used to transport CO2 from the facility at which the CO2 is captured to the geologic storage facility. The storage of CO2 incidental to or as part of enhanced recovery operations does not in itself automatically render a facility a geologic storage facility.			
353.	*Injection zone* means a geologic formation, group of formations, or part of a formation that is of sufficient areal extent, thickness, porosity, and permeability to receive carbon dioxide through a well or wells associated with a geologic sequestration project.	40 CFR §146.81(d)	**§5.102(28)** Injection zone--A geologic formation, group of formations, or part of a formation that is of sufficient areal extent, thickness, porosity, and permeability to receive CO_2 through a well or wells associated with a geologic storage facility.			
354.	*Post-injection site care* means appropriate monitoring and other actions (including corrective action) needed following cessation of injection to ensure that USDWs are not endangered, as required under §146.93.	40 CFR §146.81(d)	**§5.102(39)** Post-injection facility care--Monitoring and other actions (including corrective action) needed following cessation of injection to assure that underground sources of drinking water are not endangered and that the anthropogenic CO2 remains confined to the permitted injection interval.			
355.	*Pressure front* means the zone of elevated pressure that is created by the injection of carbon dioxide into the subsurface. For the purposes of this subpart, the pressure front of a carbon dioxide plume refers to a zone where there is a pressure differential sufficient to cause the movement of injected fluids or formation fluids into a USDW.	40 CFR §146.81(d)	**§5.102(40)** Pressure front--The zone of elevated pressure that is created by the injection of the CO2 stream into the subsurface where there is a pressure differential sufficient to cause movement of the CO2 stream or formation fluids from the injection zone into an USDW.			
356.	*Site closure* means the point/time, as determined by the Director following the requirements under §146.93, at which the owner or operator of a geologic sequestration site is released from post-injection site care responsibilities.	40 CFR §146.81(d)	**§5.102(b)(21)** Facility closure--The point at which the operator of a geologic storage facility is released from post-injection storage facility care responsibilities.			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
357.	*Transmissive fault or fracture* means a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.	40 CFR §146.81(d)	**§5.102(4)** Transmissive fault or fracture--A fault or fracture that has sufficient permeability and vertical extent to allow fluids to move beyond the confining zone.			
40 CFR §146.82 Required Class VI permit information.						
358.	This section sets forth the information which must be considered by the Director in authorizing Class VI wells. For converted Class I, Class II, or Class V experimental wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current, readily available to the Director, and sufficiently identified to be retrieved.	40 CFR §146.82	**§5.203(c) (2)(A)** Application Requirements - Geologic, geochemical, and hydrologic information.			
359.	Prior to the issuance of a permit for the construction of a new Class VI well or the conversion of an existing Class I, Class II, or Class V well to a Class VI well, the owner or operator shall submit, pursuant to §146.91(e), and the Director shall consider the following:	40 CFR §146.82(a)		The state regulation does not explicitly separate the permit application information into two phases (pre-construction and post-construction/pre-operation) like the federal rule does.		

	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
360.	Information required in §144.31 (e)(1) through (6) of this chapter; **(e)** ***Information requirements.*** All applicants for Class I, II, III, and V permits shall provide the following information to the Director, using the application form provided by the Director. Applicants for Class VI permits shall follow the criteria provided in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.82" \h] of this chapter. **(1)** The activities conducted by the applicant which require it to obtain permits under RCRA, UIC, the NPDES program under the Clean Water Act, or the Prevention of Significant Deterioration (PSD) program under the Clean Air Act. **(2)** Name, mailing address, and location of the facility for which the application is submitted. **(3)** Up to four SIC codes which best reflect the principal products or services provided by the facility. **(4)** The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity. **(5)** Whether the facility is located on Indian lands. **(6)** A listing of all permits or construction approvals received or applied for under any of the following programs: (i) Hazardous Waste Management program under RCRA. **(ii)** UIC program under SDWA. **(iii)** NPDES program under CWA. **(iv)** Prevention of Significant Deterioration (PSD) program under the Clean Air Act. **(v)** Nonattainment program under the Clean Air Act. **(vi)** NESHAPS preconstruction approval under the Clean Air Act. **(vii)** Ocean dumping permits under the Marine Protection Research and Sanctuaries Act. **(viii)** Dredge and fill permits under section 404 of CWA. **(ix)** Other relevant environmental permits, including State permits.	40 CFR §146.82(a)(1) **§146.82 Required Class VI permit information.** This section sets forth the information which must be considered by the Director in authorizing Class VI wells. For converted Class I, Class II, or Class V experimental wells, certain maps, cross-sections, tabulations of wells within the AOR and other data may be included in the application by reference provided they are current, readily available to the Director, and sufficiently identified to be retrieved. **(a)** Prior to the issuance of a permit for the construction of a new Class VI well or the conversion of an existing Class I, Class II, or Class V well to a Class VI well, the owner or operator shall submit, pursuant to [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.91" \l "e" \h], and the Director shall consider the following: **(1)** Information required in 144.31(e)(1)-(6) of this chapter;	**§5.203**(2) General information. (A) On the application, the applicant must include the name, mailing address, and location of the facility for which the application is being submitted and the operator's name, address, telephone number, Commission Organization Report number, and ownership of the facility. (B) When a geologic storage facility is owned by one person but is operated by another person, it is the operator's duty to file an application for a permit. (C) The application must include a listing of all relevant permits or construction approvals for the facility received or applied for under federal or state environmental programs; (D) A person making an application to the director for a permit under this subchapter must submit a copy of the application to the Texas Commission on Environmental Quality (TCEQ) and must submit to the director a letter of determination from TCEQ concluding that drilling and operating an anthropogenic CO2 injection well for geologic storage or constructing or operating a geologic storage facility will not impact or interfere with any previous or existing Class I injection well, including any associated waste plume, or any other injection well authorized or permitted by TCEQ. The letter must be submitted to the director before any permit under this subchapter may be issued.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
361.	A map showing the injection well for which a permit is sought and the applicable area of review consistent with §146.84. Within the area of review, the map must show the number or name, and location of all injection wells, producing wells, abandoned wells, plugged wells or dry holes, deep stratigraphic boreholes, State- or EPA-approved subsurface cleanup sites, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells, other pertinent surface features including structures intended for human occupancy, State, Tribal, and Territory boundaries, and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;	40 CFR §146.82(a)(2)	**§5.203(b) Surface map and information**. Only information of public record is required to be included on this map. (1) The applicant must file with the director a surface map delineating the proposed location of any injection well and the boundary of the geologic storage facility for which a permit is sought and the applicable AOR. (2) The applicant must show within the AOR on the map the number or name and the location of: (A) all known artificial penetrations through the confining zone, including injection wells, producing wells, inactive wells, plugged wells, or dry holes; (B) the locations of cathodic protection holes, subsurface cleanup sites, bodies of surface water, springs, surface and subsurface mines, quarries, and water wells; and (C) other pertinent surface features, including pipelines, roads, and structures intended for human occupancy. (3) The applicant must identify on the map any known or suspected faults expressed at the surface.			
362.	Information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, including:	40 CFR §146.82(a)(3)	**§5.203(c)(1)** (1) The applicant must submit a descriptive report prepared by a knowledgeable person that includes an interpretation of the results of appropriate logs, surveys, sampling, and testing sufficient to determine the depth, thickness, porosity, permeability, and lithology of, and the geochemistry of any formation fluids in, all relevant geologic formations.			
363.	Maps and cross sections of the area of review;	40 CFR §146.82(a)(3)(i)	**§5.203(c)(2)** The applicant must submit information on the geologic structure and reservoir properties of the proposed storage reservoir and overlying formations, including the following information: (A) geologic and topographic maps and cross sections illustrating regional geology, hydrogeology, and the geologic structure of the area from the ground surface to the base of the injection zone within the area of review that indicate the general vertical and lateral limits of all USDWs within the AOR, their positions relative to the storage reservoir and the direction of water movement, where known;			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
364.	The location, orientation, and properties of known or suspected faults and fractures that may transect the confining zone(s) in the area of review and a determination that they would not interfere with containment;	40 CFR §146.82(a)(3)(ii)	**§5.203(c)(2)**(C) the location, orientation, and properties of known or suspected transmissive faults or fractures that may transect the confining zone within the AOR and a determination that such faults or fractures would not compromise containment; (E) geomechanical information on fractures, stress, ductility, rock strength, and in situ fluid pressures within the confining zone;			
365.	Data on the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of the injection and confining zone(s); including geology/facies changes based on field data which may include geologic cores, outcrop data, seismic surveys, well logs, and names and lithologic descriptions;	40 CFR §146.82(a)(3)(iii)	**§5.203(c)(2)(B)** the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of, and the geochemistry of any formation fluids in, the storage reservoir and confining zone and any other relevant geologic formations, including geology/facies changes based on field data, which may include geologic cores, outcrop data, seismic surveys, well logs, and lithologic descriptions, and the analyses of logging, sampling, and testing results used to make such determinations;			
366.	Geomechanical information on fractures, stress, ductility, rock strength, and in situ fluid pressures within the confining zone(s);	40 CFR §146.82(a)(3)(iv)	**§5.203(c)(2)**(E) geomechanical information on fractures, stress, ductility, rock strength, and in situ fluid pressures within the confining zone;			
367.	Information on the seismic history including the presence and depth of seismic sources and a determination that the seismicity would not interfere with containment; and	40 CFR §146.82(a)(3)(v)	**§5.203(c)(2)(D)** the seismic history, including the presence and depth of seismic sources, and a determination that the seismicity would not compromise containment;			
368.	Geologic and topographic maps and cross sections illustrating regional geology, hydrogeology, and the geologic structure of the local area.	40 CFR §146.82(a)(3)(vi)	**§5.203(c)(2)** The applicant must submit information on the geologic structure and reservoir properties of the proposed storage reservoir and overlying formations, including the following information:			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
369.	A tabulation of all wells within the area of review which penetrate the injection or confining zone(s). Such data must include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require;	40 CFR §146.82(a)(4)	**§5.203(d)(1)(B)** Identification and table of penetrations. The applicant must identify, compile, and submit a table listing all penetrations, including active, inactive, plugged, and unplugged wells and underground mines in the AOR that may penetrate the confining zone, that are known or reasonably discoverable through specialized knowledge or experience. The applicant must provide a description of each penetration's type, construction, date drilled or excavated, location, depth, and record of plugging and/or completion or closure. Examples of specialized knowledge or experience may include reviews of federal, state, and local government records, interviews with past and present owners, operators, and occupants, reviews of historical information (including aerial photographs, chain of title documents, and land use records), and visual inspections of the facility and adjoining properties.			
370.	Maps and stratigraphic cross sections indicating the general vertical and lateral limits of all USDWs, water wells and springs within the area of review, their positions relative to the injection zone(s), and the direction of water movement, where known;	40 CFR §146.82(a)(5)	**§5.203(c)(2)(A)** geologic and topographic maps and cross sections illustrating regional geology, hydrogeology, and the geologic structure of the area from the ground surface to the base of the injection zone within the area of review that indicate the general vertical and lateral limits of all USDWs within the AOR, their positions relative to the storage reservoir and the direction of water movement, where known;			
371.	Baseline geochemical data on subsurface formations, including all USDWs in the area of review;	40 CFR §146.82(a)(6)	**§5.203(c)(2)(G)** baseline geochemical data for subsurface formations that will be used for monitoring purposes, including all formations containing USDWs within the area of review.			
372.	Proposed operating data for the proposed geologic sequestration site:	40 CFR §146.82(a)(7)	**§5.203(i) Operating information.** (1) Operating plan. The applicant must submit a plan for operating the injection wells and the geologic storage facility that complies with the criteria set forth in §5.206(c) of this title, and that outlines the steps necessary to conduct injection operations. The applicant must include the following proposed operating data in the plan:			
373.	Average and maximum daily rate and volume and/or mass and total anticipated volume and/or mass of the carbon dioxide stream;	40 CFR §146.82(a)(7)(i)	**§5.203(i)(1)(A)** the average and maximum daily injection rates and volumes of the CO2 stream;			
374.	Average and maximum injection pressure;	40 CFR §146.82(a)(7)(ii)	**§5.203(j)(1)(B)** the average and maximum surface injection pressure;			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
375.	The source(s) of the carbon dioxide stream; and	40 CFR §146.82(a)(7)(iii)	**§5.203(j)(1)(C)** the source(s) of the CO2 stream and the volume of CO2 from each source; and			
376.	An analysis of the chemical and physical characteristics of the carbon dioxide stream.	40 CFR §146.82(a)(7)(iv)	**§5.203(j)(1)(D)** an analysis of the chemical and physical characteristics of the CO2 stream prior to injection.			
377.	Proposed pre-operational formation testing program to obtain an analysis of the chemical and physical characteristics of the injection zone(s) and confining zone(s) and that meets the requirements at §146.87;	40 CFR §146.82(a)(8)	**§5.203(c)(2)(F)** a description of the formation testing program used and the analytical results used to determine the chemical and physical characteristics of the injection zone and the confining zone; and			
378.	Proposed stimulation program, a description of stimulation fluids to be used and a determination that stimulation will not interfere with containment;	40 CFR §146.82(a)(9)	**§5.203(e)(4)** Well stimulation plan. The applicant must submit, as applicable, a description of the proposed well stimulation program and a determination that well stimulation will not compromise containment.			
379.	Proposed procedure to outline steps necessary to conduct injection operation;	40 CFR §146.82(a)(10)	**§5.203(i) Operating information.** (1) Operating plan. The applicant must submit a plan for operating the injection wells and the geologic storage facility that complies with the criteria set forth in §5.206(d) [§5.206(c)] of this title, and that outlines the steps necessary to conduct injection operations.			
380.	Schematics or other appropriate drawings of the surface and subsurface construction details of the well;	40 CFR §146.82(a)(11)	**§5.203(e)(2)** Construction information. The applicant must provide the following information for each well to allow the director to determine whether the proposed well construction and completion design will meet the general performance criteria in paragraph (1) of this subsection: (K) schematic drawings of the surface and subsurface construction details.			

381.	Injection well construction procedures that meet the requirements of §146.86. Injection well construction requirements. **(a)** ***General.*** The owner or operator must ensure that all Class VI wells are constructed and completed to: **(1)** Prevent the movement of fluids into or between USDWs or into any unauthorized zones; **(2)** Permit the use of appropriate testing devices and workover tools; and **(3)** Permit continuous monitoring of the annulus space between the injection tubing and long string casing. **(b)** ***Casing and cementing of Class VI wells.*** **(1)** Casing and cement or other materials used in the construction of each Class VI well must have sufficient structural strength and be designed for the life of the geologic sequestration project. All well materials must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Director. The casing and cementing program must be designed to prevent the movement of fluids into or between USDWs. In order to allow the Director to determine and specify casing and cementing requirements, the owner or operator must provide the following information: **(i)** Depth to the injection zone(s); **(ii)** Injection pressure, external pressure, internal pressure, and axial loading; **(iii)** Hole size; **(iv)** Size and grade of all casing strings (wall thickness, external diameter, nominal weight, length, joint specification, and construction material); **(v)** Corrosiveness of the CO2 stream and formation fluids; **(vi)** Down-hole temperatures; **(vii)** Lithology of injection and confining zone(s); **(viii)** Type or grade of cement and cement additives; and **(ix)** Quantity, chemical composition, and temperature of the CO2 stream. **(2)** Surface casing must extend through the base of the lowermost USDW and be cemented to the surface through the use of a single or multiple strings of casing and cement.	40 CFR §146.82(a)(12)	**§5.203(e) Injection well construction.** (1) Criteria for construction of anthropogenic CO2 injection wells. This paragraph establishes the criteria for the information about the construction and casing and cementing of, and special equipment for, anthropogenic CO2 injection wells that an applicant must include in an application. (A) General. The operator of a GS facility must ensure that all anthropogenic CO2 injection wells are constructed and completed in a manner that will: (i) prevent the movement of injected CO2 or displaced formation fluids into any unauthorized zones or into any areas where they could endanger USDWs; (ii) allow the use of appropriate testing devices and workover tools; and (iii) allow continuous monitoring of the annulus space between the injection tubing and long string casing. **§5.203(e)(1)(B)** Casing and cementing of anthropogenic CO2 injection wells. (i) The operator must ensure that injection wells are cased and the casing cemented in compliance with §3.13. (ii) Casing, cement, cement additives, and/or other materials used in the construction of each injection well must have sufficient structural strength and must be of sufficient quality and quantity to maintain integrity over the design life of the injection well. All well materials must be suitable for use with fluids with which the well materials may be expected to come into contact and must meet or exceed test standards developed for such materials by the API, ASTM International, or comparable standards as approved by the director. **§5.203(e)(1)(B)** (iii) Surface casing must extend through the base of the lowermost USDW above the injection zone and must be cemented to the surface. (iv) Circulation of cement may be accomplished by staging. The director may approve an alternative method of cementing in cases where the cement cannot be circulated to the surface, provided the applicant can demonstrate by using logs that the cement does not allow fluid movement between the casing and the well bore.			

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	(3) At least one long string casing, using a sufficient number of centralizers, must extend to the injection zone and must be cemented by circulating cement to the surface in one or more stages. **(4)** Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement does not allow fluid movement behind the well bore. **(5)** Cement and cement additives must be compatible with the CO2 stream and formation fluids and of sufficient quality and quantity to maintain integrity over the design life of the geologic sequestration project. The integrity and location of the cement shall be verified using technology capable of evaluating cement quality radially and identifying the location of channels to ensure that [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=f57cf679e499feb7dac98dfc59238f26&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h] are not endangered. **(c)** ***Tubing and packer.*** **(1)** Tubing and packer materials used in the construction of each Class VI well must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the API, ASTM		(v) At least one long string casing, using a sufficient number of centralizers, must extend through the injection zone. The long string casing must isolate the injection zone and other intervals as necessary for the protection of USDWs and to ensure confinement of the injected and formation fluids to the permitted injection zone using cement and/or other isolation techniques. (vi) The applicant must verify the integrity and location of the cement using technology capable of radial evaluation of cement quality and identification of the location of channels to ensure that USDWs will not be endangered. (vii) The director may exempt existing wells that have been associated with injection of CO2 for the purpose of ER from provisions of these casing and cementing requirements if the applicant demonstrates that the well construction meets the general performance criteria in subparagraph (A) of this paragraph. (B) Casing and cementing of anthropogenic CO2 injection wells. (ii) Casing, cement, cement additives, and/or other materials used in the construction of each injection well must have sufficient structural strength and must be of sufficient quality and quantity to maintain integrity over the design life of the injection well. All well materials must be suitable for use with fluids with which the well materials may be expected to come into contact and must meet or exceed test standards developed for such materials by the API, ASTM International, or comparable standards as approved by the director. **§5.203(e)(1)(C)(i)** Tubing and packer. All injection wells must inject fluids through tubing set on a mechanical packer. Packers must be set no higher than 100 feet above the top of the permitted injection interval or at a location approved by the director. (2) Construction information. The applicant must provide the following information for each well to allow the director to determine whether the proposed well construction and completion design will meet the general performance criteria in paragraph (1) of this subsection: (A) depth to the injection zone; (B) hole size;			

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	International, or comparable standards acceptable to the Director. **(2)** All owners or operators of Class VI wells must inject fluids through tubing with a packer set at a depth opposite a cemented interval at the location approved by the Director. **(3)** In order for the Director to determine and specify requirements for tubing and packer, the owner or operator must submit the following information: **(i)** Depth of setting; **(ii)** Characteristics of the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=27ac8590975cb5c2bea63d4b396f8c5f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h] (chemical content, corrosiveness, temperature, and density) and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8994d4b44d989458b9f49d3b1ab7ac28&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h] fluids; **(iii)** Maximum proposed injection [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=33aacae66f6b2a319cd009f81038673f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h]; **(iv)** Maximum proposed annular [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=33aacae66f6b2a319cd009f81038673f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h];		(C) size and grade of all casing and tubing strings (e.g., wall thickness, external diameter, nominal weight, length, joint specification and construction material, tubing tensile, burst, and collapse strengths); (D) proposed injection rate (intermittent or continuous), maximum proposed surface injection pressure, and maximum proposed volume of the CO2 stream; (E) type of packer and packer setting depth; (F) a description of the capability of the materials to withstand corrosion when exposed to a combination of the CO2 stream and formation fluids; (G) down-hole temperatures and pressures; (H) lithology of injection and confining zones; (I) type or grade of cement and additives; (J) chemical composition and temperature of the CO2 stream; and (K) schematic drawings of the surface and subsurface construction details. (3) Well construction plan. The applicant must submit an injection well construction plan that meets the criteria in paragraph (1) of this subsection.			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
	(v) Proposed injection rate (intermittent or continuous) and volume and/or mass of the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=27ac8590975cb5c2bea63d4b396f8c5f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h]; **(vi)** Size of tubing and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=4982613686b5407853d3f3244bbd1040&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.86" \h]; and **(vii)** Tubing tensile, burst, and collapse strengths.					

382.	Proposed area of review and corrective action plan that meets the requirements under **§146.84 Area of Review and corrective action.** **(a)** The area of review is the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected CO2 stream and is based on available site characterization, monitoring, and operational data. **(b)** The owner or operator of a Class VI well must prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic sequestration project, periodically reevaluate the delineation, and perform corrective action that meets the requirements of this section and is acceptable to the Director. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. As a part of the permit application for approval by the Director, the owner or operator must submit an area of review and corrective action plan that includes the following information: **(1)** The method for delineating the area of review that meets the requirements of paragraph (c) of this section, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based; **(2)** A description of: **(i)** The minimum fixed frequency, not to exceed five years, at which the owner or operator proposes to reevaluate the area of review; **(ii)** The monitoring and operational conditions that would warrant a reevaluation of the area of review prior to the next scheduled reevaluation as determined by the minimum fixed frequency established in paragraph (b)(2)(i) of this section. (iii) How monitoring and operational data (e.g., injection rate and pressure) will be used to inform an [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term	40 CFR §146.82(a)(13)	**§5.203(d)(2)** Area of review and corrective action plan. As part of an application, the applicant must submit an area of review and corrective action plan that includes the following information: (A) the method for delineating the area of review, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based; (B) for the area of review, a description of: (i) the minimum frequency subject to the annual certification pursuant to §5.206(f) (Permit Standards) at which the applicant proposes to re-evaluate the area of review during the life of the geologic storage facility; (ii) how monitoring and operational data will be used to re-evaluate the AOR; and (iii) the monitoring and operational conditions that would warrant a re-evaluation of the area of review prior to the next scheduled re-evaluation; and (C) a corrective action plan that describes: (i) how the corrective action will be conducted; (ii) how corrective action will be adjusted if there are changes in the AOR; (iii) if a phased corrective action is planned, how the phasing will be determined; and (iv) how site access will be secured for future corrective action. **(d) Area of review and corrective action**. This subsection describes the standards for the information regarding the delineation of the area of review, the identification of penetrations, and corrective action that an applicant must include in an application. (1) Initial delineation of the area of review and initial corrective action. The applicant must delineate the AOR, identify all wells that require corrective action, and perform corrective action on those wells. Corrective action may be phased. (A) Delineation of area of review. (i) Using computational modeling that considers the volumes and the physical and chemical properties of the injected CO2 stream, the physical properties of the formation into which the CO2 stream is to be injected, and available data including data available from logging, testing, or operation of wells, the applicant must predict the lateral and vertical extent of migration for the CO2 plume and formation fluids and the			

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	_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] reevaluation; and (iv) How [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] will be conducted to meet the requirements of [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "d" \h] of this section, including what [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] will be performed prior to injection and what, if any, portions of the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] will have [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] addressed on a phased basis and how the phasing will be determined; how [HYPERLINK "https://www.law.cornell.edu/definitions/		pressure differentials required to cause movement of injected fluids or formation fluids into an USDW in the subsurface for the following time periods: (I) five years after initiation of injection; (II) from initiation of injection to the end of the injection period proposed by the applicant; and (III) from initiation of injection to 10 years after the end of the injection period proposed by the applicant. (ii) The applicant must use a computational model that: (I) is based on geologic and reservoir engineering information collected to characterize the injection zone and the confining zone; (II) is based on anticipated operating data, including injection pressures, rates, and total volumes over the proposed duration of injection; (III) takes into account relevant geologic heterogeneities and data quality, and their possible impact on model predictions; (IV) considers the physical and chemical properties of injected and formation fluids; and (V) considers potential migration through known faults, fractures, and artificial penetrations and beyond lateral spill points. (iii) The applicant must provide the name and a description of the model, software, the assumptions used to determine the area of review, and the equations solved. (B) Identification and table of penetrations. The applicant must identify, compile, and submit a table listing all penetrations, including active, inactive, plugged, and unplugged wells and underground mines in the area of review that may penetrate the confining zone, that are known or reasonably discoverable through specialized knowledge or experience. The applicant must provide a description of each penetration's type, construction, date drilled or excavated, location, depth, and record of plugging and/or completion or closure. Examples of specialized knowledge or experience may include reviews of federal, state, and local government records, interviews with past			

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	index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] will be adjusted if there are changes in the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h]; and how [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=71f9684a19b15debb1e25a020a472028&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] access will be guaranteed for future [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h]. (c) [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=85003a7ae8fe56e5eee9420b19f758d6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] or [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0df3b20100d24c91ef2		and present owners, operators, and occupants, reviews of historical information (including aerial photographs, chain of title documents, and land use records), and visual inspections of the facility and adjoining properties. (C) Corrective action. The applicant must demonstrate whether each of the wells on the table of penetrations has or has not been plugged and whether each of the underground mines (if any) on the table of penetrations has or has not been closed in a manner that prevents the movement of injected fluids or displaced formation fluids that may endanger underground sources of drinking water or allow the injected fluids or formation fluids to escape the permitted injection zone. The applicant must perform corrective action on all wells and underground mines in the area of review that are determined to need corrective action. The operator must perform corrective action using materials suitable for use with the CO2 stream. Corrective action may be phased. **(f) Area of review and corrective action**. Notwithstanding the requirement in §5.203(d)(2)(B)(i) to perform a re-evaluation of the AoR, at the frequency specified in the AoR and corrective action plan or permit, the operator of a GS facility also must conduct the following whenever warranted by a material change in the monitoring and/or operational data or in the evaluation of the monitoring and operational data by the operator: (1) a re-evaluation of the AoR by performing all of the actions specified in §5.203(d)(1)(A) - (C) of this title to delineate the AoR and identify all wells that require corrective action; (2) identify all wells in the re-evaluated AoR that require corrective action; (3) perform corrective action on wells requiring corrective action in the re-evaluated AoR in the same manner specified in §5.203(d)(1)(C); and (4) submit an amended AoR and corrective action plan or demonstrate to the director through monitoring data and modeling results that no change to the AoR and corrective action plan is needed.			

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	d3bc3f665d130&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] of Class VI [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] must perform the following actions to delineate the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and identify all [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] that require corrective action: (1) Predict, using existing [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=71f9684a19b15debb1e25a020a472028&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] characterization, monitoring and operational data, and computational modeling, the [HYPERLINK "https://www.law.cornell.edu/definitions/		**(g) Emergency, mitigation, and remedial response.** (1) Plan. The operator must maintain and comply with the approved emergency and remedial response plan required by §5.203(l). The operator must update the plan in accordance with §5.207(a)(2)(D)(vi) (Reporting and Record-Keeping). The operator must make copies of the plan available at the storage facility and at the company headquarters. (D) Annual reports. The operator must submit an annual report detailing: (i) corrective action performed; (ii) new wells installed and the type, location, number, and information required in §5.203(e) of this title (relating to Application Requirements); (iii) re-calculated area of review unless the operator submits a statement signed by an appropriate company official confirming that monitoring and operational data supports the current delineation of the AoR on file with the Commission; (iv) the updated area for which the operator has a good faith claim to the necessary and sufficient property rights to operate the geologic storage facility; (v) tons of CO2 injected; and (vi) The operator must maintain and update required plans in accordance with the provisions of this subchapter. (I) Operators must submit an annual statement, signed by an appropriate company official, confirming that the operator has: (-a-) reviewed the monitoring and operational data that are relevant to a decision on whether to reevaluate the area of review and the monitoring and operational data that are relevant to a decision on whether to update an approved plan required by §5.203 or §5.206 of this title; and (-b-) determined whether any updates were warranted by material change in the monitoring and operational data or in the evaluation of the monitoring and operational data by the operator. (II) Operators must submit either the updated plan or a summary of the modifications for each plan for which an update the operator determined to be warranted pursuant to			

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	index.php?width=840&height=800&iframe=true&def_id=f0e99c55feffd270569fca8b59b8195c&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] lateral and vertical migration of the CO2[HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=4038129041e7a47b0e0930f89ef1bc5b&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=2945ce9a203d84b02648b53f7a688a27&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the subsurface from the commencement of injection activities until the plume [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=53539c980a463e8be88bcb94e543a776&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] ceases, until [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=33aacae66f6b2a319cd009f81038673f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] differentials sufficient to cause the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=53539c980a463e8be88		subclause (I) of this clause. The director may require submission of copies of any updated plans and/or additional information regarding whether or not updates of any particular plans are warranted. (III) The director may require the revision of any required plan whenever the director determines that such a revision is necessary to comply with the requirements of this title. (vii) other information as required by the permit. **§5.203(n) Fees, financial responsibility, and financial assurance**. The applicant must pay the fees, demonstrate that it has met the financial responsibility requirements, and provide the Commission with financial assurance as required under §5.205 (Fees, Financial Responsibility, and Financial Assurance). (1) The applicant must demonstrate financial responsibility and resources for corrective action, injection well plugging, post-injection storage facility care and storage facility closure, and emergency and remedial response until the director has provided to the operator a written verification that the director has determined that the facility has reached the end of the post-injection storage facility care period. **§5.205(c)(2)(E)** The operator of a geologic storage facility must provide to the director annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes to the AOR and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the post-injection storage facility care and closure plan. The operator must provide to the director upon request an adjustment of the cost estimate if the director has reason to believe that the original demonstration is no longer adequate to cover the cost of injection well plugging and post-injection storage facility care and closure.			

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	bcb94e543a776&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] of injected [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0ec521f766979b9479302734271476fa&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] or [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=2945ce9a203d84b02648b53f7a688a27&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] into a [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=f57cf679e499feb7dac98dfc59238f26&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] are no longer present, or until the end of a fixed time period as determined by the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8e845d3a1c20c5c794a0df5b8969c1ca&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h].					

	The model must: (i) Be based on detailed geologic data collected to characterize the injection zone(s), confining zone(s) and any additional zones; and anticipated operating data, including injection pressures, rates, and total volumes over the proposed life of the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=5fb9be1696623392056429b75e7de7e4&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h]; (ii) Take into account any geologic heterogeneities, other discontinuities, data quality, and their possible impact on model predictions; and (iii) Consider potential migration through faults, fractures, and artificial penetrations. (2) Using methods approved by the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8e845d3a1c20c5c794a0df5b8969c1ca&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h], identify all					

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	penetrations, including active and abandoned [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and underground mines, in the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] that may penetrate the confining zone(s). Provide a description of each [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h]'s type, construction, date drilled, location, depth, record of [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=9010107aa74413c00dc1dadf18803039&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and/or completion, and any additional information the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8e845d3a1c20c5c794a0df5b8969c1ca&term_occur=999&term_					

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	src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] may require; and (3) Determine which abandoned [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] have been [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=9010107aa74413c00dc1dadf18803039&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in a manner that prevents the movement of carbon dioxide or other fluids that may endanger USDWs, including use of materials compatible with the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=27ac8590975cb5c2bea63d4b396f8c5f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h].					

	(d) [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=85003a7ae8fe56e5eee9420b19f758d6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] or [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0df3b20100d24c91ef2d3bc3f665d130&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] of Class VI [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] must perform [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] on all [					

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	HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] that are determined to need [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h], using methods designed to prevent the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=53539c980a463e8be88bcb94e543a776&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] of [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0ec521f766979b9479302734271476fa&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] into or between USDWs, including use of materials compatible with the CO2[HYPERLINK "https://www.law.cornell.edu/definitions/					

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	index.php?width=840&height=800&iframe=true&def_id=27ac8590975cb5c2bea63d4b396f8c5f&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h], where appropriate. (e) At the minimum fixed frequency, not to exceed five years, as specified in the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] plan, or when monitoring and operational conditions warrant, [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=85003a7ae8fe56e5eee9420b19f758d6&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] or [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=0df3b20100d24c91ef2d3bc3f665d130&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] must: (1) Reevaluate the [HYPERLINK "https://www.law.cornell.edu/definitions/					

	index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the same manner specified in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "c_1" \h] of this section; (2) Identify all [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the reevaluated [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] that require [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the same manner specified in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "c" \h] of this section; (3) Perform [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_s					

	rc=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] on [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=fc19200126cc5955e16ed671ee5847e9&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] requiring [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the reevaluated [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the same manner specified in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "d" \h] of this section; and (4) Submit an amended [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f21717					

	65a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] plan or demonstrate to the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8e845d3a1c20c5c794a0df5b8969c1ca&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] through monitoring data and modeling results that no amendment to the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] plan is needed. Any amendments to the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] and [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:					

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	146:Subpart:H:146.84" \h] plan must be approved by the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=8e845d3a1c20c5c794a0df5b8969c1ca&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h], must be incorporated into the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=cd618e89d294a86504a364b661f66bbb&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h], and are subject to the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=cd618e89d294a86504a364b661f66bbb&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] modification requirements at [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.39" \h] or [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/144.41" \h] of this chapter, as appropriate. (f) The emergency and remedial response plan (as required by [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.94" \h]) and the demonstration of financial responsibility (as described by [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.85" \h]) must account for the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&ifra					

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	me=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] delineated as specified in [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "c_1" \h] of this section or the most recently evaluated [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] delineated under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "e" \h] of this section, regardless of whether or not [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=e0329dff1485c2f2171765a2e8f360f8&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] in the [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] is phased.					

	(g) All modeling inputs and data used to support [HYPERLINK "https://www.law.cornell.edu/definitions/index.php?width=840&height=800&iframe=true&def_id=47ee30b17bae1f17b9db2e5d9df23960&term_occur=999&term_src=Title:40:Chapter:I:Subchapter:D:Part:146:Subpart:H:146.84" \h] reevaluations under [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/146.84" \l "e" \h] of this section shall be retained for 10 years.					

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
383.	A demonstration, satisfactory to the Director, that the applicant has met the financial responsibility requirements under §146.85;	40 CFR §146.82(a)(14)	**§5.203(n) Fees, financial responsibility, and financial assurance**. The applicant must pay the fees, demonstrate that it has met the financial responsibility requirements, and provide the Commission with financial assurance as required under §5.205 of this title (relating to Fees, Financial Responsibility, and Financial Assurance).			

384.	Proposed testing and monitoring plan required by §146.90; **§ 146.90 Testing and monitoring requirements.** The owner or operator of a Class VI well must prepare, maintain, and comply with a testing and monitoring plan to verify that the geologic sequestration project is operating as permitted and is not endangering USDWs. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The testing and monitoring plan must be submitted with the permit application, for Director approval, and must include a description of how the owner or operator will meet the requirements of this section, including accessing sites for all necessary monitoring and testing during the life of the project. Testing and monitoring associated with geologic sequestration projects must, at a minimum, include: (a) Analysis of the CO2 stream with sufficient frequency to yield data representative of its chemical and physical characteristics; (b) Installation and use, except during well workovers as defined in § 146.88(d), of continuous recording devices to monitor injection pressure, rate, and volume; the pressure on the annulus between the tubing and the long string casing; and the annulus fluid volume added; (c) Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which must be performed on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in § 146.86(b), by: (1) Analyzing coupons of the well construction materials placed in contact with the carbon dioxide stream; or (2) Routing the carbon dioxide stream through a loop constructed with the material used in the well and inspecting the materials in the loop; or (3) Using an alternative method approved by the Director; (d) Periodic monitoring of the ground water quality and geochemical changes above the confining zone(s) that may be a result of carbon dioxide movement through the confining zone(s) or additional identified zones including:	40 CFR §146.82(a)(15)	**§5.203(j) Plan for monitoring, sampling, and testing after initiation of operation.** (1) The applicant must submit a monitoring, sampling, and testing plan for verifying that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone. (2) The plan must include the following: (A) the analysis of the CO2 stream prior to injection with sufficient frequency to yield data representative of its chemical and physical characteristics; (B) the installation and use of continuous recording devices to monitor injection pressure, rate, and volume, and the pressure on the annulus between the tubing and the long string casing, except during workovers; (C) after initiation of injection, the performance on a semi-annual basis of corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion to ensure that the well components meet the minimum standards for material strength and performance set forth in subsection (e)(1)(A) of this section. The operator must report the results of such monitoring annually. Corrosion monitoring may be accomplished by: (i) analyzing coupons of the well construction materials in contact with the CO2 stream; (ii) routing the CO2 stream through a loop constructed with the materials used in the well and inspecting the materials in the loop; or (iii) using an alternative method, materials, or time period approved by the director; (D) monitoring of geochemical and geophysical changes, including: (i) periodic sampling of the fluid temperature, pH, conductivity, reservoir pressure and static fluid level of the injection zone and monitoring for pressure changes, and for changes in geochemistry, in a permeable and porous formation near to and above the top confining zone; (ii) periodic monitoring of the quality and geochemistry of an USDW within the AOR and the formation fluid in a permeable and porous formation near to and above the top confining zone to detect any movement of the			

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	(1) The location and number of monitoring wells based on specific information about the geologic sequestration project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors; and (2) The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected under §146.82(a)(6) and on any modeling results in the AOR evaluation required by § 146.84(c) (e) A demonstration of external mechanical integrity pursuant to § 146.89(c) at least once per year until the injection well is plugged; and, if required by the Director, a casing inspection log pursuant to requirements at §146.89(d) at a frequency established in the testing and monitoring plan; (f) A pressure fall-off test at least once every five years unless more frequent testing is required by the Director based on site-specific information; (g) Testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (e.g., the pressure front) by using: (1) Direct methods in the injection zone(s); and, electrical, gravity, or electromagnetic surveys and/or down-hole CO2 detection tools), unless the Director determines, based on site-specific geology, that such methods are not appropriate; (2) Indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the Director determines, based on site-specific geology, that such methods are not appropriate; (h) The Director may require surface air monitoring and/or soil gas monitoring to detect movement of carbon dioxide that could endanger a USDW. (1) Design of Class VI surface air and/or soil gas monitoring must be based on potential risks to USDWs within the AOR; (2) The monitoring frequency and spatial distribution of surface air monitoring and/or soil gas monitoring must be decided using baseline data, and the monitoring plan must describe how the proposed monitoring will yield useful information on the AOR delineation and/or compliance with standards under § 144.12 of this chapter;		injected CO2 through the confining zone into that monitored formation; (iii) the location and number of monitoring wells justified on the basis of the AOR, injection rate and volume, geology, and the presence of artificial penetrations and other factors specific to the GS facility; and (iv) the monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data collected under subsection (c)(2) of this section and any modeling results in the AOR evaluation; (E) tracking the extent of the CO2 plume and the position of the pressure front by using indirect, geophysical techniques, which may include seismic, electrical, gravity, or electromagnetic surveys and/or down-hole CO2 detection tools; and §5.203(h) Mechanical integrity testing. (1) Criteria. This paragraph establishes the criteria for the mechanical integrity testing plan for anthropogenic CO2 injection wells that an applicant must include in an application. (A) Other than during periods of well workover in which the sealed tubing-casing annulus is of necessity disassembled for maintenance or corrective procedures, the operator must maintain mechanical integrity of the injection well at all times. (B) Before beginning injection operations and at least once every five years thereafter, the operator must demonstrate internal mechanical integrity for each injection well by pressure testing the tubing-casing annulus. (C) Following an initial annulus pressure test, the operator must continuously monitor injection pressure, rate, injected volumes, and pressure on the annulus between tubing and long string casing to confirm that the injected fluids are confined to the injection zone. (D) At least once per year until the injection well is plugged, the operator must confirm the absence of significant fluid movement into a USDW through channels adjacent to the injection wellbore (external integrity) using a method approved by the director (e.g., diagnostic surveys such as oxygen-activation logging or temperature or noise logs). (E) The operator must test injection wells after any workover that disturbs the seal between the tubing, packer, and casing in a manner that verifies internal			

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Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
	(3) If an owner or operator demonstrates that monitoring employed under §§98.440 to 98.449 of this chapter (Clean Air Act, 42 U.S.C. 7401 *et seq.*) accomplishes the goals of paragraphs (h)(1) and (2) of this section, and meets the requirements pursuant to §146.91(c)(5), a Director that requires surface air/soil gas monitoring must approve the use of monitoring employed under §§98.440 to 98.449 of this chapter. Compliance with §§98.440 to 98.449 of this chapter pursuant to this provision is considered a condition of the Class VI permit; (i) Any additional monitoring, as required by the Director, necessary to support, upgrade, and improve computational modeling of the AOR evaluation required under § 146.84(c) and to determine compliance with standards under § 144.12 of this chapter; (j) The owner or operator shall periodically review the testing and monitoring plan to incorporate monitoring data collected under this subpart, operational data collected under § 146.88, and the most recent area of review reevaluation performed under § 146.84(e). In no case shall the owner or operator review the testing and monitoring plan less often than once every five years. Based on this review, the owner or operator shall submit an amended testing and monitoring plan or demonstrate to the Director that no amendment to the testing and monitoring plan is needed. Any amendments to the testing and monitoring plan must be approved by the Director, must be incorporated into the permit, and are subject to the permit modification requirements at §144.39 or §144.41 of this chapter, as appropriate. Amended plans or demonstrations shall be submitted to the Director as follows: (1) Within one year of an AOR reevaluation; (2) Following any significant changes to the facility, such as addition of monitoring wells or newly permitted injection wells within the AOR, on a schedule determined by the Director; or (3) When required by the Director. (k) A quality assurance and surveillance plan for all testing and monitoring requirements.		mechanical integrity of the tubing and long string casing. (F) An operator must either repair and successfully retest or plug a well that fails a mechanical integrity test. (2) Mechanical integrity testing plan. The applicant must prepare and submit a mechanical integrity testing plan as part of a permit application. The performance tests must be designed to demonstrate the internal and external mechanical integrity of each injection well. These tests may include: (A) a pressure test with liquid or inert gas; (B) a tracer survey such as oxygen-activation logging; (C) a temperature or noise log; (D) a casing inspection log; and/or (E) any alternative method approved by the director, and if necessary by the Administrator of EPA under 40 CFR §146.89(e), that provides equivalent or better information approved by the director. (F) additional monitoring as the director may determine to be necessary to support, upgrade, and improve computational modeling of the area of review evaluation and to determine compliance with the requirements that the injection activity not allow the movement of fluid containing any contaminant into USDWs and that the injected fluid remain within the permitted interval.			

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385.	Proposed injection well plugging plan required by §146.92(b)	40 CFR §146.82(a)(16)	**§5.203(k) Well plugging plan**. The applicant must submit a well plugging plan for all injection wells and monitoring wells that penetrate the base of usable quality water that includes the following: (1) a proposal for plugging all monitoring wells that penetrate the base of usable quality water and all injection wells upon abandonment in accordance with §3.14 of this title (relating to Plugging), in addition to the requirements of this section. The proposal must include: (A) the type and number of plugs to be used; (B) the placement of each plug, including the elevation of the top and bottom of each plug; (C) the type, grade, and quantity of material to be used in plugging and information to demonstrate that the material is compatible with the CO2 stream; and (D) the method of placement of the plugs; (2) proposals for activities to be undertaken prior to plugging an injection well, specifically: (A) flushing each injection well with a buffer fluid; (B) performing tests or measures to determine bottomhole reservoir pressure; (C) performing final tests to assess mechanical integrity; and (D) ensuring that the material to be used in plugging must be compatible with 34 the CO2 stream and the formation fluids; (3) a proposal for giving notice of intent to plug monitoring wells that penetrate the base of usable quality water and all injection wells. The applicant's plan must ensure that: (A) the operator notifies the director at least 60 days before plugging a well. At this time, if any changes have been made to the original well plugging plan, the operator must also provide a revised well plugging plan. At the discretion of the director, an operator may be allowed to proceed with well plugging on a shorter notice period; and (B) the operator will file a notice of intention to plug and abandon (Form W-3A) a well with the appropriate Commission district office and the division in Austin at least five days prior to the beginning of plugging operations; (4) a plugging report for monitoring wells that penetrate the base of usable quality water and all injection wells. The applicant's plan must ensure that within 30 days after plugging the operator will file a complete well plugging record (Form W-3) in duplicate with the appropriate district office. The			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			operator and the person who performed the plugging operation (if other than the operator) must certify the report as accurate; (5) a plan for plugging all monitoring wells that do not penetrate the base of usable quality water in accordance with 16 TAC Chapter 76 (relating to Water Well Drillers and Water Well Pump Installers); and (6) a plan for certifying that all monitoring wells that do not penetrate the base of usable quality water will be plugged in accordance with 16 TAC Chapter 76.			

386.	Proposed post-injection site care and site closure plan required by §146.93(a);	40 CFR §146.82(a)(17)	§5.203(m) Post-injection storage facility care and closure plan. The applicant must submit a post-injection storage facility care and closure plan. The plan must include: (1) a demonstration containing substantial evidence that the geologic storage project will no longer pose a risk of endangerment to USDWs at the end of the post-injection storage facility care timeframe. The demonstration must be based on significant, site-specific data and information, including all data and information collected pursuant subsections (b)-(d) of this section and §5.206(b)(5) of this title; (2) the pressure differential between pre-injection and predicted post-injection pressures in the injection zone; (3) the predicted position of the CO2 plume and associated pressure front at closure as demonstrated in the AOR evaluation required under subsection (d) of this section; (4) a description of the proposed post-injection monitoring location, methods, and frequency; (5) a proposed schedule for submitting post-injection storage facility care monitoring results to the division; (6) the estimated cost of proposed post-injection storage facility care and closure; and (7) consideration and documentation of: (i) the results of computational modeling performed pursuant to delineation of the AOR under subsection (d) of this section; (ii) the predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any USDWs, and/or the timeframe for pressure decline to pre-injection pressures; (iii) the predicted rate of CO2 plume migration within the injection zone, and the predicted timeframe for the cessation of migration; (iv) a description of the site-specific processes that will result in CO2 trapping including immobilization by capillary trapping, dissolution, and mineralization at the site; (v) the predicted rate of CO2 trapping in the immobile capillary phase, dissolved phase, and/or mineral phase; (vi) the results of laboratory analyses, research studies, and/or field or site-specific studies to verify the information required in subparagraphs (iv) and (v) of this paragraph;			

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			(vii) a characterization of the confining zone(s) including a demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., CO2, formation fluids) movement; (viii) the presence of potential conduits for fluid movement including planned injection wells and project monitoring wells associated with the proposed geologic storage project or any other projects in proximity to the predicted/modeled, final extent of the CO2 plume and area of elevated pressure; (ix) a description of the well construction and an assessment of the quality of plugs of all abandoned wells within the AOR; (x) the distance between the injection zone and the nearest USDWs above and/or below the injection zone; and (xi) any additional site-specific factors required by the Director; and (8) information submitted to support the demonstration in paragraph (1) of this subsection, which shall meet the following criteria: (i) all analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards; (ii) estimation techniques must be appropriate and EPA-certified test protocols must be used where available; (iii) predictive models must be appropriate and tailored to the site conditions, composition of the CO2 stream, and injection and site conditions over the life of the geologic storage project; (iv) predictive models must be calibrated using existing information where sufficient data are available; (v) reasonably conservative values and modeling assumptions must be used and disclosed to the Director whenever values are estimated on the basis of known, historical information instead of site-specific measurements; (vi) an analysis must be performed to identify and assess aspects of the alternative PISC timeframe demonstration that contribute significantly to uncertainty. The operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration;			

Federal Requirement		Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
			(vii) an approved quality assurance and quality control plan must address all aspects of the demonstration; and (viii) any additional criteria required by the Director.			

387.	At the Director's discretion, a demonstration of an alternative post-injection site care timeframe required by §146.93(c); (c) *Demonstration of alternative postinjection site care timeframe.* At the Director's discretion, the Director may approve, in consultation with EPA, an alternative PISC timeframe other than the 50 year default, if an owner or operator can demonstrate during the permitting process that an alternative PISC timeframe is appropriate and ensures non-endangerment of USDWs. The demonstration must be based on significant, site-specific data and information including all data and information collected pursuant to §§146.82 and 146.83, and must contain substantial evidence that the geologic sequestration project will no longer pose a risk of endangerment to USDWs at the end of the alternative PISC timeframe. (1) A demonstration of an alternative PISC timeframe must include consideration and documentation of: (i) The results of computational modeling performed pursuant to delineation of the AOR under §146.84; (ii) The predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any USDWs; and/or the timeframe for pressure decline to pre-injection pressures; (iii) The predicted rate of CO2 plume migration within the injection zone, and the predicted timeframe for the cessation of migration; (iv) A description of the site-specific processes that will result in CO2 trapping including immobilization by capillary trapping, dissolution, and mineralization at the site; (v) The predicted rate of CO2 trapping in the immobile capillary phase, dissolved phase, and/or mineral phase; (vi) The results of laboratory analyses, research studies, and/or field or site-specific studies to verify the information required in paragraphs (iv) and (v) of this section; (vii) A characterization of the confining zone(s) including a demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., carbon dioxide, formation fluids) movement; (viii) The presence of potential conduits for fluid movement including planned injection wells and project monitoring wells associated with the proposed	40 CFR §146.82(a)(18)	**§5.203(m) Post-injection storage facility care and closure plan.** The applicant must submit a post-injection storage facility care and closure plan. The plan must include: (1) a demonstration containing substantial evidence that the geologic storage project will no longer pose a risk of endangerment to USDWs at the end of the post-injection storage facility care timeframe. The demonstration must be based on significant, site-specific data and information, including all data and information collected pursuant subsections (b)-(d) of this section and §5.206(b)(5) of this title; (2) the pressure differential between pre-injection and predicted post-injection pressures in the injection zone; (3) the predicted position of the CO2 plume and associated pressure front at closure as demonstrated in the AOR evaluation required under subsection (d) of this section; (4) a description of the proposed post-injection monitoring location, methods, and frequency; (5) a proposed schedule for submitting post-injection storage facility care monitoring results to the division; (6) the estimated cost of proposed post-injection storage facility care and closure; and (7) consideration and documentation of: (i) the results of computational modeling performed pursuant to delineation of the AOR under subsection (d) of this section; (ii) the predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any USDWs, and/or the timeframe for pressure decline to pre-injection pressures; (iii) the predicted rate of CO2 plume migration within the injection zone, and the predicted timeframe for the cessation of migration; (iv) a description of the site-specific processes that will result in CO2 trapping including immobilization by capillary trapping, dissolution, and mineralization at the site; (v) the predicted rate of CO2 trapping in the immobile capillary phase, dissolved phase, and/or mineral phase; (vi) the results of laboratory analyses, research studies, and/or field or site specific studies to verify the information required in subparagraphs (iv) and (v) of this paragraph;		State regulations do not include a 50-year default period. All applicants are required to make the demonstration of alternative PISC.	

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	geologic sequestration project or any other projects in proximity to the predicted/modeled, final extent of the carbon dioxide plume and area of elevated pressure; (ix) A description of the well construction and an assessment of the quality of plugs of all abandoned wells within the AOR; (x) The distance between the injection zone and the nearest USDWs above and/or below the injection zone; and (xi) Any additional site-specific factors required by the Director. (2) Information submitted to support the demonstration in paragraph (c)(1) of this section must meet the following criteria: (i) All analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards; (ii) Estimation techniques must be appropriate and EPA-certified test protocols must be used where available; (iii) Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream and injection and site conditions over the life of the geologic sequestration project; (iv) Predictive models must be calibrated using existing information (e.g., at Class I, Class II, or Class V experimental technology well sites) where sufficient data are available; (v) Reasonably conservative values and modeling assumptions must be used and disclosed to the Director whenever values are estimated on the basis of known, historical information instead of site-specific measurements; (vi) An analysis must be performed to identify and assess aspects of the alternative PISC timeframe demonstration that contribute significantly to uncertainty. The owner or operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration. (vii) An approved quality assurance and quality control plan must address all aspects of the demonstration; and, (viii) Any additional criteria required by the Director. (d) *Notice of intent for site closure.* The owner or operator must notify the Director in writing at least 120 days before site closure. At this time, if any changes have been made to the original post-injection site care		(vii) a characterization of the confining zone(s) including a demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., CO2, formation fluids) movement; (viii) the presence of potential conduits for fluid movement including planned injection wells and project monitoring wells associated with the proposed geologic storage project or any other projects in proximity to the predicted/modeled, final extent of the CO2 plume and area of elevated pressure; (ix) a description of the well construction and an assessment of the quality of plugs of all abandoned wells within the AOR; (x) the distance between the injection zone and the nearest USDWs above and/or below the injection zone; and (xi) any additional site-specific factors required by the Director; and (8) information submitted to support the demonstration in paragraph (1) of this subsection, which shall meet the following criteria: (i) all analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards; (ii) estimation techniques must be appropriate and EPA-certified test protocols must be used where available; (iii) predictive models must be appropriate and tailored to the site conditions, composition of the CO2 stream, and injection and site conditions over the life of the geologic storage project; (iv) predictive models must be calibrated using existing information where sufficient data are available; (v) reasonably conservative values and modeling assumptions must be used and disclosed to the Director whenever values are estimated on the basis of known, historical information instead of site-specific measurements; (vi) an analysis must be performed to identify and assess aspects of the alternative PISC timeframe demonstration that contribute significantly to uncertainty. The operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration;			

	and site closure plan, the owner or operator must also provide the revised plan. The Director may allow for a shorter notice period. (e) After the Director has authorized site closure, the owner or operator must plug all monitoring wells in a manner which will not allow movement of injection or formation fluids that endangers a USDW. (f) The owner or operator must submit a site closure report to the Director within 90 days of site closure, which must thereafter be retained at a location designated by the Director for 10 years. The report must include: (1) Documentation of appropriate injection and monitoring well plugging as specified in § 146.92 and paragraph (e) of this section. The owner or operator must provide a copy of a survey plat which has been submitted to the local zoning authority designated by the Director. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to the Regional Administrator of the appropriate EPA Regional Office; (2) Documentation of appropriate notification and information to such State, local and Tribal authorities that have authority over drilling activities to enable such State, local, and Tribal authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zone(s); and (3) Records reflecting the nature, composition, and volume of the carbon dioxide stream. (g) Each owner or operator of a Class VI injection well must record a notation on the deed to the facility property or any other document that is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information: (1) The fact that land has been used to sequester carbon dioxide; (2) The name of the State agency, local authority, and/or Tribe with which the survey plat was filed, as well as the address of the Environmental Protection Agency Regional Office to which it was submitted; and (3) The volume of fluid injected, the injection zone or zones into which it was injected, and the period over which injection occurred. (h) The owner or operator must retain for 10 years following site closure, records collected during the PISC period. The owner or operator must deliver the		(vii) an approved quality assurance and quality control plan must address all aspects of the demonstration; and (viii) any additional criteria required by the Director.			

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	Federal Requirement	Federal Citation	Texas State Citation and Requirement	Different From Federal Requirement?	Texas Notes	EPA Comments
	records to the Director at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Director for that purpose.					
388.	Proposed emergency and remedial response plan required by §146.94(a) As part of the permit application, the owner or operator must provide the Director with an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids that may cause an endangerment to a USDW during construction, operation, and PISC periods. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.	40 CFR §146.82(a)(19)	**§5.203(l)** (l) Emergency and remedial response plan. The applicant must submit an emergency and remedial response plan that: (1) accounts for the entire AOR, regardless of whether or not corrective action in the AOR is phased; (2) describes actions to be taken to address escape from the permitted injection interval or movement of the injection fluids or formation fluids that may cause an endangerment to USDWs during construction, operation, closure, and post-closure periods; (3) includes a safety plan that includes emergency response procedures, provisions to provide security against unauthorized activity, and CO2 release detection and prevention measures; and (4) includes a description of the training and testing that will be provided to each employee at the storage facility on operational safety and emergency response procedures to the extent applicable to the employee's duties and responsibilities. The operator must train all employees before commencing injection and storage operations at the facility. The operator must train each subsequently hired employee before that employee commences work at the storage facility. The operator must hold a safety meeting with each contractor prior to the commencement of any new contract work at a storage facility. Emergency measures specific to the contractor's work must be explained in the contractor safety meeting. Training schedules, training dates, and course outlines must be provided to Commission personnel upon request for the purpose of Commission review to determine compliance with this paragraph.			
389.	A list of contacts, submitted to the Director, for those States, Tribes, and Territories identified to be within the AOR of the Class VI project based on information provided in paragraph (a)(2) of this section; and	40 CFR §146.82(a)(20)	No reference found			

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390.	Any other information requested by the Director.	40 CFR §146.82(a)(21)	**§5.203(p) Other information.** The applicant must submit any other information requested by the director as necessary to discharge the Commission's duties under Texas Water Code, Chapter 27, Subchapter B-1, or deemed necessary by the director to clarify, explain, and support the required attachments.			
391.	The Director shall notify, in writing, any States, Tribes, or Territories within the area of review of the Class VI project based on information provided in paragraphs (a)(2) and (a)(20) of this section of the permit application and pursuant to the requirements at §14 §5.23(f)(13) of this chapter.	40 CFR §146.82(b)	No reference found			

392.	**Prior to granting approval for the operation of a Class VI well, the Director shall consider the following information**:	40 CFR §146.82(c)	**§5.203**			

393.	The final area of review based on modeling, using data obtained during logging and testing of the well and the formation as required by paragraphs (c)(2), (3), (4), (6), (7), and (10) of this section;	40 CFR §146.82(c)(1)	**§5.203(d) Area of review and corrective action**. This subsection describes the standards for the information regarding the delineation of the AOR, the identification of penetrations, and corrective action that an applicant must include in an application. (1) Initial delineation of the AOR and initial corrective action. The applicant must delineate the AOR, identify all wells that require corrective action, and perform corrective action on those wells. Corrective action may be phased. (A) Delineation of area of review. (i) Using computational modeling that considers the volumes and the physical and chemical properties of the injected CO2 stream, the physical properties of the formation into which the CO2 stream is to be injected, and available data including data available from logging, testing, or operation of wells, the applicant must predict the lateral and vertical extent of migration for the CO2 plume and formation fluids and the pressure differentials required to cause movement of injected fluids or formation fluids into an USDW in the subsurface for the following time periods: (I) five years after initiation of injection; (II) from initiation of injection to the end of the injection period proposed by the applicant; and (III) from initiation of injection to 10 years after the end of the injection period proposed by the applicant. (ii) The applicant must use a computational model that: (I) is based on geologic and reservoir engineering information collected to characterize the injection zone and the confining zone; (II) is based on anticipated operating data, including injection pressures, rates, and total volumes over the proposed duration of injection; (III) takes into account relevant geologic heterogeneities and data quality, and their possible impact on model predictions; (IV) considers the physical and chemical properties of injected and formation fluids; and (V) considers potential migration through known faults, fractures, and artificial penetrations and beyond lateral spill points. (iii) The applicant must provide the name and a description of the model, software, the assumptions used to determine the AOR, and the equations solved. (B) Identification and table of penetrations. The applicant must identify, compile, and submit a table listing all penetrations, including active, inactive, plugged, and unplugged wells and underground mines in the AOR that may penetrate the			

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			confining zone, that are known or reasonably discoverable through specialized knowledge or experience. The applicant must provide a description of each penetration's type, construction, date drilled or excavated, location, depth, and record of plugging and/or completion or closure. Examples of specialized knowledge or experience may include reviews of federal, state, and local government records, interviews with past and present owners, operators, and occupants, reviews of historical information (including aerial photographs, chain of title documents, and land use records), and visual inspections of the facility and adjoining properties. (C) Corrective action. The applicant must demonstrate whether each of the wells on the table of penetrations has or has not been plugged and whether each of the underground mines (if any) on the table of penetrations has or has not been closed in a manner that prevents the movement of injected fluids or displaced formation fluids that may endanger USDWs or allow the injected fluids or formation fluids to escape the permitted injection zone. The applicant must perform corrective action on all wells and underground mines in the AOR that are determined to need corrective action. The operator must perform corrective action using materials suitable for use with the CO2 stream. Corrective action may be phased. (2) Area of review and corrective action plan. As part of an application, the applicant must submit an AOR and corrective action plan that includes the following information: (A) the method for delineating the AOR, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based; (B) for the area of review, a description of: (i) the minimum frequency subject to the annual certification pursuant to §5.206(f) (Permit Standards) at which the applicant proposes to re-evaluate the area of review during the life of the GS facility; (ii) how monitoring and operational data will be used to re-evaluate the AOR; and (iii) the monitoring and operational conditions that would warrant a re-evaluation of the AOR prior to the next scheduled re-evaluation; and (C) a corrective action plan that describes: (i) how the corrective action will be conducted; (ii) how corrective action will be adjusted if there are changes in the AOR; (iii) if a phased corrective action is planned, how the phasing will be determined; and (iv) how site access will be secured for future corrective action.			

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394.	Any relevant updates, based on data obtained during logging and testing of the well and the formation as required by paragraphs (c)(3), (4), (6), (7), and (10) of this section, to the information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, submitted to satisfy the requirements of paragraph (a)(3) of this section;	40 CFR §146.82(c)(2)	**(f) Plan for logging, sampling, and testing of injection wells after permitting but before injection**. The applicant must submit a plan for logging, sampling, and testing of each injection well after permitting but prior to injection well operation. The plan need not include identical logging, sampling, and testing procedures for all wells provided there is a reasonable basis for different procedures. Such plan is not necessary for existing wells being converted to anthropogenic CO2 injection wells in accordance with this subchapter, to the extent such activities already have taken place. The plan must describe the logs, surveys, and tests to be conducted to verify the depth, thickness, porosity, permeability, and lithology of, and the salinity of any formation fluids in, the formations that are to be used for monitoring, storage, and confinement to assure conformance with the injection well construction requirements set forth in subsection (e) of this section, and to establish accurate baseline data against which future measurements may be compared. The plan must meet the following criteria and must include the following information. (2) Testing and determination of hydrogeologic characteristics of injection and confining zone. (A) Prior to operation, the operator must conduct tests to verify hydrogeologic characteristics of the injection zone. (B) The operator must perform an initial pressure fall-off or other test and submit to the director a written report of the results of the test, including details of the methods used to perform the test and to interpret the results, all necessary graphs, and the testing log, to verify permeability, injectivity, and initial pressure using water or CO2. (C) The operator must determine or calculate the fracture pressures for the injection and confining zone. If the fracture pressures are determined through calculation, the Commission will include in any permit it might issue a limit of 90% of the calculated fracture pressure to ensure that the injection pressure does not exceed the fracture pressure. (3) Sampling. (A) The operator must record and submit the formation fluid temperature, pH, and conductivity, the reservoir pressure, and the static fluid level of the injection zone. (B) The operator must submit analyses of whole cores or sidewall cores representative of the injection zone and confining zone and formation fluid samples from the injection zone. The director may accept data from cores and formation fluid samples from nearby wells or other data if the operator can demonstrate to the director that such data are representative of conditions at the proposed injection well.			

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395.	Information on the compatibility of the CO2 stream with fluids in the injection zone(s) and minerals in both the injection and the confining zone(s), based on the results of the formation testing program, and with the materials used to construct the well;	40 CFR §146.82(c)(3)	**§5.203(g) Compatibility determination**. Based on the results of the formation testing program required by subsection (f) of this section, the applicant must submit a determination of the compatibility of the CO2 stream with: (1) the materials to be used to construct the well; (2) fluids in the injection zone; and (3) minerals in both the injection and the confining zone.			
396.	The results of the formation testing program required at paragraph (a)(8) of this section;	40 CFR §146.82(c)(4)	**§5.203(c)(2)**(F) a description of the formation testing program used and the analytical results used to determine the chemical and physical characteristics of the injection zone and the confining zone;			
397.	Final injection well construction procedures that meet the requirements of §146.86;	40 CFR §146.82(c)(5)	**§5.206(b) Injection well construction.** (1) Construction of anthropogenic CO2 injection wells must meet the criteria in §5.203(e) of this title. (2) Within 30 days after the completion or conversion of an injection well subject to this subchapter, the operator must file with the division a complete record of the well on the appropriate form showing the current completion.			
398.	The status of corrective action on wells in the area of review;	40 CFR §146.82(c)(6)	**§5.207(a)(2)(D)** Annual reports. The operator must submit an annual report detailing: (i) corrective action performed;			
399.	All available logging and testing program data on the well required by §146.87;	40 CFR §146.82(c)(7)	**§5.203(a)(4) (4)** Reports. An applicant must ensure that all descriptive reports are prepared by a qualified and knowledgeable person and include an interpretation of the results of all logs, surveys, sampling, and tests required in this subchapter. The applicant must include in the application a quality assurance and surveillance plan for all testing and monitoring, which includes, at a minimum, validation of the analytical laboratory data, calibration of field instruments, and an explanation of the sampling and data acquisition techniques.			
400.	A demonstration of mechanical integrity pursuant to §146.89;	40 CFR §146.82(c)(8)	**§5.203(h)(B)** Before beginning injection operations and at least once every five years thereafter, the operator must demonstrate internal mechanical integrity for each injection well by pressure testing the tubing-casing annulus.			
401.	Any updates to the proposed AOR and corrective action plan, testing and monitoring plan, injection well plugging plan, post-injection site care and site closure plan, or the emergency and remedial response plan submitted under paragraph (a) of this section, which are necessary to address new information collected during logging and testing of the well and the formation as required by all paragraphs of this section, and any updates to the alternative post-injection site care timeframe demonstration submitted under paragraph (a) of this section, which are necessary to address new information collected during the logging and testing of the well and the formation as required by all paragraphs of this section; and	40 CFR §146.82(c)(9)	§5.203(f) Plan for logging, sampling, and testing of injection wells after permitting but before injection.			
402.	Any other information requested by the Director.	40 CFR §146.82(c)(10)	**§5.203(p)**			

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403.	Owners or operators seeking a waiver of the requirement to inject below the lowermost USDW must also refer to §146.95 and submit a supplemental report, as required at §146.95(a). The supplemental report is not part of the permit application.	40 CFR §146.82(d)	**§5.201(f) Injection depth waiver.** An operator may seek a waiver from the Class VI injection depth requirements for geologic storage to allow injection into non-USDW formations while ensuring that USDWs above and below the injection zone are protected from endangerment. An operator seeking a waiver of the requirement to inject below the lowermost USDW shall submit, concurrent with the permit application, a supplemental report that complies with 40 CFR §146.95. The Commission adopts 40 CFR §146.95 by reference, effective July 1, 2022.			
40 CFR §146.83 Minimum criteria for siting.						
404.	Owners or operators of Class VI wells must demonstrate to the satisfaction of the Director that the wells will be sited in areas with a suitable geologic system. The owners or operators must demonstrate that the geologic system comprises:	40 CFR §146.83(a)	**§5.206(a) General criteria**. The director may issue a permit under this subchapter if the applicant demonstrates and the director finds that: (5) the geologic storage facility will be sited in an area with suitable geology, which at a minimum must include: (A) an injection zone of sufficient areal extent, thickness, porosity, and permeability to receive the total anticipated volume of the CO2 stream; and			
405.	An injection zone(s) of sufficient areal extent, thickness, porosity, and permeability to receive the total anticipated volume of the carbon dioxide stream;	40 CFR §146.83(a)(1)				
406.	Confining zone(s) free of transmissive faults or fractures and of sufficient areal extent and integrity to contain the injected carbon dioxide stream and displaced formation fluids and allow injection at proposed maximum pressures and volumes without initiating or propagating fractures in the confining zone(s).	40 CFR §146.83(a)(2)	§5.206(a)(5)(B) a confining zone(s) that is laterally continuous and free of known transecting transmissive faults or fractures over an area sufficient to contain the injected CO2 stream and displaced formation fluids and allow injection at proposed maximum pressures and volumes without compromising the confining zone or causing the movement of fluids that endangers USDWs;			
407.	The Director may require owners or operators of Class VI wells to identify and characterize additional zones that will impede vertical fluid movement, are free of faults and fractures that may interfere with containment, allow for pressure dissipation, and provide additional opportunities for monitoring, mitigation, and remediation.	40 CFR §146.83(b)		Optional		

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40 CFR §146.84 Area of review and corrective action.						
408.	The AOR is the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The AOR is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected CO2 stream and is based on available site characterization, monitoring, and operational data.	40 CFR §146.84(a)	§5.201(5) Area of review (AOR)--The subsurface three-dimensional extent of the CO2 stream plume and the associated pressure front, as well as the overlying formations, any USDWs overlying an injection zone along with any intervening formations, and the surface area above that delineated region.			

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409.	The owner or operator of a Class VI well must prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic sequestration project, periodically reevaluate the delineation, and perform corrective action that meets the requirements of this section and is acceptable to the Director. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. As a part of the permit application for approval by the Director, the owner or operator must submit an area of review and corrective action plan that includes the following information:	40 CFR §146.84(b)	**§5.203(d) Area of review and corrective action**. This subsection describes the standards for the information regarding the delineation of the area of review, the identification of penetrations, and corrective action that an applicant must include in an application. (1) Initial delineation of the area of review and initial corrective action. The applicant must delineate the area of review, identify all wells that require corrective action, and perform corrective action on those wells. Corrective action may be phased. (A) Delineation of area of review. (i) Using computational modeling that considers the volumes and the physical and chemical properties of the injected CO2 stream, the physical properties of the formation into which the CO2 stream is to be injected, and available data including data available from logging, testing, or operation of wells, the applicant must predict the lateral and vertical extent of migration for the CO2 plume and formation fluids and the pressure differentials required to cause movement of injected fluids or formation fluids into an USDW in the subsurface for the following time periods: (I) five years after initiation of injection; (II) from initiation of injection to the end of the injection period proposed by the applicant; and (III) from initiation of injection to 10 years after the end of the injection period proposed by the applicant. (ii) The applicant must use a computational model that: (I) is based on geologic and reservoir engineering information collected to characterize the injection zone and the confining zone; (II) is based on anticipated operating data, including injection pressures, rates, and total volumes over the proposed duration of injection; (III) takes into account relevant geologic heterogeneities and data quality, and their possible impact on model predictions; (IV) considers the physical and chemical properties of injected and formation fluids; and (V) considers potential migration through known faults, fractures, and artificial penetrations and beyond lateral spill points. (iii) The applicant must provide the name and a description of the model, software, the assumptions used to determine the area of review, and the equations solved.			

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410.	The method for delineating the area of review that meets the requirements of paragraph (c) of this section, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;	40 CFR §146.84(b)(1)	§5.203(d)(2) Area of review and corrective action plan. As part of an application, the applicant must submit an area of review and corrective action plan that includes the following information: (A) the method for delineating the area of review, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;			
411.	A description of:	40 CFR §146.84(b)(2)	**§5.203(d)**			
412.	The minimum fixed frequency, not to exceed five years, at which the owner or operator proposes to reevaluate the area of review;	40 CFR §146.84(b)(2)(i)	§5.203(d)(2) Area of review and corrective action plan. As part of an application, the applicant must submit an area of review and corrective action plan that includes the following information: (B) for the area of review, a description of: (i) the minimum frequency subject to the annual certification pursuant to §5.206(f) (Permit Standards) at which the applicant proposes to re-evaluate the area of review during the life of the geologic storage facility;			
413.	The monitoring and operational conditions that would warrant a reevaluation of the area of review prior to the next scheduled reevaluation as determined by the minimum fixed frequency established in paragraph (b)(2)(i) of this section.	40 CFR §146.84(b)(2)(ii)	§5.203(d)(2)(B)(iii) the monitoring and operational conditions that would warrant a re-evaluation of the area of review prior to the next scheduled re-evaluation; and			
414.	How monitoring and operational data (e.g., injection rate and pressure) will be used to inform an area of review reevaluation; and	40 CFR §146.84(b)(2)(iii)	§5.203(d)(2)(B)(ii) how monitoring and operational data will be used to re-evaluate the AOR;			
415.	How corrective action will be conducted to meet the requirements of paragraph (d) of this section, including what corrective action will be performed prior to injection and what, if any, portions of the area of review will have corrective action addressed on a phased basis and how the phasing will be determined; how corrective action will be adjusted if there are changes in the area of review; and how site access will be guaranteed for future corrective action.	40 CFR §146.84(b)(2)(iv)	§5.203(d)(2)(C) a corrective action plan that describes: (i) how the corrective action will be conducted; (ii) how corrective action will be adjusted if there are changes in the area of review; (iii) if a phased corrective action is planned, how the phasing will be determined; and (iv) how site access will be secured for future corrective action.			
416.	Owners or operators of Class VI wells must perform the following actions to delineate the AOR and identify all wells that require corrective action:	40 CFR §146.84(c)	**§5.203 (d)(1)**			
417.	Predict, using existing site characterization, monitoring and operational data, and computational modeling, the projected lateral and vertical migration of the carbon dioxide plume and formation fluids in the subsurface from the commencement of injection activities until the plume movement ceases, until pressure differentials sufficient to cause the movement of injected fluids or formation fluids into a USDW are no longer present, or until the end of a fixed time period as determined by the Director. The model must:	40 CFR §146.84(c)(1)	**§5.203(d) Area of review and corrective action**.			

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418.	Be based on detailed geologic data collected to characterize the injection zone(s), confining zone(s) and any additional zones; and anticipated operating data, including injection pressures, rates, and total volumes over the proposed life of the geologic sequestration project;	40 CFR §146.84(c)(1)(i)	**§5.203(d)(1)(A)(ii)** The applicant must use a computational model that: (I) is based on geologic and reservoir engineering information collected to characterize the injection zone and the confining zone; (II) is based on anticipated operating data, including injection pressures, rates, and total volumes over the proposed duration of injection;			
419.	Take into account any geologic heterogeneities, other discontinuities, data quality, and their possible impact on model predictions; and	40 CFR §146.84(c)(1)(ii)	**§5.203(d)(1)(A)(ii)(III)** takes into account relevant geologic heterogeneities and data quality, and their possible impact on model predictions;			
420.	Consider potential migration through faults, fractures, and artificial penetrations.	40 CFR §146.84(c)(1)(iii)	**§5.203(d)(1)(A)(ii)(IV)** considers the physical and chemical properties of injected and formation fluids; and **§5.203(d)(1)(A)(ii)(V)** considers potential migration through known faults, fractures, and artificial penetrations and beyond lateral spill points.			
421.	Using methods approved by the Director, identify all penetrations, including active and abandoned wells and underground mines, in the area of review that may penetrate the confining zone(s). Provide a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require; and	40 CFR §146.84(c)(2)	**§5.203(d)(1)(B)** Identification and table of penetrations. The applicant must identify, compile, and submit a table listing all penetrations, including active, inactive, plugged, and unplugged wells and underground mines in the AOR that may penetrate the confining zone, that are known or reasonably discoverable through specialized knowledge or experience. The applicant must provide a description of each penetration's type, construction, date drilled or excavated, location, depth, and record of plugging and/or completion or closure.			
422.	Determine which abandoned wells in the area of review have been plugged in a manner that prevents the movement of carbon dioxide or other fluids that may endanger USDWs, including use of materials compatible with the carbon dioxide stream.	40 CFR §146.84(c)(3)	**§5.203(d)(1)(C)** Corrective action. The applicant must demonstrate whether each of the wells on the table of penetrations has or has not been plugged and whether each of the underground mines (if any) on the table of penetrations has or has not been closed in a manner that prevents the movement of injected fluids or displaced formation fluids that may endanger USDWs or allow the injected fluids or formation fluids to escape the permitted injection zone.			
423.	Owners or operators of Class VI wells must perform corrective action on all wells in the area of review that are determined to need corrective action, using methods designed to prevent the movement of fluid into or between USDWs, including use of materials compatible with the carbon dioxide stream, where appropriate.	40 CFR §146.84(d)	**§5.203(d)(1)(C)** The applicant must perform corrective action on all wells and underground mines in the area of review that are determined to need corrective action. The operator must perform corrective action using materials suitable for use with the CO2 stream. Corrective action may be phased.			

424.	At the minimum fixed frequency, not to exceed five years, as specified in the area of review and corrective action plan, or when monitoring and operational conditions warrant, owners or operators must:	40 CFR §146.84(e)	§5.206(g) Area of review and corrective action. Notwithstanding the requirement in §5.203(d)(2)(B)(i) of this title to perform a re-evaluation of the AOR, at the frequency specified in the AOR and corrective action plan or permit, the operator of a geologic storage facility also must conduct the following whenever warranted by a material change in the monitoring and/or operational data or in the evaluation of the monitoring and operational data by the operator: (1) a re-evaluation of the AOR by performing all of the actions specified in §5.203(d)(1)(A) - (C) of this title to delineate the AOR and identify all wells that require corrective action; (2) identify all wells in the re-evaluated AOR that require corrective action; (3) perform corrective action on wells requiring corrective action in the re-evaluated AOR in the same manner specified in §5.203(d)(1)(C) of this title; and (4) submit an amended AOR and corrective action plan or demonstrate to the director through monitoring data and modeling results that no change to the AOR and corrective action plan is needed.			
425.	Reevaluate the area of review in the same manner specified in paragraph (c)(1) of this section;	40 CFR §146.84(e)(1)	**§5.206(g)**			
426.	Identify all wells in the reevaluated area of review that require corrective action in the same manner specified in paragraph (c) of this section;	40 CFR §146.84(e)(2)	**§5.203 (d)(1)** Initial delineation of the area of review and initial corrective action. The applicant must delineate the area of review, identify all wells that require corrective action, and perform corrective action on those wells. Corrective action may be phased.			
427.	Perform corrective action on wells requiring corrective action in the reevaluated area of review in the same manner specified in paragraph (d) of this section; and	40 CFR §146.84(e)(3)	**§5.206 (f)(3)** perform corrective action on wells requiring corrective action in the re-evaluated area of review in the same manner specified in §5.203(d)(1)(C) of this title; and			
428.	Submit an amended area of review and corrective action plan or demonstrate to the Director through monitoring data and modeling results that no amendment to the AOR and corrective action plan is needed. Any amendments to the area of review and corrective action plan must be approved by the Director, must be incorporated into the permit, and are subject to the permit modification requirements at §§144.39 or 144.41 of this chapter, as appropriate.	40 CFR §146.84(e)(4)	**§5.206 (f)(4)** submit an amended area of review and corrective action plan or demonstrate to the director through monitoring data and modeling results that no change to the area of review and corrective action plan is needed.			
429.	The emergency and remedial response plan (as required by §146.94) and the demonstration of financial responsibility (as described by §146.85) must account for the area of review delineated as specified in paragraph (c)(1) of this section or the most recently evaluated area of review delineated under paragraph (e) of this section, regardless of whether or not corrective action in the area of review is phased.	40 CFR §146.84(f)	**§5.203 (l)(1)**			

430.	All modeling inputs and data used to support AOR reevaluations under paragraph (e) of this section shall be retained for 10 years.	40 CFR §146.84(g)	§5.207(e) Record retention. The operator must retain all wellhead pressure records, metering records, and integrity test results for at least 10 years. The operator must retain all documentation of good faith claim to necessary and sufficient property rights to operate the geologic storage facility until the director issues the final certificate of closure in accordance with §5.206(k)(7) of this title.			
40 CFR §146.85 Financial responsibility.						
431.	The owner or operator must demonstrate and maintain financial responsibility as determined by the Director that meets the following conditions:	40 CFR §146.85(a)	**§5.205 Fees, Financial Responsibility, and Financial Assurance**			
432.	The financial responsibility instrument(s) used must be from the following list of qualifying instruments:	40 CFR §146.85(a)(1)	**§5.205 (c)(2)(A)(ii)**			
433.	Trust Funds	40 CFR §146.85(a)(1)(i)	**§5.205 (c)(2)(A)(ii)**			
434.	Surety Bonds	40 CFR §146.85(a)(1)(ii)	**§5.**205(c)			
435.	Letter of Credit	40 CFR §146.85(a)(1)(iii)	**§5.**205(c)			
436.	Insurance	40 CFR §146.85(a)(1)(iv)	No reference found			
437.	Self Insurance (i.e., Financial Test and Corporate Guarantee)	40 CFR §146.85(a)(1)(v)	No reference found			
438.	Escrow Account	40 CFR §146.85(a)(1)(vi)	No reference found			
439.	Any other instrument(s) satisfactory to the Director	40 CFR §146.85(a)(1)(vii)	No reference found			
440.	The qualifying instrument(s) must be sufficient to cover the cost of:	40 CFR §146.85(a)(2)	**§5.205(c)(2)(C)** The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements:			
441.	Corrective action (that meets the requirements of §146.84);	40 CFR §146.85(a)(2)(i)	**§5.205(c)(2)(C)(i)** The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, post-injection monitoring and site care, and closure of the geologic storage facility, exclusive of plugging costs for any well or wells at the facility, at any time during the permit term in accordance with all applicable state laws, Commission rules and orders, and the permit;			

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442.	Injection well plugging (that meets the requirements of §146.92);	40 CFR §146.85(a)(2)(ii)	**§5.205(c)**(1) Injection and monitoring wells. The operator must comply with the requirements of §3.78 of this title for all monitoring wells that penetrate the base of usable quality water and all injection wells. **§5.205(c)(2)(C)(iii)** The Commission may use the proceeds of financial assurance filed under this subsection to pay the costs of plugging any well or wells at the facility if the financial assurance for plugging costs filed with the Commission is insufficient to pay for the plugging of such well or wells.			
443.	Post injection site care and site closure (that meets the requirements of §146.93); and	40 CFR §146.85(a)(2)(iii)	**§5.205(c)(2)(C)** The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements: (i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, post-injection monitoring and site care, and closure of the geologic storage facility, exclusive of plugging costs for any well or wells at the facility, at any time during the permit term in accordance with all applicable state laws, Commission rules and orders, and the permit;			
444.	Emergency and remedial response (that meets the requirements of §146.94).	40 CFR §146.85(a)(2)(iv)	**§5.205(c)(2)(C)** The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements: (i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, post-injection monitoring and site care, and closure of the geologic storage facility, exclusive of plugging costs for any well or wells at the facility, at any time during the permit term in accordance with all applicable state laws, Commission rules and orders, and the permit;			
445.	The financial responsibility instrument(s) must be sufficient to address endangerment of underground sources of drinking water.	40 CFR §146.85(a)(3)	**§5.205(c)(2)(C)** The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements: (i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, post-injection monitoring and site care, and closure of the geologic storage facility, exclusive of plugging costs for any well or wells at the facility, at any time during the permit term in accordance with all applicable state laws, Commission rules and orders, and the permit;		State law and RRC regulations require protection against endangerment of USDWs	

446.	The qualifying financial responsibility instrument(s) must comprise protective conditions of coverage.	40 CFR §146.85(a)(4)	No reference found			
447.	Protective conditions of coverage must include at a minimum cancellation, renewal, and continuation provisions, specifications on when the provider becomes liable following a notice of cancellation if there is a failure to renew with a new qualifying financial instrument, and requirements for the provider to meet a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable.	40 CFR §146.85(a)(4)(i)	**§5.205(c)(2)(D)** Bonds and letters of credit filed in satisfaction of the financial assurance requirements for a geologic storage facility must comply with the following standards as to issuer and form. (i) The issuer of any geologic storage facility bond filed in satisfaction of the requirements of this subsection must be a corporate surety authorized to do business in Texas. The form of bond filed under this subsection must provide that the bond be renewed and continued in effect until the conditions of the bond have been met or its release is authorized by the director. (ii) Any letter of credit filed in satisfaction of the requirements of this subsection must be issued by and drawn on a bank authorized under state or federal law to operate in Texas. The letter of credit must be an irrevocable, standby letter of credit subject to the requirements of Texas Business and Commerce Code, § §5.101 - §5.118. The letter of credit must provide that it will be renewed and continued in effect until the conditions of the letter of credit have been met or its release is authorized by the director.			
448.	Cancellation – for purposes of this part, an owner or operator must provide that their financial mechanism may not cancel, terminate or fail to renew except for failure to pay such financial instrument. If there is a failure to pay the financial instrument, the financial institution may elect to cancel, terminate, or fail to renew the instrument by sending notice by certified mail to the owner or operator and the Director. The cancellation must not be final for 120 days after receipt of cancellation notice. The owner or operator must provide an alternate financial responsibility demonstration within 60 days of notice of cancellation, and if an alternate financial responsibility demonstration is not acceptable (or possible), any funds from the instrument being cancelled must be released within 60 days of notification by the Director.	40 CFR §146.85(a)(4)(i)(A)	**§5.205(c)(2)(D)** Bonds and letters of credit filed in satisfaction of the financial assurance requirements for a geologic storage facility must comply with the following standards as to issuer and form. (i) The issuer of any geologic storage facility bond filed in satisfaction of the requirements of this subsection must be a corporate surety authorized to do business in Texas. The form of bond filed under this subsection must provide that the bond be renewed and continued in effect until the conditions of the bond have been met or its release is authorized by the director. (ii) Any letter of credit filed in satisfaction of the requirements of this subsection must be issued by and drawn on a bank authorized under state or federal law to operate in Texas. The letter of credit must be an irrevocable, standby letter of credit subject to the requirements of Texas Business and Commerce Code §5.101 - §5.118. The letter of credit must provide that it will be renewed and continued in effect until the conditions of the letter of credit have been met or its release is authorized by the director.			

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449.	Renewal – for purposes of this part, owners or operators must renew all financial instruments, if an instrument expires, for the entire term of the geologic sequestration project. The instrument may be automatically renewed as long as the owner or operator has the option of renewal at the face amount of the expiring instrument. The automatic renewal of the instrument must, at a minimum, provide the holder with the option of renewal at the face amount of the expiring financial instrument.	40 CFR §146.85(a)(4)(i)(B)	**§5.205(c)(2)(D)** Bonds and letters of credit filed in satisfaction of the financial assurance requirements for a geologic storage facility must comply with the following standards as to issuer and form. (i) The issuer of any geologic storage facility bond filed in satisfaction of the requirements of this subsection must be a corporate surety authorized to do business in Texas. The form of bond filed under this subsection must provide that the bond be renewed and continued in effect until the conditions of the bond have been met or its release is authorized by the director. (ii) Any letter of credit filed in satisfaction of the requirements of this subsection must be issued by and drawn on a bank authorized under state or federal law to operate in Texas. The letter of credit must be an irrevocable, standby letter of credit subject to the requirements of Texas Business and Commerce Code, § §5.101 - §5.118. The letter of credit must provide that it will be renewed and continued in effect until the conditions of the letter of credit have been met or its release is authorized by the director.			
450.	Cancellation, termination, or failure to renew may not occur and the financial instrument will remain in full force and effect in the event that on or before the date of expiration: the Director deems the facility abandoned; or the permit is terminated or revoked or a new permit is denied; or closure is ordered by the Director or a U.S. district court or other court of competent jurisdiction; or the owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or the amount due is paid.	40 CFR §146.85(a)(4)(i)(C)	**§5.205(c)(2)(D)** Bonds and letters of credit filed in satisfaction of the financial assurance requirements for a geologic storage facility must comply with the following standards as to issuer and form. (i) The issuer of any geologic storage facility bond filed in satisfaction of the requirements of this subsection must be a corporate surety authorized to do business in Texas. The form of bond filed under this subsection must provide that the bond be renewed and continued in effect until the conditions of the bond have been met or its release is authorized by the director. (ii) Any letter of credit filed in satisfaction of the requirements of this subsection must be issued by and drawn on a bank authorized under state or federal law to operate in Texas. The letter of credit must be an irrevocable, standby letter of credit subject to the requirements of Texas Business and Commerce Code, §5.101 - §5.118. The letter of credit must provide that it will be renewed and continued in effect until the conditions of the letter of credit have been met or its release is authorized by the director.			
451.	The qualifying financial responsibility instrument(s) must be approved by the Director.	40 CFR §146.85(a)(5)	**§5.205(c)**			
452.	The Director shall consider and approve the financial responsibility demonstration for all the phases of the geologic sequestration project prior to issue a Class VI permit (§146.82).	40 CFR §146.85(a)(5)(i)	**§5.205(c)(2)(B)** A geologic storage facility may not receive CO2 until a bond or letter of credit in an amount approved by the director under this subsection and meeting the requirements of this subsection as to form and issuer has been filed with and approved by the director.			

453.	The owner or operator must provide any updated information related to their financial responsibility instrument(s) on an annual basis and if there are any changes, the Director must evaluate, within a reasonable time, the financial responsibility demonstration to confirm that the instrument(s) used remain adequate for use. The owner or operator must maintain financial responsibility requirements regardless of the status of the Director's review of the financial responsibility demonstration.	40 CFR §146.85(a)(5)(ii)	**§5.205(c)(2)(E)** The operator of a geologic storage facility must provide to the director annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes to the area of review and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the post-injection storage facility care and closure plan. The operator must provide to the director upon request an adjustment of the cost estimate if the director has reason to believe that the original demonstration is no longer adequate to cover the cost of injection well plugging and post-injection storage facility care and closure.			
454.	The Director may disapprove the use of a financial instrument if he determines that it is not sufficient to meet the requirements of this section.	40 CFR §146.85(a)(5)(iii)	No reference found		No permit will be issued if the applicant does not propose the use of a financial instrument determined to be insufficient.	
455.	The owner or operator may demonstrate financial responsibility by using one or multiple qualifying financial instruments for specific phases of the geologic sequestration project.	40 CFR §146.85(a)(6)	No reference found.			
456.	In the event that the owner or operator combines more than one instrument for a specific geologic sequestration phase (e.g., well plugging), such combination must be limited to instruments that are not based on financial strength or performance (i.e., self insurance or performance bond), for example trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, escrow account, and insurance. In this case, it is the combination of mechanisms, rather than the single mechanism, which must provide financial responsibility for an amount at least equal to the current cost estimate.	40 CFR §146.85(a)(6)(i)	No reference found			
457.	When using a third-party instrument to demonstrate financial responsibility, the owner or operator must provide a proof that the third-party providers either have passed financial strength requirements based on credit ratings; or has met a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable.	40 CFR §146.85(a)(6)(ii)	No reference found			
458.	An owner or operator using certain types of third party instruments must establish a standby trust to enable EPA to be party to the financial responsibility agreement without EPA being the beneficiary of any funds. The standby trust fund must be used along with other financial responsibility instruments (e.g., surety bonds, letters of credit, or escrow accounts) to provide a location to place funds if needed.	40 CFR §146.85(a)(6)(iii)	No reference found			

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459.	An owner or operator may deposit money to an escrow account to cover financial responsibility requirements; this account must segregate funds sufficient to cover estimated costs for Class VI (geologic sequestration) financial responsibility from other accounts and uses.	40 CFR §146.85(a)(6)(iv)	No reference found			
460.	An owner or operator or its guarantor may use self insurance to demonstrate financial responsibility for geologic sequestration projects. In order to satisfy this requirement the owner or operator must meet a Tangible Net Worth of an amount approved by the Director, have a Net working capital and tangible net worth each at least six times the sum of the current well plugging, post injection site care and site closure cost, have assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current well plugging, post injection site care and site closure cost, and must submit a report of its bond rating and financial information annually. In addition the owner or operator must either: have a bond rating test of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or meet all of the following five financial ratio thresholds: a ratio of total liabilities to net worth less than 2.0; a ratio of current assets to current liabilities greater than 1.5; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; a ratio of current assets minus current liabilities to total assets greater than -0.1; and a net profit (revenues minus expenses) greater than 0.	40 CFR §146.85(a)(6)(v)	Not an option			
461.	An owner or operator who is not able to meet corporate financial test criteria may arrange a corporate guarantee by demonstrating that its corporate parent meets the financial test requirements on its behalf. The parent's demonstration that it meets the financial test requirement is insufficient if it has not also guaranteed to fulfill the obligations for the owner or operator.	40 CFR §146.85(a)(6)(vi)	Not an option			
462.	An owner or operator may obtain an insurance policy to cover the estimated costs of geologic sequestration activities requiring financial responsibility. This insurance policy must be obtained from a third party provider.	40 CFR §146.85(a)(6)(vii)	Not an option			
463.	The requirement to maintain adequate financial responsibility and resources is directly enforceable regardless of whether the requirement is a condition of the permit.	40 CFR §146.85(b)	§5.206. Permit Standards. (a) Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this chapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.			
464.	The owner or operator must maintain financial responsibility and resources until:	40 CFR §146.85(b)(1)				

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465.	The Director receives and approves the completed post-injection site care and site closure plan; and	40 CFR §146.85(b)(1)(i)	§5.205(b) Financial responsibility. (1) A person to whom a permit is issued under this subchapter must provide annually to the director evidence of financial responsibility that is satisfactory to the director. The operator must demonstrate and maintain financial responsibility and resources for corrective action, injection well plugging, post-injection storage facility care and storage facility closure, and emergency and remedial response until the director has provided written verification that the director has determined that the facility has reached the end of the post-injection storage facility care period.			
466.	The Director approves site closure.	40 CFR §146.85(b)(1)(ii)	§5.205(b)(1)			

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467.	The owner or operator may be released from a financial instrument in the following circumstances:	40 CFR §146.85(b)(2)	**§5.206(j)(3)** Prior to closure. Prior to authorization for storage facility closure, the operator must demonstrate to the director, based on monitoring, other site-specific data, and modeling that is reasonably consistent with site performance that no additional monitoring is needed to assure that the GS facility will not endanger USDWs. The operator must demonstrate, based on the current understanding of the site, including monitoring data and/or modeling, all of the following: (A) the estimated magnitude and extent of the facility footprint (the CO2 plume and the area of elevated pressure); (B) that there is no leakage of either CO2 or displaced formation fluids that will endanger underground sources of drinking water; (C) that the injected or displaced fluids are not expected to migrate in the future in a manner that encounters a potential leakage pathway into USDWs; (D) that the injection wells at the site completed into or through the injection zone or confining zone will be plugged and abandoned in accordance with these requirements; and (E) any remaining facility monitoring wells will be properly plugged or are being managed by a person and in a manner approved by the director. (4) Notice of intent for storage facility closure. The operator must notify the director at least 120 days before storage facility closure. At the time of such notice, if the operator has made any changes to the original plan, the operator also must provide the revised plan. The director may approve a shorter notice period. (5) Authorization for storage facility closure. No operator may initiate storage facility closure until the director has approved closure of the storage facility in writing. After the director has authorized storage facility closure, the operator must plug all wells in accordance with the approved plan required by §5.203(k) of this title. (6) Storage facility closure report. Once the director has authorized storage facility closure, the operator must submit a storage facility closure report within 90 days that must thereafter be retained by RRC in Austin. The report must include the following information: (A) documentation of appropriate injection and monitoring well plugging. The operator must provide a copy of a survey plat that has been submitted to the Regional Administrator of Region 6 of the USEPA. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks; (B) documentation of appropriate notification and information to such state and local authorities as have authority over drilling activities to enable such state and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zones; and			

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			(C) records reflecting the nature, composition and volume of the CO2 stream. (7) Certificate of closure. Upon completion of the requirements in paragraphs (3) - (6) of this subsection, the director will issue a certificate of closure. At that time, the operator is released from the requirement in §5.205(c) of this title to maintain financial assurance.			
468.	The owner or operator has completed the phase of the geologic sequestration project for which the financial instrument was required and has fulfilled all its financial obligations as determined by the Director, including obtaining financial responsibility for the next phase of the GS project, if required; or	40 CFR §146.85(b)(2)(i)	**§5.205 (c)(3)** The director may consider allowing the phasing in of financial assurance for only corrective action based on project-specific factors.			
469.	The owner or operator has submitted a replacement financial instrument and received written approval from the Director accepting the new financial instrument and releasing the owner or operator from the previous financial instrument.	40 CFR §146.85(b)(2)(ii)	No reference found			
470.	The owner or operator must have a detailed written estimate, in current dollars, of the cost of performing corrective action on wells in the AOR, plugging the injection well(s), post-injection site care and site closure, and emergency and remedial response.	40 CFR §146.85(c)	**§5.205 (c)(2)(E)** The operator of a geologic storage facility must provide to the director annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes to the area of review and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the post-injection storage facility care and closure plan. The operator must provide to the director upon request an adjustment of the cost estimate if the director has reason to believe that the original demonstration is no longer adequate to cover the cost of injection well plugging and post-injection storage facility care and closure.			
471.	The cost estimate must be performed for each phase separately and must be based on the costs to the regulatory agency of hiring a third party to perform the required activities. A third party is a party who is not within the corporate structure of the owner or operator.	40 CFR §146.85(c)(1)	**§5.205(c)(2)(C)(ii)** A qualified professional engineer licensed by the State of Texas, as required under Occupations Code, Chapter 1001, relating to Texas Engineering Practices Act, must prepare or supervise the preparation of a written estimate of the highest likely amount necessary to close the geologic storage facility. The operator must submit to the director the written estimate under seal of a qualified licensed professional engineer, as required under Occupations Code, Chapter 1001, relating to Texas Engineering Practices Act; and			

472.	During the active life of the geologic sequestration project, the owner or operator must adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with paragraph (a) of this section and provide this adjustment to the Director. The owner or operator must also provide to the Director written updates of adjustments to the cost estimate within 60 days of any amendments to the area of review and corrective action plan (§146.84), the injection well plugging plan (§146.92), the post-injection site care and site closure plan (§146.93), and the emergency and remedial response plan (§146.94).	40 CFR §146.85(c)(2)	**§5.205(c)(2)(E)**			
473.	The Director must approve any decrease or increase to the initial cost estimate. During the active life of the geologic sequestration project, the owner or operator must revise the cost estimate no later than 60 days after the Director has approved the request to modify the area of review and corrective action plan (§146.84), the injection well plugging plan (§146.92), the post-injection site care and site closure plan (§146.93), and the emergency and response plan (§146.94), if the change in the plan increases the cost. If the change to the plans decreases the cost, any withdrawal of funds must be approved by the Director. Any decrease to the value of the financial assurance instrument must first be approved by the Director. The revised cost estimate must be adjusted for inflation as specified at paragraph (c)(2) of this section.	40 CFR §146.85(c)(3)	**§5.205(c)(2)(E)**			
474.	Whenever the current cost estimate increases to an amount greater than the face amount of a financial instrument currently in use, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current cost estimate and submit evidence of such increase to the Director, or obtain other financial responsibility instruments to cover the increase. Whenever the current cost estimate decreases, the face amount of the financial assurance instrument may be reduced to the amount of the current cost estimate only after the owner or operator has received written approval from the Director.	40 CFR §146.85(c)(4)	**§5.205(c)(2)(E)**			

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475.	The owner or operator must notify the Director by certified mail of adverse financial conditions such as bankruptcy that may affect the ability to carry out injection well plugging and post-injection site care and site closure.	40 CFR §146.85(d)	**§5.205(d) Notice of adverse financial conditions.** (1) The operator must notify the Commission of adverse financial conditions that may affect the operator's ability to carry out injection well plugging and post-injection storage facility care and closure. An operator must file any notice of bankruptcy in accordance with §3.1(f) of this title (relating to Organization Report; Retention of Records; Notice Requirements). The operator must give such notice by certified mail. (2) The operator filing a bond must ensure that the bond provides a mechanism for the bond or surety company to give prompt notice to the Commission and the operator of any action filed alleging insolvency or bankruptcy of the surety company or the bank or alleging any violation that would result in suspension or revocation of the surety or bank's charter or license to do business. (3) Upon the incapacity of a bank or surety company by reason of bankruptcy, insolvency or suspension, or revocation of its charter or license, the Commission must deem the operator to be without bond coverage. The Commission must issue a notice to any operator who is without bond coverage and must specify a reasonable period to replace bond coverage, not to exceed 90 days.			
476.	In the event that the owner or operator or the third party provider of a financial responsibility instrument is going through a bankruptcy, the owner or operator must notify the Director by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding.	40 CFR §146.85(d)(1)	**§5.205 (d)(1, 2, & 3) Financial Responsibility**			
477.	A guarantor of a corporate guarantee must make such a notification to the Director if he/she is named as debtor, as required under the terms of the corporate guarantee.	40 CFR §146.85(d)(2)	No reference found			

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478.	An owner or operator who fulfills the requirements of paragraph (a) of this section by obtaining a trust fund, surety bond, letter of credit, escrow account, or insurance policy will be deemed to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee of the institution issuing the trust fund, surety bond, letter of credit, escrow account, or insurance policy. The owner or operator must establish other financial assurance within 60 days after such an event.	40 CFR §146.85(d)(3)	**§5.205(d) Notice of adverse financial conditions.** (1) The operator must notify the Commission of adverse financial conditions that may affect the operator's ability to carry out injection well plugging and post-injection storage facility care and closure. An operator must file any notice of bankruptcy in accordance with §3.1(f) of this title (relating to Organization Report; Retention of Records; Notice Requirements). The operator must give such notice by certified mail. (2) The operator filing a bond must ensure that the bond provides a mechanism for the bond or surety company to give prompt notice to the Commission and the operator of any action filed alleging insolvency or bankruptcy of the surety company or the bank or alleging any violation that would result in suspension or revocation of the surety or bank's charter or license to do business. (3) Upon the incapacity of a bank or surety company by reason of bankruptcy, insolvency or suspension, or revocation of its charter or license, the Commission must deem the operator to be without bond coverage. The Commission must issue a notice to any operator who is without bond coverage and must specify a reasonable period to replace bond coverage, not to exceed 90 days.			
479.	The owner or operator must provide an adjustment of the cost estimate to the Director within 60 days of notification by the Director, if the Director determines during the annual evaluation of the qualifying financial responsibility instrument(s) that the most recent demonstration is no longer adequate to cover the cost of corrective action (as required by §146.84), injection well plugging (as required by §146.92), post-injection site care and site closure (as required by §146.93), and emergency and remedial response (as required by §146.94).	40 CFR §146.85(e)	§5.205(c)(2)(E) The operator of a geologic storage facility must provide to the director annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes to the AOR and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the post-injection storage facility care and closure plan. The operator must provide to the director upon request an adjustment of the cost estimate if the director has reason to believe that the original demonstration is 24 no longer adequate to cover the cost of injection well plugging and post-injection storage facility care and closure.			
480.	The Director must approve the use and length of pay-in-periods for trust funds or escrow accounts.	40 CFR §146.85(f)	No reference found		Not an option	
40 CFR §146.86 Injection well construction requirements.						
481.	*General*. The owner or operator must ensure that all Class VI wells are constructed and completed to:	40 CFR §146.86(a)	**§5.203(e)**(1) Criteria for construction of anthropogenic CO2 injection wells. This paragraph establishes the criteria for the information about the construction and casing and cementing of, and special equipment for, anthropogenic CO2 injection wells that an applicant must include in an application.			

482.	Prevent the movement of fluids into or between USDWs or into any unauthorized zones;	40 CFR §146.86(a)(1)	**§5.203(e)(1)**(A) General. The operator of a GS facility must ensure that all anthropogenic CO2 injection wells are constructed and completed in a manner that will: (i) prevent the movement of injected CO2 or displaced formation fluids into any unauthorized zones or into any areas where they could endanger USDWs;			
483.	Permit the use of appropriate testing devices and workover tools; and	40 CFR §146.86(a)(2)	(ii) allow the use of appropriate testing devices and workover tools; and			
484.	Permit continuous monitoring of the annulus space between the injection tubing and long string casing.	40 CFR §146.86(a)(3)	(iii) allow continuous monitoring of the annulus space between the injection tubing and long string casing.			
485.	*Casing and Cementing of Class VI Wells.*	40 CFR §146.86(b)	**§5.203(e)(1)(B)** Casing and cementing of anthropogenic CO2 injection wells.			
486.	Casing and cement or other materials used in the construction of each Class VI well must have sufficient structural strength and be designed for the life of the geologic sequestration project. All well materials must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Director. The casing and cementing program must be designed to prevent the movement of fluids into or between USDWs. In order to allow the Director to determine and specify casing and cementing requirements, the owner or operator must provide the following information:	40 CFR §146.86(b)(1)	**§5.203(e)(1)(B)** Casing and cementing of anthropogenic CO2 injection wells. (i) The operator must ensure that injection wells are cased and the casing cemented in compliance with §3.13. (ii) Casing, cement, cement additives, and/or other materials used in the construction of each injection well must have sufficient structural strength and must be of sufficient quality and quantity to maintain integrity over the design life of the injection well. All well materials must be suitable for use with fluids with which the well materials may be expected to come into contact and must meet or exceed test standards developed for such materials by the API, ASTM International, or comparable standards as approved by the director.			
487.	Depth to the injection zone(s);	40 CFR §146.86(b)(1)(i)	**§5.203(e)(2)** Construction information. The applicant must provide the following information for each well to allow the director to determine whether the proposed well construction and completion design will meet the general performance criteria in paragraph (1) of this subsection: (A) depth to the injection zone;			
488.	Injection pressure, external pressure, internal pressure, and axial loading;	40 CFR §146.86(b)(1)(ii)	**§5.203(e)(2)(D)** proposed injection rate (intermittent or continuous), maximum proposed surface injection pressure, and maximum proposed volume of the CO2 stream;			
489.	Hole size;	40 CFR §146.86(b)(1)(iii)	**§5.203(e)(2)(B)** hole size;			
490.	Size and grade of all casing strings (wall thickness, external diameter, nominal weight, length, joint specification, and construction material);	40 CFR §146.86(b)(1)(iv)	**§5.203(e)(2)(C)** size and grade of all casing and tubing strings (e.g., wall thickness, external diameter, nominal weight, length, joint specification and construction material, tubing tensile, burst, and collapse strengths);			
491.	Corrosiveness of the carbon dioxide stream and formation fluids;	40 CFR §146.86(b)(1)(v)	**§5.203(e)(2)(F)** a description of the capability of the materials to withstand corrosion when exposed to a combination of the CO2 stream and formation fluids;			
492.	Down-hole temperatures;	40 CFR §146.86(b)(1)(vi)	**§5.203(e)(2)(G)** down-hole temperatures and pressures;			

493.	Lithology of injection and confining zone(s);	40 CFR §146.86(b)(1)(vii)	**§5.203(e)(2)(H)** lithology of injection and confining zones;			
494.	Type or grade of cement and cement additives; and	40 CFR §146.86(b)(1)(viii)	**§5.203(e)(2)(I)** type or grade of cement and additives;			
495.	Quantity, chemical composition, and temperature of the carbon dioxide stream.	40 CFR §146.86(b)(1)(ix)	**§5.203(e)(2)(J)** chemical composition and temperature of the CO2 stream;			
496.	Surface casing must extend through the base of the lowermost USDW and be cemented to the surface through the use of a single or multiple strings of casing and cement.	40 CFR §146.86(b)(2)	**§5.203(e)(1)(B)(iii)** Surface casing must extend through the base of the lowermost USDW above the injection zone and must be cemented to the surface.			
497.	At least one long string casing, using a sufficient number of centralizers, must extend to the injection zone and must be cemented by circulating cement to the surface in one or more stages.	40 CFR §146.86(b)(3)	**§5.203(e)(1)(B)(v)** At least one long string casing, using a sufficient number of centralizers, must extend through the injection zone. The long string casing must isolate the injection zone and other intervals as necessary for the protection of USDWs and to ensure confinement of the injected and formation fluids to the permitted injection zone using cement and/or other isolation techniques.			
498.	Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement does not allow fluid movement behind the well bore.	40 CFR §146.86(b)(4)	**§5.203(e)(1)(B)(iii)(iv)** Circulation of cement may be accomplished by staging. The director may approve an alternative method of cementing in cases where the cement cannot be circulated to the surface, provided the applicant can demonstrate by using logs that the cement does not allow fluid movement between the casing and the well bore.			

499.	Cement and cement additives must be compatible with the carbon dioxide stream and formation fluids and of sufficient quality and quantity to maintain integrity over the design life of the geologic sequestration project. The integrity and location of the cement shall be verified using technology capable of evaluating cement quality radially and identifying the location of channels to ensure that USDWs are not endangered.	40 CFR §146.86(b)(5)	**§5.203(e)(1)(B)(ii)** Casing, cement, cement additives, and/or other materials used in the construction of each injection well must have sufficient structural strength and must be of sufficient quality and quantity to maintain integrity over the design life of the injection well. All well materials must be suitable for use with fluids with which the well materials may be expected to come into contact and must meet or exceed test standards developed for such materials by the API, ASTM International, or comparable standards as approved by the director. **§5.203(f) Plan for logging, sampling, and testing of injection wells after permitting but before injection**. (1) Logs and surveys of newly drilled and completed injection wells. (A) During the drilling of any hole that is constructed by drilling a pilot hole that is enlarged by reaming or another method, the operator must perform deviation checks at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling. (B) Before surface casing is installed, the operator must run appropriate logs, such as resistivity, spontaneous potential, and caliper logs. (C) After each casing string is set and cemented, the operator must run logs, such as a cement bond log, variable density log, and a temperature log, to ensure proper cementing. (D) Before long string casing is installed, the operator must run logs appropriate to the geology, such as resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs, to gather data necessary to verify the characterization of the geology and hydrology.			
500.	*Tubing and packer.*	40 CFR §146.86(c)				

501.	Tubing and packer materials used in the construction of each Class VI well must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Director.	40 CFR §146.86(c)(1)	**§5.203(e) Injection well construction.** (1) Criteria for construction of anthropogenic CO2 injection wells. This paragraph establishes the criteria for the information about the construction and casing and cementing of, and special equipment for, anthropogenic CO2 injection wells that an applicant must include in an application. (B) Casing and cementing of anthropogenic CO2 injection wells. (i) The operator must ensure that injection wells are cased and the casing cemented in compliance with §3.13. (ii) Casing, cement, cement additives, and/or other materials used in the construction of each injection well must have sufficient structural strength and must be of sufficient quality and quantity to maintain integrity over the design life of the injection well. All well materials must be suitable for use with fluids with which the well materials may be expected to come into contact and must meet or exceed test standards developed for such materials by the API, ASTM International, or comparable standards as approved by the director. **§5.203(e)(2)** Construction information. The applicant must provide the following information for each well to allow the director to determine whether the proposed well construction and completion design will meet the general performance criteria in paragraph (1) of this subsection: (F) a description of the capability of the materials to withstand corrosion when exposed to a combination of the CO2 stream and formation fluids;			
502.	All owners or operators of Class VI wells must inject fluids through tubing with a packer set at a depth opposite a cemented interval at the location approved by the Director.	40 CFR §146.86(c)(2)	**§5.203(e)(1)(C)**(i) Tubing and packer. All injection wells must inject fluids through tubing set on a mechanical packer. Packers must be set no higher than 100 feet above the top of the permitted injection interval or at a location approved by the director.			
503.	In order for the Director to determine and specify requirements for tubing and packer, the owner or operator must submit the following information:	40 CFR §146.86(c)(3)	**§5.203(e)(2)** Construction information. The applicant must provide the following information for each well to allow the director to determine whether the proposed well construction and completion design will meet the general performance criteria in paragraph (1) of this subsection:			
504.	Depth of setting;	40 CFR §146.86(c)(3)(i)	**§5.203(e)(2)(E)** type of packer and packer setting depth;			

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505.	Characteristics of the carbon dioxide stream (chemical content, corrosiveness, temperature, and density) and formation fluids;	40 CFR §146.86(c)(3)(ii)	**§5.203(e)(2) (F)** a description of the capability of the materials to withstand corrosion when exposed to a combination of the CO2 stream and formation fluids; (J) chemical composition and temperature of the CO2 stream; and **§5.203(g) Compatibility determination**. Based on the results of the formation testing program required by subsection (f) of this section, the applicant must submit a determination of the compatibility of the CO2 stream with: (1) the materials to be used to construct the well; (2) fluids in the injection zone; and (3) minerals in both the injection and the confining zone.			
506.	Maximum proposed injection pressure;	40 CFR §146.86(c)(3)(iii)	**§5.203(e)(2)(D)** proposed injection rate (intermittent or continuous), maximum proposed surface injection pressure, and maximum proposed volume of the CO2 stream;			
507.	Maximum proposed annular pressure;	40 CFR §146.86(c)(3)(iv)	No reference			
508.	Proposed injection rate (intermittent or continuous) and volume and/or mass of the carbon dioxide stream;	40 CFR §146.86(c)(3)(v)	**§5.203(e)(2)(D)** proposed injection rate (intermittent or continuous), maximum proposed surface injection pressure, and maximum proposed volume of the CO2 stream;			
509.	Size of tubing and casing; and	40 CFR §146.86(c)(3)(vi)	**§5.203(e)(2)(C)** size and grade of all casing and tubing strings (e.g., wall thickness, external diameter, nominal weight, length, joint specification and construction material, tubing tensile, burst, and collapse strengths);			
510.	Tubing tensile, burst, and collapse strengths.	40 CFR §146.86(c)(3)(vii)	**§5.203(e)(2)(C)** size and grade of all casing and tubing strings (e.g., wall thickness, external diameter, nominal weight, length, joint specification and construction material, tubing tensile, burst, and collapse strengths);			

40 CFR §146.87 Logging, sampling, and testing prior to injection well operation.						
511.	During the drilling and construction of a Class VI injection well, the owner or operator must run appropriate logs, surveys and tests to determine or verify the depth, thickness, porosity, permeability, and lithology of, and the salinity of any formation fluids in all relevant geologic formations to ensure conformance with the injection well construction requirements under §146.86 and to establish accurate baseline data against which future measurements may be compared. The owner or operator must submit to the Director a descriptive report prepared by a knowledgeable log analyst that includes an interpretation of the results of such logs and tests. At a minimum, such logs and tests must include:	40 CFR §146.87(a)	**§5.203(f) Plan for logging, sampling, and testing of injection wells after permitting but before injection**. The applicant must submit a plan for logging, sampling, and testing of each injection well after permitting but prior to injection well operation. The plan need not include identical logging, sampling, and testing procedures for all wells provided there is a reasonable basis for different procedures. Such plan is not necessary for existing wells being converted to anthropogenic CO2 injection wells in accordance with this subchapter, to the extent such activities already have taken place. The plan must describe the logs, surveys, and tests to be conducted to verify the depth, thickness, porosity, permeability, and lithology of, and the salinity of any formation fluids in, the formations that are to be used for monitoring, storage, and confinement to assure conformance with the injection well construction requirements set forth in subsection (e) of this section, and to establish accurate baseline data against which future measurements may be compared. The plan must meet the following criteria and must include the following information.			
512.	Deviation checks during drilling on all holes constructed by drilling a pilot hole which is enlarged by reaming or another method. Such checks must be at sufficiently frequent intervals to determine the location of the borehole and to ensure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and	40 CFR §146.87(a)(1)	**§5.203(f)**(1)(A) During the drilling of any hole that is constructed by drilling a pilot hole that is enlarged by reaming or another method, the operator must perform deviation checks at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling.			
513.	Before and upon installation of the surface casing:	40 CFR §146.87(a)(2)	**§5.203(f)**(D) Before long string casing is installed, the operator must run logs appropriate to the geology, such as resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs, to gather data necessary to verify the characterization of the geology and hydrology.			
514.	Resistivity, spontaneous potential, and caliper logs before the casing is installed; and	40 CFR §146.87(a)(2)(i)	**§5.203(f)**(1)(B) Before surface casing is installed, the operator must run appropriate logs, such as resistivity, spontaneous potential, and caliper logs.			
515.	A cement bond and variable density log to evaluate cement quality radially, and a temperature log after the casing is set and cemented.	40 CFR §146.87(a)(2)(ii)	**§5.203(f)**(1)(C) After each casing string is set and cemented, the operator must run logs, such as a cement bond log, variable density log, and a temperature log, to ensure proper cementing.			
516.	Before and upon installation of the long string casing:	40 CFR §146.87(a)(3)				
517.	Resistivity, spontaneous potential, porosity, caliper, gamma ray, fracture finder logs, and any other logs the Director requires for the given geology before the casing is installed; and	40 CFR §146.87(a)(3)(i)	**§5.203(f)**(1)(D) Before long string casing is installed, the operator must run logs appropriate to the geology, such as resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs, to gather data necessary to verify the characterization of the geology and hydrology.			

518.	A cement bond and variable density log, and a temperature log after the casing is set and cemented.	40 CFR §146.87(a)(3)(ii)	**§5.203(e)(1)(B)(vi)** The applicant must verify the integrity and location of the cement using technology capable of radial evaluation of cement quality and identification of the location of channels to ensure that USDWs will not be endangered.			
519.	A series of tests designed to demonstrate the internal and external mechanical integrity of injection wells, which may include:	40 CFR §146.87(a)(4)	**§5.203(h) Mechanical integrity testing.** (2) Mechanical integrity testing plan. The applicant must prepare and submit a mechanical integrity testing plan as part of a permit application. The plan must include a schedule for the performance of a series of tests at a minimum frequency of five years. The performance tests must be designed to demonstrate the internal and external mechanical integrity of each injection well. These tests may include:			
520.	A pressure test with liquid or gas;	40 CFR §146.87(a)(4)(i)	**§5.203(h)(2)(A)** a pressure test with liquid or inert gas;			
521.	A tracer survey such as oxygen-activation logging;	40 CFR §146.87(a)(4)(ii)	**§5.203(h)(2)(B)** a tracer survey such as oxygen-activation logging;			
522.	A temperature or noise log;	40 CFR §146.87(a)(4)(iii)	**§5.203(h)(2)(C)** a temperature or noise log;			
523.	A casing inspection log; and	40 CFR §146.87(a)(4)(iv)	**§5.203(h)(2)(D)** a casing inspection log; and/or			
524.	Any alternative methods that provide equivalent or better information and that are required by and/or approved of by the Director.	40 CFR §146.87(a)(5)	**§5.203(h)(2)(E)** any alternative method that provides equivalent or better information approved by the director.			
525.	The owner or operator must take whole cores or sidewall cores of the injection zone and confining system and formation fluid samples from the injection zone(s), and must submit to the Director a detailed report prepared by a log analyst that includes: well log analyses (including well logs), core analyses, and formation fluid sample information. The Director may accept information on cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.	40 CFR §146.87(b)	**§5.203(f)(3)(B)** The operator must submit analyses of whole cores or sidewall cores representative of the injection zone and confining zone and formation fluid samples from the injection zone. The director may accept data from cores and formation fluid samples from nearby wells or other data if the operator can demonstrate to the director that such data are representative of conditions at the proposed injection well.			
526.	The owner or operator must record the fluid temperature, pH, conductivity, reservoir pressure, and static fluid level of the injection zone(s).	40 CFR §146.87(c)	**§5.203(f)(3)(A)** The operator must record and submit the formation fluid temperature, pH, and conductivity, the reservoir pressure, and the static fluid level of the injection zone.			
527.	At a minimum, the owner or operator must determine or calculate the following information concerning the injection and confining zone(s):	40 CFR §146.87(d)	**§5.203(f)(2)(C)**			
528.	Fracture pressure;	40 CFR §146.87(d)(1)	**§5.203(f)(2)(C)** The operator must determine or calculate the fracture pressures for the injection and confining zone. If the fracture pressures are determined through calculation, the Commission will include in any permit it might issue a limit of 90% of the calculated fracture pressure to ensure that the injection pressure does not exceed the fracture pressure.			

529.	Other physical and chemical characteristics of the injection and confining zone(s); and	40 CFR §146.87(d)(2)	**§5.203 (c)(2)(B)** the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of, and the geochemistry of any formation fluids in, the storage reservoir and confining zone and any other relevant geologic formations, including geology/facies changes based on field data, which may include geologic cores, outcrop data, seismic surveys, well logs, and lithologic descriptions, and the analyses of logging, sampling, and testing results used to make such determinations;			
530.	Physical and chemical characteristics of the formation fluids in the injection zone(s).	40 CFR §146.87(d)(3)	**§5.203 (c)(2)(B)**			
531.	Upon completion, but prior to operation, the owner or operator must conduct the following tests to verify hydrogeologic characteristics of the injection zone(s):	40 CFR §146.87(e)	**§5.203(f)(2)**			
532.	A pressure fall-off test; and,	40 CFR §146.87(e)(1)	**§5.203(f)(2)** Testing and determination of hydrogeologic characteristics of injection and confining zone. (A) Prior to operation, the operator must conduct tests to verify hydrogeologic characteristics of the injection zone. (B) The operator must perform an initial pressure fall-off or other test and submit to the director a written report of the results of the test, including details of the methods used to perform the test and to interpret the results, all necessary graphs, and the testing log, to verify permeability, injectivity, and initial pressure using water or CO2.			
533.	A pump test; or	40 CFR §146.87(e)(2)	See above			
534.	Injectivity tests.	40 CFR §146.87(e)(3)	See above			
535.	The owner or operator must provide the Director with the opportunity to witness all logging and testing by this subpart. The owner or operator must submit a schedule of such activities to the Director 30 days prior to conducting the first test and submit any changes to the schedule 30 days prior to the next scheduled test.	40 CFR §146.87(f)	**§5.203(h) Commission witnessing of testing and logging**. The operator must provide the division with the opportunity to witness all testing and logging. The operator must submit a proposed schedule of such activities to the Commission at least 30 days prior to conducting the first test and submit notice at least 48 hours in advance of any actual testing or logging. Testing and logging may not commence before the end of the 48-hour period unless authorized by the director.			

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40 CFR §146.88 Injection well operating requirements.						
536.	Except during stimulation, the owner or operator must ensure that injection pressure does not exceed 90 percent of the fracture pressure of the injection zone(s) so as to ensure that the injection does not initiate new fractures or propagate existing fractures in the injection zone(s). In no case may injection pressure initiate fractures in the confining zone(s) or cause the movement of injection or formation fluids that endangers a USDW. Pursuant to requirements at §146.82(a)(9), all stimulation programs must be approved by the Director as part of the permit application and incorporated into the permit.	40 CFR §146.88(a)	§5.206(d)(2)(C) The operator must comply with a maximum surface injection pressure limit approved by the director and specified in the permit. In approving a maximum surface injection pressure limit, the director must consider the results of well tests and, where appropriate, geomechanical or other studies that assess the risks of tensile failure and shear failure. The director must approve limits that, with a reasonable degree of certainty, will avoid initiation or propagation of fractures in the confining zone or cause otherwise non-transmissive faults or fractures transecting the confining zone to become transmissive. In no case may injection pressure cause movement of injection fluids or formation fluids in a manner that endangers USDWs. §5.206(i) requires notice before any stimulation activity §5.203(e)(4) requires well stimulation plan			
537.	Injection between the outermost casing protecting USDWs and the well bore is prohibited.	40 CFR §146.88(b)	**§5.206(c)**(2)(A) Injection between the outermost casing protecting USDWs and the well bore is prohibited.			
538.	The owner or operator must fill the annulus between the tubing and the long string casing with a non-corrosive fluid approved by the Director. The owner or operator must maintain on the annulus a pressure that exceeds the operating injection pressure, unless the Director determines that such requirement might harm the integrity of the well or endanger USDWs.	40 CFR §146.88(c)	**§5.206(c)(2)(D)** The operator must fill the annulus between the tubing and the long string casing with a corrosion inhibiting fluid approved by the director.			
539.	Other than during periods of well workover (maintenance) approved by the Director in which the sealed tubing-casing annulus is disassembled for maintenance or corrective procedures, the owner or operator must maintain mechanical integrity of the injection well at all times.	40 CFR §146.88(d)	**§5.206(e)**(2) Other than during periods of well workover in which the sealed tubing-casing annulus is of necessity disassembled for maintenance or corrective procedures, the operator must maintain mechanical integrity of the injection well at all times.			
540.	The owner or operator must install and use:	40 CFR §146.88(e)				
541.	Continuous recording devices to monitor: the injection pressure; the rate, volume and/or mass, and temperature of the carbon dioxide stream; and the pressure on the annulus between the tubing and the long string casing and annulus fluid volume; and	40 CFR §146.88(e)(1)	§5.206(d)(2)(E) The operator must install and use continuous recording devices to monitor the injection pressure, and the rate, volume, and temperature of the CO2 stream. The operator must monitor the pressure on the annulus between the tubing and the long string casing. The operator must continuously record, continuously monitor, or control by a preset high-low pressure sensor switch the wellhead pressure of each injection well.			
542.	Alarms and automatic surface shut-off systems or, at the discretion of the Director, down-hole shut-off systems (e.g., automatic shut-off, check valves) for onshore wells or, other mechanical devices that provide equivalent protection; and	40 CFR §146.88(e)(2)	§5.206(d)(2)(F) The operator must comply with the following requirements for alarms and automatic shut-off systems. (i) The operator must install and use alarms and automatic shut-off systems designed to alert the operator and shut-in the well when operating parameters such as annulus pressure, injection rate or other parameters diverge from permitted ranges and/or gradients. On offshore wells, the automatic shut-off systems must be installed down-hole.			

543.	Alarms and automatic down-hole shut-off systems for wells located offshore but within State territorial waters, designed to alert the operator and shut-in the well when operating parameters such as annulus pressure, injection rate, or other parameters diverge beyond permitted ranges and/or gradients specified in the permit.	40 CFR §146.88(e)(3)	§5.206(d)(2)(F) The operator must comply with the following requirements for alarms and automatic shut-off systems. (i) The operator must install and use alarms and automatic shut-off systems designed to alert the operator and shut-in the well when operating parameters such as annulus pressure, injection rate or other parameters diverge from permitted ranges and/or gradients. On offshore wells, the automatic shut-off systems must be installed down-hole.			
544.	If a shutdown (i.e., down-hole or at the surface) is triggered or a loss of mechanical integrity is discovered, the owner or operator must immediately investigate and identify as expeditiously as possible the cause of the shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under paragraph (e) of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator must:	40 CFR §146.88(f)	§5.206(d)(2)(F)(ii) If an automatic shutdown is triggered or a loss of mechanical integrity is discovered, the operator must immediately investigate and identify as expeditiously as possible the cause. If, upon investigation, the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking MI, the operator must:			
545.	Immediately cease injection;	40 CFR §146.88(f)(1)	§5.206(d)(2)F)(ii)(I) immediately cease injection;			
546.	Take all steps reasonably necessary to determine whether there may have been a release of the injected carbon dioxide stream or formation fluids into any unauthorized zone;	40 CFR §146.88(f)(2)	§5.206(d)(2)F)(ii) (II) take all steps reasonably necessary to determine whether there may have been a release of the injected CO2 stream into any unauthorized zone;			
547.	Notify the Director within 24 hours;	40 CFR §146.88(f)(3)	§5.206(d)(2)F)(ii)(III) notify the director as soon as practicable, but within 24 hours;			
548.	Restore and demonstrate mechanical integrity to the satisfaction of the Director prior to resuming injection; and	40 CFR §146.88(f)(4)	§5.206(d)(2)(F)(ii)(IV) restore and demonstrate MI to the satisfaction of the director prior to resuming injection; and			
549.	Notify the Director when injection can be expected to resume.	40 CFR §146.88(f)(5)	§5.206(d)(2)(F)(ii)(V) notify the director when injection can be expected to resume.			
40 CFR §146.89 Mechanical integrity.						
550.	A Class VI well has mechanical integrity if:	40 CFR §146.89(a)	§5.102(31)(A) An anthropogenic CO2 injection well has mechanical integrity if:			
551.	There is no significant leak in the casing, tubing, or packer; and	40 CFR §146.89(a)(1)	§5.102(31) (i) there is no significant leak in the casing, tubing, or packer; and (ii) there is no significant fluid movement into a stratum containing an USDW through channels adjacent to the injection well bore as a result of operation of the injection well.			
552.	There is no significant fluid movement into a USDW through channels adjacent to the injection well bore.	40 CFR §146.89(a)(2)				
553.	To evaluate the absence of significant leaks under paragraph (a)(1) of this section, owners or operators must, following an initial annulus pressure test, continuously monitor injection pressure, rate, injected volumes; pressure on the annulus between tubing and long-string casing; and annulus fluid volume as specified in §146.88 (e);	40 CFR §146.89(b)	**§5.203(h)(1)(C)** Following an initial annulus pressure test, the operator must continuously monitor injection pressure, rate, injected volumes, and pressure on the annulus between tubing and long string casing to confirm that the injected fluids are confined to the injection zone.			

554.	At least once per year, the owner or operator must use one of the following methods to determine the absence of significant fluid movement under paragraph (a)(2) of this section:	40 CFR §146.89(c)	§5.203**(h)**(1)(D) At least once per year until the injection well is plugged, the operator must confirm the absence of significant fluid movement into a USDW through channels adjacent to the injection wellbore (external integrity) using a method approved by the director (e.g., diagnostic surveys such as oxygen-activation logging or temperature or noise logs).			
555.	An approved tracer survey such as an oxygen-activation log; or	40 CFR §146.89(c)(1)	§5.203**(h)**(1)(D) At least once per year until the injection well is plugged, the operator must confirm the absence of significant fluid movement into a USDW through channels adjacent to the injection wellbore (external integrity) using a method approved by the director (e.g., diagnostic surveys such as oxygen-activation logging or temperature or noise logs).			
556.	A temperature or noise log.	40 CFR §146.89(c)(2)				
557.	If required by the Director, at a frequency specified in the testing and monitoring plan required at §146.90, the owner or operator must run a casing inspection log to determine the presence or absence of corrosion in the long-string casing.	40 CFR §146.89(d)				
558.	The Director may require any other test to evaluate mechanical integrity under paragraphs (a)(1) or (a)(2) of this section. Also, the Director may allow the use of a test to demonstrate mechanical integrity other than those listed above with the written approval of the Administrator. To obtain approval for a new mechanical integrity test, the Director must submit a written request to the Administrator setting forth the proposed test and all technical data supporting its use. The Administrator may approve the request if he or she determines that it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. Any alternate method approved by the Administrator will be published in the *Federal Register* and may be used in all States in accordance with applicable State law unless its use is restricted at the time of approval by the Administrator.	40 CFR §146.89(e)	§5.203(h)(2)(E) (E) any alternative method approved by the director, and if necessary by the Administrator of EPA under 40 CFR §146.89(e), that provides equivalent or better information approved by the director.			
559.	In conducting and evaluating the tests enumerated in this section or others to be allowed by the Director, the owner or operator and the Director must apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the Director, he/she shall include a description of the test(s) and the method(s) used. In making his/her evaluation, the Director must review monitoring and other test data submitted since the previous evaluation.	40 CFR §146.89(f)	**§5.207 Reporting and Record-Keeping** (a) The operator of a geologic storage facility must provide, at a minimum, the following reports to the director and retain the following information. (1) Test records. The operator must file a complete record of all tests in duplicate with the district office within 30 days after the testing. In conducting and evaluating the tests enumerated in this subchapter or others to be allowed by the director, the operator and the director must apply methods and standards generally accepted in the industry. When the operator reports the results of mechanical integrity tests to the director, the operator must include a description of the and tests and methods used. In making this evaluation, the director must review monitoring and other test data submitted since the previous evaluation.			

560.	The Director may require additional or alternative tests if the results presented by the owner or operator under paragraphs (a) through (d) of this section are not satisfactory to the Director to demonstrate that there is no significant leak in the casing, tubing, or packer, or to demonstrate that there is no significant movement of fluid into a USDW resulting from the injection activity as stated in paragraphs (a)(1) and (2) of this section.	40 CFR §146.89(g)	**§5.206(f)(4)** The director may require additional or alternative tests if the results presented by the operator do not demonstrate to the director that there is no significant leak in the casing, tubing, or packer or movement of fluid into or between formations containing USDWs resulting from the injection activity.			
40 CFR §146.90 Testing and monitoring requirements.						
561.	The owner or operator of a Class VI well must prepare, maintain, and comply with a testing and monitoring plan to verify that the geologic sequestration project is operating as permitted and is not endangering USDWs. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The testing and monitoring plan must be submitted with the permit application, for Director approval, and must include a description of how the owner or operator will meet the requirements of this section, including accessing sites for all necessary monitoring and testing during the life of the project. Testing and monitoring associated with geologic sequestration projects must, at a minimum, include:	40 CFR §146.90	**§5.206(e)**(1) The operator of an anthropogenic CO2 injection well must maintain and comply with the approved monitoring, sampling, and testing plan to verify that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone. (2) All permits shall include the following requirements: (A) the proper use, maintenance, and installation of monitoring equipment or methods; (B) monitoring including type, intervals, and frequency sufficient to yield data that are representative of the monitored activity including, when required, continuous monitoring; (C) reporting no less frequently than as specified in §5.207 of this title (relating to Reporting and Record-Keeping). (3) The director may require additional monitoring as necessary to support, upgrade, and improve computational modeling of the AOR evaluation and to determine compliance with the requirement that the injection activity not allow movement of fluid that would endanger USDWs. §5.206(a) Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this chapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.			
562.	Analysis of the carbon dioxide stream with sufficient frequency to yield data representative of its chemical and physical characteristics;	40 CFR §146.90(a)	§5.203(j)(2)(A) the analysis of the CO2 stream prior to injection with sufficient frequency to yield data representative of its chemical and physical characteristics;			
563.	Installation and use, except during well workovers as defined in §146.88(d), of continuous recording devices to monitor injection pressure, rate, and volume; the pressure on the annulus between the tubing and the long string casing; and the annulus fluid volume added;	40 CFR §146.90(b)	**5.203(j)**(2) The plan must include the following: (B) the installation and use of continuous recording devices to monitor injection pressure, rate, and volume, and the pressure on the annulus between the tubing and the long string casing, except during workovers;			

564.	Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which must be performed on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in §146.86(b), by:	40 CFR §146.90(c)	(C) after initiation of injection, the performance on a semi-annual basis of corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion to ensure that the well components meet the minimum standards for material strength and performance set forth in subsection (e)(1)(A) of this section. The operator must report the results of such monitoring annually. Corrosion monitoring may be accomplished by:			
565.	Analyzing coupons of the well construction materials placed in contact with the carbon dioxide stream; or	40 CFR §146.90(c)(1)	(i) analyzing coupons of the well construction materials in contact with the CO2 stream;			
566.	Routing the carbon dioxide stream through a loop constructed with the material used in the well and inspecting the materials in the loop; or	40 CFR §146.90(c)(2)	(ii) routing the CO2 stream through a loop constructed with the materials used in the well and inspecting the materials in the loop; or			
567.	Using an alternative method approved by the Director;	40 CFR §146.90(c)(3)	(iii) using an alternative method, materials, or time period approved by the director;			
568.	Periodic monitoring of the ground water quality and geochemical changes above the confining zone(s) that may be a result of carbon dioxide movement through the confining zone(s) or additional identified zones including:	40 CFR §146.90(d)	§5.203(j)(2)(D) monitoring of geochemical and geophysical changes, including: (i) periodic sampling of the fluid temperature, pH, conductivity, reservoir pressure and static fluid level of the injection zone and monitoring for pressure changes, and for changes in geochemistry, in a permeable and porous formation near to and above the top confining zone; (ii) periodic monitoring of the quality and geochemistry of an underground source of drinking water within the area of review and the formation fluid in a permeable and porous formation near to and above the top confining zone to detect any movement of the injected CO2 through the confining zone into that monitored formation;			
569.	The location and number of monitoring wells based on specific information about the geologic sequestration project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors; and	40 CFR §146.90(d)(1)	(iii) the location and number of monitoring wells justified on the basis of the area of review, injection rate and volume, geology, and the presence of artificial penetrations and other factors specific to the GS facility; and			
570.	The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected under §146.82(a)(6) and on any modeling results in the area of review evaluation required by §146.84(c).	40 CFR §146.90(d)(2)	(iv) the monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data collected under subsection (c)(2) of this section and any modeling results in the area of review evaluation;			

571.	A demonstration of external mechanical integrity pursuant to §146.89(c) at least once per year until the injection well is plugged; and, if required by the Director, a casing inspection log pursuant to requirements at §146.89(d) at a frequency established in the testing and monitoring plan;	40 CFR §146.90(e)	§5.203(h)(1)(D) At least once per year until the injection well is plugged, the operator must confirm the absence of significant fluid movement into a USDW through channels adjacent to the injection wellbore (external integrity) using a method approved by the director (e.g., diagnostic surveys such as oxygen-activation logging or temperature or noise logs). (2) Mechanical integrity testing plan. The applicant must prepare and submit a mechanical integrity testing plan as part of a permit application. The performance tests must be designed to demonstrate the internal and external mechanical integrity of each injection well. These tests may include: (A) a pressure test with liquid or inert gas; (B) a tracer survey such as oxygen-activation logging; (C) a temperature or noise log; (D) a casing inspection log; and/or (E) any alternative method approved by the director, and if necessary by the Administrator of EPA under 40 CFR §146.89(e), that provides equivalent or better information approved by the director.			
572.	A pressure fall-off test at least once every five years unless more frequent testing is required by the Director based on site-specific information;	40 CFR §146.90(f)	**§5.203 (j)(2)(F)** A pressure fall-off test at least once every five years unless more frequent testing is required by the director based on site-specific information;			

573.	Testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (e.g., the pressure front) by using:	40 CFR §146.90(g)	§5.203(f)(2)(D) monitoring of geochemical and geophysical changes, including: (i) periodic sampling of the fluid temperature, pH, conductivity, reservoir pressure and static fluid level of the injection zone and monitoring for pressure changes, and for changes in geochemistry, in a permeable and porous formation near to and above the top confining zone; (ii) periodic monitoring of the quality and geochemistry of an underground source of drinking water within the area of review and the formation fluid in a permeable and porous formation near to and above the top confining zone to detect any movement of the injected CO2 through the confining zone into that monitored formation; (iii) the location and number of monitoring wells justified on the basis of the area of review, injection rate and volume, geology, and the presence of artificial penetrations and other factors specific to the GS facility; and (iv) the monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data collected under subsection (c)(2) of this section and any modeling results in the area of review evaluation; §5.203(j)(2)(E) tracking the extent of the CO2 plume and the position of the pressure front by using indirect, geophysical techniques, which may include seismic, electrical, gravity, or electromagnetic surveys and/or down-hole CO2 detection tools; and			
574.	Direct methods in the injection zone(s); and,	40 CFR §146.90(g)(1)				
575.	Indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the Director determines, based on site-specific geology, that such methods are not appropriate;	40 CFR §146.90(g)(2)	§5.203(j)(2)(E) tracking the extent of the CO2 plume and the position of the pressure front by using indirect, geophysical techniques, which may include seismic, electrical, gravity, or electromagnetic surveys and/or down-hole CO2 detection tools; and			
576.	The Director may require surface air monitoring and/or soil gas monitoring to detect movement of carbon dioxide that could endanger a USDW.	40 CFR §146.90(h)	§5.203(j)(2)(G) additional monitoring as the director may determine to be necessary to support, upgrade, and improve computational modeling of the area of review evaluation and to determine compliance with the requirements that the injection activity not allow the movement of fluid containing any contaminant into USDWs and that the injected fluid remain within the permitted interval.		State UIC regulations do not require soil gas or surface air monitoring. Duplicative of requirements under 40 CFR part 98.	
577.	Design of Class VI surface air and/or soil gas monitoring must be based on potential risks to USDWs within the area of review;	40 CFR §146.90(h)(1)	No reference found			

578.	The monitoring frequency and spatial distribution of surface air monitoring and/or soil gas monitoring must be decided using baseline data, and the monitoring plan must describe how the proposed monitoring will yield useful information on the area of review delineation and/or compliance with standards under §144.12 of this chapter;	40 CFR §146.90(h)(2)	No reference found		State UIC regulations do not require soil gas or surface air monitoring. Duplicative of requirements under 40 CFR part 98.	
579.	If an owner or operator demonstrates that monitoring employed under §§98.440 to 98.449 of this chapter (Clean Air Act, 42 U.S.C. 7401 et seq.) accomplishes the goals of (h)(1) and (2) of this section, and meets the requirements pursuant to §146.91(c)(5), a Director that requires surface air/soil gas monitoring must approve the use of monitoring employed under §§98.440 to 98.449 of this chapter. Compliance with §§98.440 to 98.449 of this chapter pursuant to this provision is considered a condition of the Class VI permit;	40 CFR §146.90(h)(3)	No reference found		State UIC regulations do not require soil gas or surface air monitoring. Duplicative of requirements under 40 CFR part 98.	
580.	Any additional monitoring, as required by the Director, necessary to support, upgrade, and improve computational modeling of the area of review evaluation required under §146.84(c) and to determine compliance with standards under §144.12 of this chapter;	40 CFR §146.90(i)	§5.203(j)(2)(G) additional monitoring as the director may determine to be necessary to support, upgrade, and improve computational modeling of the AOR evaluation and to determine compliance with the requirements that the injection activity not allow the movement of fluid containing any contaminant into USDWs and that the injected fluid remain within the permitted interval.			
581.	The owner or operator shall periodically review the testing and monitoring plan to incorporate monitoring data collected under this subpart, operational data collected under §146.88, and the most recent area of review reevaluation performed under §146.84(e). In no case shall the owner or operator review the testing and monitoring plan less often than once every five years. Based on this review, the owner or operator shall submit an amended testing and monitoring plan or demonstrate to the Director that no amendment to the testing and monitoring plan is needed. Any amendments to the testing and monitoring plan must be approved by the Director, must be incorporated into the permit, and are subject to the permit modification requirements at §§144.39 or 144.41 of this chapter, as appropriate. Amended plans or demonstrations shall be submitted to the Director as follows:	40 CFR §146.90(j)	§ 5.207(a)(2)(D)			
582.	Within one year of an area of review reevaluation;	40 CFR §146.90(j)(1)	5.207(a)(2)(D)			

583.	Following any significant changes to the facility, such as addition of monitoring wells or newly permitted injection wells within the area of review, on a schedule determined by the Director; or	40 CFR §146.90(j)(2)	§5.207(a)(3) The director may require the revision of any required plan following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the director or whenever the director determines that such a revision is necessary to comply with the requirements of this subchapter.			
584.	When required by the Director.	40 CFR §146.90(j)(3)	**§5.207(d)(3)**			
585.	A quality assurance and surveillance plan for all testing and monitoring requirements.	40 CFR §146.90(k)	§5.203(a) (4) Reports. An applicant must ensure that all descriptive reports are prepared by a qualified and knowledgeable person and include an interpretation of the results of all logs, surveys, sampling, and tests required in this subchapter. The applicant must include in the application a quality assurance and surveillance plan for all testing and monitoring, which includes, at a minimum, validation of the analytical laboratory data, calibration of field instruments, and an explanation of the sampling and data acquisition techniques.			
40 CFR §146.91 Reporting requirements.						
586.	The owner or operator must, at a minimum, provide, as specified in paragraph (e) of this section, the following reports to the Director, for each permitted Class VI well:	40 CFR §146.91	**§5.207 Reporting and Record-Keeping** (a) The operator of a GS facility must provide, at a minimum, the following reports to the director and retain the following information.			
587.	Semi-annual reports containing:	40 CFR §146.91(a)	**§5.207(a)(2)(C)**			
588.	Any changes to the physical, chemical, and other relevant characteristics of the carbon dioxide stream from the proposed operating data;	40 CFR §146.91(a)(1)	**§5.207**(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (C) Semi-annual report. The operator must report: (ii) changes to the physical, chemical, and other relevant characteristics of the CO2 stream from the proposed operating data;			
589.	Monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure;	40 CFR §146.91(a)(2)	**§5.207**(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (C) Semi-annual report. The operator must report: (iii) monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure;			
590.	A description of any event that exceeds operating parameters for annulus pressure or injection pressure specified in the permit;	40 CFR §146.91(a)(3)	**§5.207**(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (C) Semi-annual report. The operator must report: (iv) a description of any event that significantly exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;			

591.	A description of any event which triggers a shut-off device required pursuant to §146.88(e) and the response taken;	40 CFR §146.91(a)(4)	**§5.207**(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (C) Semi-annual report. The operator must report: (v) a description of any event that triggers a shutdown device and the response taken; and			
592.	The monthly volume and/or mass of the carbon dioxide stream injected over the reporting period and the volume injected cumulatively over the life of the project;	40 CFR §146.91(a)(5)	**§5.207**(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (C) Semi-annual report. The operator must report: (iii) monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure;		AMEND	
593.	Monthly annulus fluid volume added; and	40 CFR §146.91(a)(6)	**§5.207(a)(2)(C)**			
594.	The results of monitoring prescribed under §146.90.	40 CFR §146.91(a)(7)	**§5.207**(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (C) Semi-annual report. The operator must report: (vi) the results of monitoring prescribed under §5.206(d) (Permit Standards).			
595.	Report, within 30 days, the results of:	40 CFR §146.91(b)	**§5.207 Reporting and Record-Keeping** (a) The operator of a GS facility must provide, at a minimum, the following reports to the director and retain the following information. (2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (B) Report within 30 days. The operator must report:			
596.	Periodic tests of mechanical integrity;	40 CFR §146.91(b)(1)	**§5.207(a)(2)**(B)(i) the results of periodic tests for mechanical integrity;			
597.	Any well workover; and,	40 CFR §146.91(b)(2)	**§5.207**(a)(2)(B)(iii) a description of any well workover.			
598.	Any other test of the injection well conducted by the permittee if required by the Director.	40 CFR §146.91(b)(3)	**§5.207**(a)(2)(B)(ii) the results of any other test of the injection well conducted by the operator if required by the director;			

599.	Report, within 24 hours:	40 CFR §146.91(c)	**§5.207**(a) The operator of a GS facility must provide, at a minimum, the following reports to the director and retain the following information. (2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days.			
600.	Any evidence that the injected carbon dioxide stream or associated pressure front may cause an endangerment to a USDW;	40 CFR §146.91(c)(1)	**§5.207**(a)(2)(A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days.			
601.	Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs;	40 CFR §146.91(c)(2)	§5.207(a)(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph. (A) Report within 24 hours. The operator must report to the appropriate district office the discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days.			
602.	Any triggering of a shut-off system (i.e., down-hole or at the surface);	40 CFR §146.91(c)(3)	§5.203(c)(2)(F)(ii) If an automatic shutdown is triggered or a loss of mechanical integrity is discovered, the operator must immediately investigate and identify as expeditiously as possible the cause. If, upon investigation, the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking MI, the operator must: (III) notify the director as soon as practicable, but within 24 hours;			

603.	Any failure to maintain mechanical integrity; or.	40 CFR §146.91(c)(4)	§5.203(c)(2)(F)(ii) If an automatic shutdown is triggered or a loss of mechanical integrity is discovered, the operator must immediately investigate and identify as expeditiously as possible the cause. If, upon investigation, the well appears to be lacking mechanical integrity, or if monitoring otherwise indicates that the well may be lacking MI, the operator must: (III) notify the director as soon as practicable, but within 24 hours;			
604.	Pursuant to compliance with the requirement at §146.90(h) for surface air/soil gas monitoring or other monitoring technologies, if required by the Director, any release of carbon dioxide to the atmosphere or biosphere.	40 CFR §146.91(c)(5)	No reference found		State regulations do not require soil gas monitoring for UIC wells	
605.	Owners or operators must notify the Director in writing 30 days in advance of:	40 CFR §146.91(d)	**§5.206(**(i) Commission witnessing of testing and logging. The operator must provide the division with the opportunity to witness all planned well workovers, stimulation activities, other than stimulation for formation testing, and testing and logging. The operator must submit a proposed schedule of such activities to the Commission at least 30 days prior to conducting the first such activity and submit notice at least 48 hours in advance of any actual activity. Such activities shall not commence before the end of the 30 days unless authorized by the director. 3			
606.	Any planned well workover;	40 CFR §146.91(d)(1)	**§5.206(i)**			
607.	Any planned stimulation activities, other than stimulation for formation testing conducted under §146.82; and	40 CFR §146.91(d)(2)	**§5.206(i)**			
608.	Any other planned test of the injection well conducted by the permittee.	40 CFR §146.91(d)(3)	**§5.206(i)**			
609.	Regardless of whether a State has primary enforcement responsibility, owners or operators must submit all required reports, submittals, and notifications under subpart H of this part to EPA in an electronic format approved by EPA.	40 CFR §146.91(e)	§5.203(a)(1)(A) Form and filing. Each applicant for a permit to construct and operate a geologic storage facility must file an application with the division in Austin on a form prescribed by the Commission. The applicant must file the application and all attachments with the division and with EPA Region 6 in an electronic format approved by EPA. §5.207(b)(2) The operator must submit all required reports, submittals, and notifications under this subchapter to the director and to the Environmental Protection Agency in an electronic format approved by the 30 director.			
610.	Records shall be retained by the owner or operator as follows:	40 CFR §146.91(f)				

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611.	All data collected under §146.82 for Class VI permit applications shall be retained throughout the life of the geologic sequestration project and for 10 years following site closure.	40 CFR §146.91(f)(1)	§5.206**(l) Retention of records**. The operator must retain for 5 years following storage facility closure records collected during the post-injection storage facility care period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the Commission. **§5.207(e) Record retention**. The operator must retain all wellhead pressure records, metering records, and integrity test results for at least 10 years. The operator must retain all documentation of good faith claim to necessary and sufficient property rights to operate the geologic storage facility until the director issues the final certificate of closure in accordance with §5.206(k)(7) of this title.			
612.	Data on the nature and composition of all injected fluids collected pursuant to §146.90(a) shall be retained until 10 years after site closure. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.	40 CFR §146.91(f)(2)	**§5.206(j)(6)** Storage facility closure report. Once the director has authorized storage facility closure, the operator must submit a storage facility closure report within 90 days that must thereafter be retained by RRC in Austin. The report must include the following information: (C) records reflecting the nature, composition and volume of the CO2 stream. (m) Retention of records. The operator must retain for 10 years following storage facility closure records collected during the post-injection storage facility care period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the Commission.	The state regulations require the operator to provide to these records to the Commission with the closure report. In order to do this, the operator must retain the records.		
613.	Monitoring data collected pursuant to §146.90(b) through (i) shall be retained for 10 years after it is collected.	40 CFR §146.91(f)(3)	**§5.206(k)(6)**			
614.	Well plugging reports, post-injection site care data, including, if appropriate, data and information used to develop the demonstration of the alternative post-injection site care timeframe, and the site closure report collected pursuant to requirements at §§146.93(f) and (h) shall be retained for 10 years following site closure.	40 CFR §146.91(f)(4)	**§5.203(k), §5.206(j) and §5.206(k)(6)**			
615.	The Director has authority to require the owner or operator to retain any records required in this subpart for longer than 10 years after site closure.	40 CFR §146.91(f)(5)	No reference found		The state rule requires the operator to submit the information to the Commission, where the records are retained for as long as the Commission deems necessary.	

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40 CFR §146.92 Injection well plugging.						
616.	Prior to the well plugging, the owner or operator must flush each Class VI injection well with a buffer fluid, determine bottomhole reservoir pressure, and perform a final external mechanical integrity test.	40 CFR §146.92(a)	**§5.203(k) Well plugging plan**. The applicant must submit a well plugging plan for all injection wells and monitoring wells that penetrate the base of usable quality water that includes: (2) proposals for activities to be undertaken prior to plugging an injection well, specifically: (A) flushing each injection well with a buffer fluid; (B) performing tests or measures to determine bottomhole reservoir pressure; (C) performing final tests to assess mechanical integrity;			
617.	*Well Plugging Plan.* The owner or operator of a Class VI well must prepare, maintain, and comply with a plan that is acceptable to the Director. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The well plugging plan must be submitted as part of the permit application and must include the following information:	40 CFR §146.92(b)	**§5.206(i) Well plugging.** The operator of a geologic storage facility must maintain and comply with the approved well plugging plan required by §5.203(k) of this title.			
618.	Appropriate tests or measures for determining bottomhole reservoir pressure;	40 CFR §146.92(b)(1)	**§5.203(k) Well plugging plan**. The applicant must submit a well plugging plan for all injection wells and monitoring wells that penetrate the base of usable quality water that includes: (2) proposals for activities to be undertaken prior to plugging an injection well, specifically: (B) performing tests or measures to determine bottomhole reservoir pressure;			
619.	Appropriate testing methods to ensure external mechanical integrity as specified in §146.89;	40 CFR §146.92(b)(2)	**§5.203(k)(2)** proposals for activities to be undertaken prior to plugging an injection well, specifically: **(C)** performing final tests to assess mechanical integrity; and			
620.	The type and number of plugs to be used;	40 CFR §146.92(b)(3)	**§5.203(k)(1)(A)** the type and number of plugs to be used;			
621.	The placement of each plug, including the elevation of the top and bottom of each plug;	40 CFR §146.92(b)(4)	**§5.203(k)(1)**(B) the placement of each plug, including the elevation of the top and bottom of each plug;			
622.	The type, grade, and quantity of material to be used in plugging. The material must be compatible with the carbon dioxide stream; and	40 CFR §146.92(b)(5)	**§5.203(k)(1)**(C) the type, grade, and quantity of material to be used in plugging and information to demonstrate that the material is compatible with the CO2 stream;			
623.	The method of placement of the plugs.	40 CFR §146.92(b)(6)	**§5.203(k)(1)**		16 TAC §3.14 details required placement of plugs.	

624.	*Notice of intent to plug*. The owner or operator must notify the Director in writing pursuant to §146.91(e), at least 60 days before plugging of a well. At this time, if any changes have been made to the original well plugging plan, the owner or operator must also provide the revised well plugging plan. The Director may allow for a shorter notice period. Any amendments to the injection well plugging plan must be approved by the Director, must be incorporated into the permit, and are subject to the permit modification requirements at §§144.39 or 144.41 of this chapter, as appropriate.	40 CFR §146.92(c)	**§5.203(k) Well plugging plan**. The applicant must submit a well plugging plan for all injection wells and monitoring wells that penetrate the base of usable quality water that includes: (3) a proposal for giving notice of intent to plug monitoring wells that penetrate the base of usable quality water and all injection wells. The applicant's plan must ensure that: (A) the operator notifies the director at least 60 days before plugging a well. At this time, if any changes have been made to the original well plugging plan, the operator must also provide a revised well plugging plan. At the discretion of the director, an operator may be allowed to proceed with well plugging on a shorter notice period; and (B) the operator will file a notice of intention to plug and abandon (Form W-3A) a well with the appropriate Commission district office and the division in Austin at least five days prior to the beginning of plugging operations;			
625.	*Plugging report.* Within 60 days after plugging, the owner or operator must submit, pursuant to §146.91(e), a plugging report to the Director. The report must be certified as accurate by the owner or operator and by the person who performed the plugging operation (if other than the owner or operator.) The owner or operator shall retain the well plugging report for 10 years following site closure.	40 CFR §146.92(d)	**§5.203(k) Well plugging plan**. The applicant must submit a well plugging plan for all injection wells and monitoring wells that penetrate the base of usable quality water that includes: (4) a plugging report for monitoring wells that penetrate the base of usable quality water and all injection wells. The applicant's plan must ensure that within 30 days after plugging the operator will file a complete well plugging record (Form W-3) in duplicate with the appropriate district office. The operator and the person who performed the plugging operation (if other than the operator) must certify the report as accurate. Within 60 days after plugging, the owner or operator must submit a plugging report to the Director. The report must be certified as accurate by the owner or operator and by the person who performed the plugging operation (if other than the owner or operator.) The owner or operator shall retain the well plugging report for 10 years following site closure. **§5.206(m)** Retention of records. The operator must retain for 10 years following storage facility closure records collected during the post-injection storage facility care period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the Commission.			

40 CFR §146.93 Post-injection site care and site closure.						
626.	The owner or operator of a Class VI well must prepare, maintain, and comply with a plan for post-injection site care and site closure that meets the requirements of paragraph (a)(2) of this section and is acceptable to the Director. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.	40 CFR §146.93(a)	**§5.203(m) Post-injection storage facility care and closure plan**. The applicant must submit a post-injection storage facility care and closure plan. **§5.206(k) Post-injection storage facility care and closure.** (1) Post-injection storage facility care and closure plan. (A) The operator of an injection well must maintain and comply with the approved post-injection storage facility care and closure plan. (B) The operator must update the plan in accordance with §5.207(a)(2)(D)(vi) of this title. (C) Upon cessation of injection, the operator of a geologic storage facility must either submit an amended plan or demonstrate to the director through monitoring data and modeling results that no amendment to the plan is needed. **§5.206(a)** Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this chapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.			
627.	The owner or operator must submit the post-injection site care and site closure plan as a part of the permit application to be approved by the Director.	40 CFR §146.93(a)(1)	**§5.203(k) Post-injection storage facility care and closure plan**. The applicant must submit a post-injection storage facility care and closure plan.			
628.	The post-injection site care and site closure plan must include the following information:	40 CFR §146.93(a)(2)	**§5.203(k) Post-injection storage facility care and closure plan**. The applicant must submit a post-injection storage facility care and closure plan. The plan must include:			
629.	The pressure differential between pre-injection and predicted post-injection pressures in the injection zone(s);	40 CFR §146.93(a)(2)(i)	**§5.203(k)**(1) the pressure differential between pre-injection and predicted post-injection pressures in the injection zone;.			
630.	The predicted position of the carbon dioxide plume and associated pressure front at site closure as demonstrated in the area of review evaluation required under §146.84(c)(1);	40 CFR §146.93(a)(2)(ii)	**§5.203(k)**(2) the predicted position of the CO 2 plume and associated pressure front at closure as demonstrated in the AoR evaluation required under subsection (d) of this section;			
631.	A description of post-injection monitoring location, methods, and proposed frequency;	40 CFR §146.93(a)(2)(iii)	**§5.203(k)**(3) a description of the proposed post-injection monitoring location, methods, and frequency;			
632.	A proposed schedule for submitting post-injection site care monitoring results to the Director pursuant to §146.91(e); and,	40 CFR §146.93(a)(2)(iv)	**§5.203(k)**(4) a proposed schedule for submitting post-injection storage facility care monitoring results to the division; and			

633.	The duration of the post-injection site care timeframe and, if approved by the Director, the demonstration of the alternative post-injection site care timeframe that ensures non-endangerment of USDWs.	40 CFR §146.93(a)(2)(v)	**§5.206(k)(1)** Post-injection storage facility care and closure plan. (A) The operator of an injection well must maintain and comply with the approved post-injection storage facility care and closure plan. (B) The operator must update the plan in accordance with §5.207(a)(2)(D)(vi) of this title. (C) Upon cessation of injection, the operator of a geologic storage facility must either submit an amended plan or demonstrate to the director through monitoring data and modeling results that no amendment to the plan is needed. (2) Post-injection storage facility monitoring. Following cessation of injection, the operator must continue to conduct monitoring as specified in the approved plan until the director determines that the position of the CO2 plume and pressure front are such that the geologic storage facility will not endanger underground sources of drinking water. (3) Prior to closure. Prior to authorization for storage facility closure, the operator must demonstrate to the director, based on monitoring, other site-specific data, and modeling that is reasonably consistent with site performance that no additional monitoring is needed to assure that the geologic storage facility will not endanger USDWs. The operator must demonstrate, based on the current understanding of the site, including monitoring data and/or modeling, all of the following: (A) the estimated magnitude and extent of the facility footprint (the CO2 plume and the area of elevated pressure); (B) that there is no leakage of either CO2 or displaced formation fluids that will endanger USDWs; (C) that the injected or displaced fluids are not expected to migrate in the future in a manner that encounters a potential leakage pathway into USDWs; (D) that the injection wells at the site completed into or through the injection zone or confining zone will be plugged and abandoned in accordance with these requirements; and (E) any remaining facility monitoring wells will be properly plugged or are being managed by a person and in a manner approved by the director.		Alternative PICS timeframe required for all projects.	
634.	Upon cessation of injection, owners or operators of Class VI wells must either submit an amended post-injection site care and site closure plan or demonstrate to the Director through monitoring data and modeling results that no amendment to the plan is needed. Any amendments to the post-injection site care and site closure plan must be approved by the Director, be incorporated into the permit, and are subject to the permit modification requirements at §§144.39 or 144.41 of this chapter, as appropriate.	40 CFR §146.93(a)(3)	**§5.206(k)(1)**(C) Upon cessation of injection, the owner or operator of a geologic storage facility must either submit an amended plan or demonstrate to the director through monitoring data and modeling results that no amendment to the plan is needed. Any amendments to the post-injection site care and site closure must be approved by the Director, be incorporated into the permit, and are subject to the permit modification requirements of §5.202 (d) of this chapter as appropriate.			

635.	At any time during the life of the geologic sequestration project, the owner or operator may modify and resubmit the post-injection site care and site closure plan for the Director's approval within 30 days of such change.	40 CFR §146.93(a)(4)	**§5.206(k)(B)** At any time during the life of the geologic sequestration project, the owner or operator may modify and resubmit the post-injection site care and site closure plan for the Director's approval within 30 days of such change.		AMEND?	
636.	The owner or operator shall monitor the site following the cessation of injection to show the position of the carbon dioxide plume and pressure front and demonstrate that USDWs are not being endangered.	40 CFR §146.93(b)	**§5.206(k)**(2) Post-injection storage facility monitoring. Following cessation of injection, the owner or operator must continue to conduct monitoring as specified in the Director-approved post-injection site care and site closure plan until the director determines that the position of the CO2 plume and pressure front are such that the geologic storage facility will not endanger USDW,			
637.	Following the cessation of injection, the owner or operator shall continue to conduct monitoring as specified in the Director-approved post-injection site care and site closure plan for at least 50 years or for the duration of the alternative timeframe approved by the Director pursuant to requirements in paragraph © of this section, unless he/she makes a demonstration under (b)(2) of this section. The monitoring must continue until the geologic sequestration project no longer poses an endangerment to USDWs and the demonstration under (b)(2) of this section is submitted and approved by the Director.	40 CFR §146.93(b)(1)	**§5.206(k)(2)** Post-injection storage facility monitoring. Following cessation of injection, the operator must continue to conduct monitoring as specified in the approved plan until the director determines that the position of the CO2 plume and pressure front are such that the geologic storage facility will not endanger USDWs.			
638.	If the owner or operator can demonstrate to the satisfaction of the Director before 50 years or prior to the end of the approved alternative timeframe based on monitoring and other site-specific data, that the geologic sequestration project no longer poses an endangerment to USDWs, the Director may approve an amendment to the post-injection site care and site closure plan to reduce the frequency of monitoring or may authorize site closure before the end of the 50-year period or prior to the end of the approved alternative timeframe, where he or she has substantial evidence that the geologic sequestration project no longer poses a risk of endangerment to USDWs.	40 CFR §146.93(b)(2)	**§5.206(k)(2)** Post-injection storage facility monitoring. Following cessation of injection, the operator must continue to conduct monitoring as specified in the approved plan until the director determines that the position of the CO2 plume and pressure front are such that the geologic storage facility will not endanger underground sources of drinking water.		All applicants are required o determine alternative PISC timeframe.	

639.	Prior to authorization for site closure, the owner or operator must submit to the Director for review and approval a demonstration, based on monitoring and other site-specific data, that no additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to USDWs.	40 CFR §146.93(b)(3)	**§5.206(k)(3)** Prior to closure. Prior to authorization for storage facility closure, the operator must demonstrate to the director, based on monitoring, other site-specific data, and modeling that is reasonably consistent with site performance that no additional monitoring is needed to assure that the GS facility will not endanger USDWs. The operator must demonstrate, based on the current understanding of the site, including monitoring data and/or modeling, all of the following: (A) the estimated magnitude and extent of the facility footprint (the CO2 plume and the area of elevated pressure); (B) that there is no leakage of either CO2 or displaced formation fluids that will endanger underground sources of drinking water; (C) that the injected or displaced fluids are not expected to migrate in the future in a manner that encounters a potential leakage pathway into USDWs; (D) that the injection wells at the site completed into or through the injection zone or confining zone will be plugged and abandoned in accordance with these requirements; and (E) any remaining facility monitoring wells will be properly plugged or are being managed by a person and in a manner approved by the director.			
640.	If the demonstration in paragraph (b)(3) of this section cannot be made (i.e., additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to USDWs) at the end of the 50-year period or at the end of the approved alternative timeframe, or if the Director does not approve the demonstration, the owner or operator must submit to the Director a plan to continue post-injection site care until a demonstration can be made and approved by the Director.	40 CFR §146.93(b)(4)			PISC required until demonstration made	
641.	*Demonstration of alternative post-injection site care timeframe*. At the Director's discretion, the Director may approve, in consultation with EPA, an alternative post-injection site care timeframe other than the 50 year default, if an owner or operator can demonstrate during the permitting process that an alternative post-injection site care timeframe is appropriate and ensures non-endangerment of USDWs. The demonstration must be based on significant, site-specific data and information including all data and information collected pursuant to §§146.82 and 146.83, and must contain substantial evidence that the geologic sequestration project will no longer pose a risk of endangerment to USDWs at the end of the alternative post-injection site care timeframe.	40 CFR §146.93(c)	No reference		All applicants required to determine alternative PISC timeframe.	
642.	A demonstration of an alternative post-injection site care timeframe must include consideration and documentation of:	40 CFR §146.93(c)(1)	**§5.203(m) Post-injection storage facility care and closure plan**. The applicant must submit a post-injection storage facility care and closure plan. The plan must include: (7) consideration and documentation of:			

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643.	The results of computational modeling performed pursuant to delineation of the area of review under §146.84;	40 CFR §146.93(c)(1)(i)	§5.203(m)(7)(i) the results of computational modeling performed pursuant to delineation of the AOR under subsection (d) of this section;			
644.	The predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any USDWs; and/or the timeframe for pressure decline to pre-injection pressures;	40 CFR §146.93(c)(1)(ii)	§5.203(m)(7)(ii) the predicted timeframe for pressure decline within the injection zone, and any other zones, such that formation fluids may not be forced into any USDWs, and/or the timeframe for pressure decline to pre-injection pressures;			
645.	The predicted rate of carbon dioxide plume migration within the injection zone, and the predicted timeframe for the cessation of migration;	40 CFR §146.93(c)(1)(iii)	§5.203(m)(7)(iii) the predicted rate of CO2 plume migration within the injection zone, and the predicted timeframe for the cessation of migration;			
646.	A description of the site-specific processes that will result in carbon dioxide trapping including immobilization by capillary trapping, dissolution, and mineralization at the site;	40 CFR §146.93(c)(1)(iv)	§5.203(m)(7) (iv) a description of the site-specific processes that will result in CO2 trapping including immobilization by capillary trapping, dissolution, and mineralization at the site;			
647.	The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, and/or mineral phase;	40 CFR §146.93(c)(1)(v)	§5.203(m)(7) (v) the predicted rate of CO2 trapping in the immobile capillary phase, dissolved phase, and/or mineral phase;			
648.	The results of laboratory analyses, research studies, and/or field or site-specific studies to verify the information required in paragraphs (iv) and (v) of this section;	40 CFR §146.93(c)(1)(vi)	§5.203(m)(7)(vi) the results of laboratory analyses, research studies, and/or field or site-specific studies to verify the information required in subparagraphs (iv) and (v) of this paragraph;			
649.	A characterization of the confining zone(s) including a demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., carbon dioxide, formation fluids) movement;	40 CFR §146.93(c)(1)(vii)	§5.203(m)(7)(vii) a characterization of the confining zone(s) including a demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., CO2, formation fluids) movement;			
650.	The presence of potential conduits for fluid movement including planned injection wells and project monitoring wells associated with the proposed geologic sequestration project or any other projects in proximity to the predicted/modeled, final extent of the carbon dioxide plume and area of elevated pressure;	40 CFR §146.93(c)(1)(viii)	§5.203(m)(7) (viii) the presence of potential conduits for fluid movement including planned injection wells and project monitoring wells associated with the proposed geologic storage project or any other projects in proximity to the predicted/modeled, final extent of the CO2 plume and area of elevated pressure;			
651.	A description of the well construction and an assessment of the quality of plugs of all abandoned wells within the area of review;	40 CFR §146.93(c)(1)(ix)	§5.203(m)(7) (ix) a description of the well construction and an assessment of the quality of plugs of all abandoned wells within the AOR;			
652.	The distance between the injection zone and the nearest USDWs above and/or below the injection zone; and	40 CFR §146.93(c)(1)(x)	§5.203(m)(7) (x) the distance between the injection zone and the nearest USDWs above and/or below the injection zone;			
653.	Any additional site-specific factors required by the Director.	40 CFR §146.93(c)(1)(xi)	§5.203(m)(7)(xi) any additional site-specific factors required by the Director;			
654.	Information submitted to support the demonstration in paragraph (c)(1) of this section must meet the following criteria:	40 CFR §146.93(c)(2)	§5.203(m)(8) information submitted to support the demonstration in paragraph (1) of this subsection, which shall meet the following criteria:			
655.	All analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards;	40 CFR §146.93(c)(2)(i)	§5.203(m)(8)(i) all analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards;			

656.	Estimation techniques must be appropriate and EPA-certified test protocols must be used where available;	40 CFR §146.93(c)(2)(ii)	§5.203(m)(8)(ii) estimation techniques must be appropriate and EPA-certified test protocols must be used where available;			
657.	Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream and injection and site conditions over the life of the geologic sequestration project;	40 CFR §146.93(c)(2)(iii)	§5.203(m)(8)(iii) predictive models must be appropriate and tailored to the site conditions, composition of the CO2 stream, and injection and site conditions over the life of the geologic storage project;			
658.	Predictive models must be calibrated using existing information (e.g., at Class I, Class II, or Class V experimental technology well sites) where sufficient data are available;	40 CFR §146.93(c)(2)(iv)	§5.203(m)(8)(iv) predictive models must be calibrated using existing information where sufficient data are available;			
659.	Reasonably conservative values and modeling assumptions must be used and disclosed to the Director whenever values are estimated on the basis of known, historical information instead of site-specific measurements;	40 CFR §146.93(c)(2)(v)	§5.203(m)(8)(v) reasonably conservative values and modeling assumptions must be used and disclosed to the Director whenever values are estimated on the basis of known, historical information instead of site-specific measurements;			
660.	An analysis must be performed to identify and assess aspects of the alternative post-injection site care timeframe demonstration that contribute significantly to uncertainty. The owner or operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration.	40 CFR §146.93(c)(2)(vi)	§5.203(m)(8)(vi) an analysis must be performed to identify and assess aspects of the alternative PISC timeframe demonstration that contribute significantly to uncertainty. The operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration;			
661.	An approved quality assurance and quality control plan must address all aspects of the demonstration; and,	40 CFR §146.93(c)(2)(vii)	§5.203(m)(8)(i)(vii) an approved quality assurance and quality control plan must address all aspects of the demonstration;			
662.	Any additional criteria required by the Director.	40 CFR §146.93(c)(2)(viii)	§5.203(m)(8)(viii) any additional criteria required by the Director.			
663.	*Notice of intent for site closure.* The owner or operator must notify the Director in writing at least 120 days before site closure. At this time, if any changes have been made to the original post-injection site care and site closure plan, the owner or operator must also provide the revised plan. The Director may allow for a shorter notice period.	40 CFR §146.93(d)	**§5.206(k)(4)** Notice of intent for storage facility closure. The operator must notify the director in writing at least 120 days before storage facility closure. At the time of such notice, if the operator has made any changes to the original plan, the operator also must provide the revised plan. The director may approve a shorter notice period.			
664.	After the Director has authorized site closure, the owner or operator must plug all monitoring wells in a manner which will not allow movement of injection or formation fluids that endangers a USDW.	40 CFR §146.93(e)	**§5.206(k)(6)** Storage facility closure report. Once the director has authorized storage facility closure, the operator must submit a storage facility closure report within 90 days that must thereafter be retained by the Commission in Austin. The report must include the following information: (A) documentation of appropriate injection and monitoring well plugging. The operator must provide a copy of a survey plat that has been submitted to the Regional Administrator of Region 6 of the USEPA. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks;			
665.	The owner or operator must submit a site closure report to the Director within 90 days of site closure, which must thereafter be retained at a location designated by the Director for 10 years. The report must include:	40 CFR §146.93(f)	**§5.206(k)(6)** Storage facility closure report. Once the director has authorized storage facility closure, the operator must submit a storage facility closure report within 90 days that must thereafter be retained by the Commission in Austin. The report must include the following information:			

666.	Documentation of appropriate injection and monitoring well plugging as specified in §146.92 and paragraph (e) of this section. The owner or operator must provide a copy of a survey plat which has been submitted to the local zoning authority designated by the Director. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to the Regional Administrator of the appropriate EPA Regional Office;	40 CFR §146.93(f)(1)	**§5.206(k)(6)(A)** documentation of appropriate injection and monitoring well plugging. The operator must provide a copy of a survey plat that has been submitted to the Regional Administrator of Region 6 of the USEPA. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks;			
667.	Documentation of appropriate notification and information to such State, local and Tribal authorities that have authority over drilling activities to enable such State, local, and Tribal authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zone(s); and	40 CFR §146.93(f)(2)	**§5.206(k)(6)(B)** documentation of appropriate notification and information to such state and local authorities as have authority over drilling activities to enable such state and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zones;			
668.	Records reflecting the nature, composition, and volume of the carbon dioxide stream.	40 CFR §146.93(f)(3)	**§5.206(k)(6)(C)** records reflecting the nature, composition and volume of the CO2 stream.			
669.	Each owner or operator of a Class VI injection well must record a notation on the deed to the facility property or any other document that is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:	40 CFR §146.93(g)	**§5.206(l) Deed notation**. The operator of a geologic storage facility must record a notation on the deed to the facility property; on any other document that is normally examined during title search; or on any other document that is acceptable to the county clerk for filing in the official public records of the county that will in perpetuity provide any potential purchaser of the property the following information:			
670.	The fact that land has been used to sequester carbon dioxide;	40 CFR §146.93(g)(1)	**(l)**(2) that land has been used to geologically store CO2;			
671.	The name of the State agency, local authority, and/or Tribe with which the survey plat was filed, as well as the address of the Environmental Protection Agency Regional Office to which it was submitted; and	40 CFR §146.93(g)(2)	**§5.206(l)**(3) that the survey plat has been filed with the Commission; (4) the address of the office of the USEPA, Region 6, to which the operator sent a copy of the survey plat;			
672.	The volume of fluid injected, the injection zone or zones into which it was injected, and the period over which injection occurred.	40 CFR §146.93(g)(3)	**§5.206(l)**(5) the volume of fluid injected, the injection zone or zones into which it was injected, and the period over which injection occurred.			
673.	The owner or operator must retain for 10 years following site closure, records collected during the post-injection site care period. The owner or operator must deliver the records to the Director at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Director for that purpose.	40 CFR §146.93(h)	**§5.206(m) Retention of records**. The operator must retain for ten years following storage facility closure records collected during the post-injection storage facility care period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the Commission. **§5.207(e) Record Retention**			

40 CFR §146.94 Emergency and remedial response.						
674.	As part of the permit application, the owner or operator must provide the Director with an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids that may cause an endangerment to a USDW during construction, operation, and post-injection site care periods. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.	40 CFR §146.94(a)	**§5.203(n) Emergency and remedial response plan**. The applicant must submit an emergency and remedial response plan that: (1) accounts for the entire area of review, regardless of whether or not corrective action in the area of review is phased; (2) describes actions to be taken to address escape from the permitted injection interval or movement of the injection fluids or formation fluids that may cause an endangerment to underground sources of drinking water during construction, operation, closure, and post-closure periods; (3) includes a safety plan that includes emergency response procedures, provisions to provide security against unauthorized activity, and CO2 release detection and prevention measures; and (4) includes a description of the training and testing that will be provided to each employee at the storage facility on operational safety and emergency response procedures to the extent applicable to the employee's duties and responsibilities. The operator must train all employees before commencing injection and storage operations at the facility. The operator must train each subsequently hired employee before that employee commences work at the storage facility. The operator must hold a safety meeting with each contractor prior to the commencement of any new contract work at a storage facility. Emergency measures specific to the contractor's work must be explained in the contractor safety meeting. Training schedules, training dates, and course outlines must be provided to Commission personnel upon request for the purpose of Commission review to determine compliance with this paragraph. **§5.206(a)(1)**(a) Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this chapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.			
675.	If the owner or operator obtains evidence that the injected carbon dioxide stream and associated pressure front may cause an endangerment to a USDW, the owner or operator must:	40 CFR §146.94(b)	**§5.203(g)(3)** Action. If an operator obtains evidence that the injected CO2 stream and associated pressure front may cause an endangerment to underground sources of drinking water, the operator must:			
676.	Immediately cease injection;	40 CFR §146.94(b)(1)	**§5.203(g)(3)(A)** immediately cease injection;			
677.	Take all steps reasonably necessary to identify and characterize any release;	40 CFR §146.94(b)(2)	**§5.203(g)(3)(B)** take all steps reasonably necessary to identify and characterize any release;			
678.	Notify the Director within 24 hours; and	40 CFR §146.94(b)(3)	**§5.203(g)(3)(C)** notify the director as soon as practicable but within at least 24 hours; and			

679.	Implement the emergency and remedial response plan approved by the Director.	40 CFR §146.94(b)(4)	**§5.203(g)(3)(D)** implement the approved emergency and remedial response plan.			
680.	The Director may allow the operator to resume injection prior to remediation if the owner or operator demonstrates that the injection operation will not endanger USDWs.	40 CFR §146.94(c)	**§5.203(g)(4)** Resumption of injection. The director may allow the operator to resume injection prior to remediation if the operator demonstrates that the injection operation will not endanger USDW.			
681.	The owner or operator shall periodically review the emergency and remedial response plan developed under paragraph (a) of this section. In no case shall the owner or operator review the emergency and remedial response plan less often than once every five years. Based on this review, the owner or operator shall submit an amended emergency and remedial response plan or demonstrate to the Director that no amendment to the emergency and remedial response plan is needed. Any amendments to the emergency and remedial response plan must be approved by the Director, must be incorporated into the permit, and are subject to the permit modification requirements at §§144.39 or 144.41 of this chapter, as appropriate. Amended plans or demonstrations shall be submitted to the Director as follows:	40 CFR §146.94(d)	**§5.207(a)(2)(D)Annual reports.** The operator must submit an annual report detailing: (vi) The operator must maintain and update required plans in accordance with the provisions of this subchapter. (I) Operators must submit an annual statement, signed by an appropriate company official, confirming that the operator has: (-a-) reviewed the monitoring and operational data that are relevant to a decision on whether to reevaluate the area of review and the monitoring and operational data that are relevant to a decision on whether to update an approved plan required by §5.203 or §5.206 of this title; and (-b-) determined whether any updates were warranted by material change in the monitoring and operational data or in the evaluation of the monitoring and operational data by the operator. (II) Operators must submit either the updated plan or a summary of the modifications for each plan for which an update the operator determined to be warranted pursuant to subclause (I) of this clause. The director may require submission of copies of any updated plans and/or additional information regarding whether or not updates of any particular plans are warranted.			
682.	Within one year of an area of review reevaluation;	40 CFR §146.94(d)(1)	§5.207 – annual report required			
683.	Following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the Director; or	40 CFR §146.94(d)(2)	**§5.207(a)(3)** The director may require the revision of any required plan following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the director or whenever the director determines that such a revision is necessary to comply with the requirements of this subchapter.			
684.	When required by the Director.	40 CFR §146.94(d)(3)	**§5.207(a)(3)** The director may require the revision of any required plan following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the director or whenever the director determines that such a revision is necessary to comply with the requirements of this subchapter.			

40 CFR §146.95 Class VI injection depth waiver requirements.						
685.	This section sets forth information which an owner or operator seeking a waiver of the Class VI injection depth requirements must submit to the Director; information the Director must consider in consultation with all affected Public Water System Supervision Directors; the procedure for Director – Regional Administrator communication and waiver issuance; and the additional requirements that apply to owners or operators of Class VI wells granted a waiver of the injection depth requirements.	40 CFR §146.95	**§5.201(f)** Injection depth waiver. An operator may seek a waiver from the Class VI injection depth requirements for geologic storage to allow injection into non-USDW formations while ensuring that USDWs above and below the injection zone are protected from endangerment. An operator seeking a waiver of the requirement to inject below the lowermost USDW shall submit, concurrent with the permit application, a supplemental report that complies with 40 20 CFR §146.95. The Commission adopts 40 CFR §146.95 by reference, effective July 1, 2022.			
686.	In seeking a waiver of the requirement to inject below the lowermost USDW, the owner or operator must submit a supplemental report concurrent with permit application. The supplemental report must include the following,	40 CFR §146.95(a)	**§5.201(f)**			
687.	A demonstration that the injection zone(s) is/are laterally continuous, is not a USDW, and is not hydraulically connected to USDWs; does not outcrop; has adequate injectivity, volume, and sufficient porosity to safely contain the injected carbon dioxide and formation fluids; and has appropriate geochemistry.	40 CFR §146.95(a)(1)	**§5.201(f)**			
688.	A demonstration that the injection zone(s) is/are bounded by laterally continuous, impermeable confining units above and below the injection zone(s) adequate to prevent fluid movement and pressure buildup outside of the injection zone(s); and that the confining unit(s) is/are free of transmissive faults and fractures. The report shall further characterize the regional fracture properties and contain a demonstration that such fractures will not interfere with injection, serve as conduits, or endanger USDWs.	40 CFR §146.95(a)(2)	**§5.201(f)**			
689.	A demonstration, using computational modeling, that USDWs above and below the injection zone will not be endangered as a result of fluid movement. This modeling should be conducted in conjunction with the area of review determination, as described in §146.84, and is subject to requirements, as described in §146.84(c), and periodic reevaluation, as described in §146.84(e).	40 CFR §146.95(a)(3)	**§5.201(f)**			
690.	A demonstration that well design and construction, in conjunction with the waiver, will ensure isolation of the injectate in lieu of requirements at 146.86(a)(1) and will meet well construction requirements in paragraph (f) of this section.	40 CFR §146.95(a)(4)	**§5.201(f)**			
691.	A description of how the monitoring and testing and any additional plans will be tailored to the geologic sequestration project to ensure protection of USDWs above and below the injection zone(s), if a waiver is granted.	40 CFR §146.95(a)(5)	**§5.201(f)**			

692.	Information on the location of all the public water supplies affected, reasonably likely to be affected, or served by USDWs in the area of review.	40 CFR §146.95(a)(6)	**§5.201(f)**			
693.	Any other information requested by the Director to inform the Regional Administrator's decision to issue a waiver.	40 CFR §146.95(a)(7)	**§5.201(f)**			
694.	To inform the Regional Administrator's decision on whether to grant a waiver of the injection depth requirements at §§144.6 of this chapter, 146.5(f), and 146.86(a)(1), the Director must submit, to the Regional Administrator, documentation of the following :	40 CFR §146.95(b)	**§5.201(f)**			
695.	An evaluation of the following information as it relates to siting, construction, and operation of a geologic sequestration project with a waiver:	40 CFR §146.95(b)(1)	**§5.201(f)**			
696.	The integrity of the upper and lower confining units;	40 CFR §146.95(b)(1)(i)	**§5.201(f)**			
697.	The suitability of the injection zone(s) (e.g., lateral continuity; lack of transmissive faults and fractures; knowledge of current or planned artificial penetrations into the injection zone(s) or formations below the injection zone);	40 CFR §146.95(b)(1)(ii)	**§5.201(f)**			
698.	The potential capacity of the geologic formation(s) to sequester carbon dioxide, accounting for the availability of alternative injection sites;	40 CFR §146.95(b)(1)(iii)	**§5.201(f)**			
699.	All other site characterization data, the proposed emergency and remedial response plan, and a demonstration of financial responsibility;	40 CFR §146.95(b)(1)(iv)	**§5.201(f)**			
700.	Community needs, demands, and supply from drinking water resources;	40 CFR §146.95(b)(1)(v)	**§5.201(f)**			
701.	Planned needs, potential and/or future use of USDWs and non-USDWs in the area;	40 CFR §146.95(b)(1)(vi)	**§5.201(f)**			
702.	Planned or permitted water, hydrocarbon, or mineral resource exploitation potential of the proposed injection formation(s) and other formations both above and below the injection zone to determine if there are any plans to drill through the formation to access resources in or beneath the proposed injection zone(s)/formation(s);	40 CFR §146.95(b)(1)(vii)	**§5.201(f)**			
703.	The proposed plan for securing alternative resources or treating USDW formation waters in the event of contamination related to the Class VI injection activity; and,	40 CFR §146.95(b)(1)(viii)	**§5.201(f)**			
704.	Any other applicable considerations or information requested by the Director.	40 CFR §146.95(b)(1)(ix)	**§5.201(f)**			
705.	Consultation with the Public Water System Supervision Directors of all States and Tribes having jurisdiction over lands within the area of review of a well for which a waiver is sought.	40 CFR §146.95(b)(2)	**§5.201(f)**			

706.	Any written waiver-related information submitted by the Public Water System Supervision Director(s) to the (UIC) Director.	40 CFR §146.95(b)(3)	**§5.201(f)**			
707.	Pursuant to requirements at §124.10 of this chapter and concurrent with the Class VI permit application notice process, the Director shall give public notice that a waiver application has been submitted. The notice shall clearly state:	40 CFR §146.95(c)	**§5.201(f)**			
708.	The depth of the proposed injection zone(s);	40 CFR §146.95(c)(1)	**§5.201(f)**			
709.	The location of the injection well(s);	40 CFR §146.95(c)(2)	**§5.201(f)**			
710.	The name and depth of all USDWs within the area of review;	40 CFR §146.95(c)(3)	**§5.201(f)**			
711.	A map of the area of review;	40 CFR §146.95(c)(4)	**§5.201(f)**			
712.	The names of any public water supplies affected, reasonably likely to be affected, or served by USDWs in the area of review; and,	40 CFR §146.95(c)(5)	**§5.201(f)**			
713.	The results of UIC-Public Water System Supervision consultation required under paragraph (b)(2) of this section.	40 CFR §146.95(c)(6)	**§5.201(f)**			
714.	Following public notice, the Director shall provide all information received through the waiver application process to the Regional Administrator. Based on the information provided, the Regional Administrator shall provide written concurrence or non-concurrence regarding waiver issuance.	40 CFR §146.95(d)	**§5.201(f)**			
715.	If the Regional Administrator determines that additional information is required to support a decision, the Director shall provide the information. At his or her discretion, the Regional Administrator may require that public notice of the new information be initiated.	40 CFR §146.95(d)(1)	**§5.201(f)**			
716.	In no case shall a Director of a State-approved program issue a waiver without receipt of written concurrence from the Regional Administrator.	40 CFR §146.95(d)(2)	**§5.201(f)**			
717.	If a waiver is issued, within 30 days of waiver issuance, EPA shall post the following information on the Office of Water's Web site:	40 CFR §146.95(e)	**§5.201(f)**			
718.	The depth of the proposed injection zone(s);	40 CFR §146.95(e)(1)	**§5.201(f)**			
719.	The location of the injection well(s);	40 CFR §146.95(e)(2)	**§5.201(f)**			
720.	The name and depth of all USDWs within the area of review;	40 CFR §146.95(e)(3)	**§5.201(f)**			
721.	A map of the area of review;	40 CFR §146.95(e)(4)	**§5.201(f)**			
722.	The names of any public water supplies affected, reasonably likely to be affected, or served by USDWs in the area of review; and	40 CFR §146.95(e)(5)	**§5.201(f)**			
723.	The date of waiver issuance.	40 CFR §146.95(e)(6)	**§5.201(f)**			

724.	Upon receipt of a waiver of the requirement to inject below the lowermost USDW for geologic sequestration, the owner or operator of the Class VI well must comply with:	40 CFR §146.95(f)	**§5.201(f)**			
725.	All requirements at §§146.84, 146.85, 146.87, 146.88, 146.89, 146.91, 146.92, and 146.94;	40 CFR §146.95(f)(1)	**§5.201(f)**			
726.	All requirements at §146.86 with the following modified requirements:	40 CFR §146.95(f)(2)	**§5.201(f)**			
727.	The owner or operator must ensure that Class VI wells with a waiver are constructed and completed to prevent movement of fluids into any unauthorized zones including USDWs, in lieu of requirements at §146.86(a)(1).	40 CFR §146.95(f)(2)(i)	**§5.201(f)**			
728.	The casing and cementing program must be designed to prevent the movement of fluids into any unauthorized zones including USDWs in lieu of requirements at §146.86(b)(1).	40 CFR §146.95(f)(2)(ii)	**§5.201(f)**			
729.	The surface casing must extend through the base of the nearest USDW directly above the injection zone and be cemented to the surface; or, at the Director's discretion, another formation above the injection zone and below the nearest USDW above the injection zone.	40 CFR §146.95(f)(2)(iii)	**§5.201(f)**			
730.	All requirements at §146.90 with the following modified requirements:	40 CFR §146.95(f)(3)	**§5.201(f)**			
731.	The owner or operator shall monitor the groundwater quality, geochemical changes, and pressure in the first USDWs immediately above and below the injection zone(s); and in any other formations at the discretion of the Director.	40 CFR §146.95(f)(3)(i)	**§5.201(f)**			
732.	Testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (e.g., the pressure front) by using direct methods to monitor for pressure changes in the injection zone(s); and, indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the Director determines, based on site-specific geology, that such methods are not appropriate.	40 CFR §146.95(f)(3)(ii)	**§5.201(f)**			
733.	All requirements at §146.93 with the following, modified post-injection site care monitoring requirements:	40 CFR §146.95(f)(4)	**§5.201(f)**			
734.	The owner or operator shall monitor the groundwater quality, geochemical changes and pressure in the first USDWs immediately above and below the injection zone; and in any other formations at the discretion of the Director.	40 CFR §146.95(f)(4)(i)	**§5.201(f)**			

735.	Testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (e.g., the pressure front) by using direct methods in the injection zone(s); and indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the Director determines based on site-specific geology, that such methods are not appropriate;	40 CFR §146.95(f)(4)(ii)	**§5.201(f)**			
736.	Any additional requirements requested by the Director designed to ensure protection of USDWs above and below the injection zone(s).	40 CFR §146.95(f)(5)	**§5.201(f)**			