2010 RULE CHANGES

RULES AND REGULATIONS
NORTH DAKOTA ADMINISTRATIVE CODE
CHAPTER 43-02-03 (OIL & GAS)
CHAPTER 43-02-04.1 (CARBON DIOXIDE STORAGE)
CHAPTER 43-02-12 (GEOPHYSICAL EXPLORATION)

GENERAL RULES AND REGULATIONS
CHAPTER 43-02-03

43-02-03-16. APPLICATION FOR PERMIT TO DRILL AND RECOMPLETE. Before any person shall begin any well-site preparation for the drilling of any well other than surveying and staking, such person shall file an application for permit to drill (form 1) with the director, together with a permit fee of one hundred dollars. Verbal approval may be given for site preparation by the director in extenuating circumstances. No drilling activity shall commence until such application is approved and a permit to drill is issued by the director. The application must be accompanied by the bond pursuant to section 43-02-03-15 or the applicant must have previously filed such bond with the commission, otherwise the application is incomplete. An incomplete application received by the commission has no standing and will not be deemed filed until it is completed.

The application for permit to drill shall be accompanied by an accurate plat certified by a registered surveyor showing the location of the proposed well with reference to the nearest lines of a governmental section. The plat shall also include latitude and longitude of the proposed well location to the nearest tenth of a second. Information to be included in such application shall be the proposed depth to which the well will be drilled, estimated depth to the top of important markers, estimated depth to the top of objective horizons, the proposed mud program, the proposed casing program, including size and weight thereof, the depth at which each casing string is to be set, <u>the proposed pad layout, including cut and fill diagrams,</u> and the proposed amount of cement to be used, including the estimated top of cement.

Prior to the commencement of recompletion operations or drilling horizontally in the existing pool, an application for permit shall be filed with the director. Included in such application shall be the notice of intention (form 4) to reenter a well by drilling horizontally, deepening, or plugging back to any source of supply other than the producing horizon in an existing well. Such notice shall include the name and file number and exact location of the well, the approximate date operations will begin, the proposed procedure, the estimated completed total depth, the casing program to be followed, and the original total depth with a permit fee of fifty dollars.

The applicant shall provide all information, in addition to that specifically required by this section, if requested by the director. The director may impose such terms and conditions on the permits issued under this section as the director deems necessary.

The director shall deny an application for a permit under this section if the proposal would cause, or tend to cause, waste or violate correlative rights. The director of oil and gas shall state in writing to the applicant the reason for the denial of the permit. The applicant may appeal the decision of the director to the commission.

A permit to drill automatically expires one year after the date it was issued, unless the well is drilling or has been drilled below surface casing. A permit to recomplete or to drill horizontally automatically expires one year after the date it was issued, unless such project has commenced.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1992; May 1, 1994; September 1, 2000; July 1, 2002; April 1, 2010.

General Authority
NDCC 38-08-05

Law Implemented
NDCC 38-08-05

43-02-03-16.3. RECOVERY OF A RISK PENALTY. The following govern the recovery of the risk penalty pursuant to subsection 3 of North Dakota Century Code section 38-08-08 and subsection 3 of North Dakota Century Code section 38-08-09.4:

1. An owner may recover the risk penalty under the provisions of subsection 3 of North Dakota Century Code section 38-08-08, provided the owner gives, to the owner from whom the penalty is sought, a written invitation to participate in the risk and cost of drilling a well, including reentering a plugged and abandoned well, or the risk and cost of reentering an existing well to drill deeper or a horizontal lateral. If the nonparticipating owner's interest is not subject to a lease or other contract for development, an owner seeking to recover a risk penalty must also make a good-faith attempt to have the unleased owner execute a lease.

    a. The invitation to participate in drilling must contain the following:

        (1) The location of the proposed or existing well and its proposed depth and objective zone.

        (2) An itemization of the estimated costs of drilling and completion.

        (3) The approximate date upon which the well was or will be spudded or reentered.

        (4) ~~The time within which~~ A statement indicating the invitation must be accepted within thirty days of receiving it. ~~At least thirty days should be given, for it is presumed that at least thirty days is needed to adequately consider and respond to an invitation. In unusual circumstances, however, the owner seeking the risk penalty may allow less than thirty days in which to respond to the invitation, but in no circumstances may less than fifteen days be allowed.~~

(5) Notice that the participating owners plan to impose a risk penalty and that the nonparticipating owner may object to the risk penalty by either responding in opposition to the petition for a risk penalty, or if no such petition has been filed, by filing an application or request for hearing with the commission.

b. An election to participate must be in writing and must be received by the owner giving the invitation within thirty days of the participating party's receipt of the invitation.

c. An invitation to participate and an election to participate must be served personally, by mail requiring a signed receipt, ~~by facsimile transmission followed within one business day by mailing,~~ or by overnight courier or delivery service requiring a signed receipt. Failure to accept mail requiring a signed receipt constitutes service.

d. An election to participate is only binding upon an owner electing to participate if the well is spudded or reentry operations are commenced on or before ninety days after the date the owner extending the invitation to participate sets as the date upon which a response to the invitation is to be received. It also expires if the permit to drill or reenter expires without having been exercised. If an election to participate lapses, a risk penalty can only be collected if the owner seeking it again complies with the provisions of this section.

2. An owner may recover the risk penalty under the provisions of subsection 3 of North Dakota Century Code section 38-08-09.4, provided the owner gives, to the owner from whom the penalty is sought, a written invitation to participate in the unit expense. If the nonparticipating owner's interest is not subject to a lease or other contract for development, an owner seeking to recover a risk penalty must also make a good-faith attempt to have the unleased owner execute a lease.

a. The invitation to participate in the unit expense must contain the following:

(1) A description of the proposed unit expense, including the location, objectives, and plan of operation.

(2) An itemization of the estimated costs.

(3) The approximate date upon which the proposal was or will be commenced.

(4) ~~The time within which~~ A statement indicating the invitation must be accepted within thirty days of receiving it. ~~At least thirty days should be given, for it is presumed that at least thirty days is needed to adequately consider and respond to an invitation. In unusual circumstances, however, the owner seeking the risk penalty may allow less than thirty days in which to respond to the invitation, but in no circumstances may less than fifteen days be allowed.~~

(5) Notice that the participating owners plan to impose a risk penalty and that the nonparticipating owner may object to the risk penalty by either responding in opposition to the petition for a risk penalty, or if no such petition has been filed, by filing an application or request for hearing with the commission.

b. An election to participate must be in writing and must be received by the owner giving the invitation within thirty days of the participating party's receipt of the invitation.

c. An invitation to participate and an election to participate must be served personally, by mail requiring a signed receipt, ~~by facsimile transmission followed within one business day by mailing,~~ or by overnight courier or delivery service requiring a signed receipt. Failure to accept mail requiring a signed receipt constitutes service.

d. An election to participate is only binding upon an owner electing to participate if the unit expense is commenced within ninety days after the date the owner extending the invitation request to participate sets as the date upon which a response to the request invitation is to be received. If an election to participate lapses, a risk penalty can only be collected if the owner seeking it again complies with the provisions of this section.

e. An invitation to participate in a unit expense covering monthly operating expenses shall be effective for all such monthly operating expenses for a period of five years if the unit expense identified in the invitation to participate is first commenced within ninety days after the date set in the invitation to participate as the date upon which a response to the invitation to participate must be received. An election to participate in a unit expense covering monthly operating expenses is effective for five years after operations are first commenced. If an election to participate in a unit expense comprised of monthly operating expenses expires or lapses after five years, a risk penalty may only be assessed and collected if the owner seeking the penalty once again complies with this section.

3. Upon its own motion or the request of a party, the commission may include in a pooling order requirements relating to the invitation and election to participate, in which case the pooling order will control to the extent it is inconsistent with this section.

History: Effective December 1, 1996; amended effective May 1, 2004; January 1, 2006; January 1, 2008; April 1, 2010.
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General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04
38-08-08

43-02-03-18. DRILLING UNITS - WELL LOCATIONS. In the absence of an order by the commission setting spacing units for a pool:

1. a. Vertical or directional oil wells projected to a depth not deeper than the Mission Canyon formation ~~shall~~ must be drilled upon a governmental quarter-quarter section or equivalent lot, located not less than five hundred feet [152.4 meters] to the boundary of such governmental quarter-quarter section or equivalent lot. No more than one well shall be drilled to the same pool on any such governmental quarter-quarter section or equivalent lot, except by order of the commission, nor shall any well be drilled on any such governmental quarter-quarter section or equivalent lot containing less than thirty-six acres [14.57 hectares] except by order of the commission.

   b. Vertical or directional oil wells projected to a depth deeper than the Mission Canyon formation ~~shall~~ must be drilled on a governmental quarter section or equivalent lots, located not less than six hundred sixty feet [201.17 meters] to the boundary of such governmental quarter section or equivalent lots. No more than one well shall be drilled to the same pool on any such governmental quarter section or equivalent lots, except by order of the commission, nor shall any well be drilled on any such governmental quarter section or equivalent lots containing less than one hundred forty-five acres [58.68 hectares] except by order of the commission.

2. a. Horizontal wells with a horizontal displacement of the well bore drilled at an angle of at least eighty degrees within the productive formation of at least five hundred feet [152.4 meters], projected to a depth not deeper than the Mission Canyon Formation, must be drilled upon a drilling unit described as a governmental section or described as two adjacent governmental quarter sections within the same section or equivalent lots, located not less than five hundred feet [152.4 meters] to the outside boundary of such tract. The horizontal well proposed to be drilled must, in the director's opinion, justify the creation of such drilling unit. No more than one well may be drilled to the same pool on any such tract, except by order of the commission.

   b. Horizontal wells with a horizontal displacement of the well bore drilled at an angle of at least eighty degrees within the productive formation of at least five hundred feet [152.4 meters], projected to a depth deeper than the Mission Canyon Formation, must be drilled upon a drilling unit described as a governmental section~~ or described as two adjacent governmental quarter sections within the same section or equivalent lots~~, located not less than five hundred feet [152.4 meters] to the outside boundary of such tract. The horizontal well proposed to be drilled must, in the director's opinion, justify the creation of such drilling unit. No more than one well may be drilled to the same pool on any such tract, except by order of the commission.

3. a. Gas wells projected to a depth not deeper than the Mission Canyon formation shall be drilled upon a governmental quarter section or equivalent lots, located

not less than five hundred feet [152.4 meters] to the boundary of such governmental quarter section or equivalent lots. No more than one well shall be drilled to the same pool on any such governmental quarter section or equivalent lots, except by order of the commission, nor shall any well be drilled on any such governmental quarter section or equivalent lot containing less than one hundred forty-five acres [58.68 hectares] except by order of the commission.

b. Gas wells projected to a depth deeper than the Mission Canyon formation shall be drilled upon a governmental quarter section or equivalent lots, located not less than six hundred sixty feet [201.17 meters] to the boundary of such governmental quarter section or equivalent lots. No more than one well shall be drilled to the same pool on any such governmental quarter section or equivalent lots, except by order of the commission, nor shall any well be drilled on any such governmental quarter section or equivalent lot containing less than one hundred forty-five acres [58.68 hectares] except by order of the commission.

4. Within thirty days, or a reasonable time thereafter, following the discovery of oil or gas in a pool not then covered by an order of the commission, a spacing hearing shall be docketed. Following such hearing the commission shall issue an order prescribing a temporary spacing pattern for the development of the pool. This order shall continue in force for a period of not more than eighteen months at the expiration of which time a hearing shall be held at which the commission may require the presentation of such evidence as will enable the commission to determine the proper spacing for the pool.

   During the interim period between the discovery and the issuance of the temporary order, no permits shall be issued for the drilling of an offset well to the discovery well, unless approved by the director. Approval shall be consistent with anticipated spacing for the orderly development of the pool.

   Any well drilled within one mile [1.61 kilometers] of an established field shall conform to the spacing requirements in that field except when it is apparent that the well will not produce from the same common source of supply. In order to assure uniform and orderly development, any well drilled within one mile [1.61 kilometers] of an established field boundary shall conform to the spacing and special field rules for the field, and for the purposes of spacing and pooling, the field boundary shall be extended to include the spacing unit for such well and any intervening lands. The foregoing shall not be applicable if it is apparent that the well will not produce from the same common source of supply as wells within the field.

5. If the director denies an application for permit, the director shall advise the applicant immediately of the reasons for denial. The decision of the director may be appealed to the commission.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1992; May 1, 1994; July 1, 1996; July 1, 2002; January 1, 2006; April 1, 2010.

General Authority
NDCC 38-08-04
38-08-07

Law Implemented
NDCC 38-08-04
38-08-07

43-02-03-19. RESERVE PIT FOR DRILLING MUD AND DRILL CUTTINGS - RECLAMATION OF SURFACE. In the construction of a drill site, access road, and all associated facilities, the topsoil shall be removed, stockpiled, and stabilized or otherwise reserved for use when the area is reclaimed. "Topsoil" means the suitable plant growth material on the surface; however, in no event shall this be deemed to be more than the top eight inches [20.32 centimeters] of soil.

When necessary to prevent pollution of the land surface and freshwaters, the director may require the drill site to be sloped and diked, to divert surface drainage.

In order to assure a supply of proper material or mud-laden fluid to confine oil, gas, or water to its native strata during the drilling of any well, each operator shall provide, before drilling is commenced, a container or reserve pit of sufficient size to contain said material or fluid, and the accumulation of drill cuttings. A reserve pit may be utilized to contain solids and fluids used and generated during well drilling and completion operations, providing the pit can be constructed, used and reclaimed in a manner that will prevent pollution of the land surface and freshwaters. In special circumstances, the director may prohibit construction of a reserve pit or may impose more stringent pit construction and reclamation requirements. Under no circumstances shall reserve pits be used for disposal, dumping, or storage of fluids, wastes, and debris other than drill cuttings and fluids used or recovered while drilling and completing the well.

Reserve pits shall not be located in, or hazardously near, bodies of water, nor shall they block natural drainages. No reserve pit shall be wholly or partially constructed in fill dirt unless approved by the director.

When required by the director, the reserve pit or site or appropriate parts thereof must be fenced.

1. Within a reasonable time, but not more than one year, after the completion of a well, the reserve pit shall be reclaimed. Prior to reclaiming the pit, the operator or the operator's agent shall file a sundry notice (form 4) with the director and obtain approval of a pit reclamation plan. Verbal approval to reclaim the pit may be given. The notice shall include, but not be limited to:

    a. The name and address of the reclamation contractor;

    b. The name and address of the surface owner;

    c. The location and name of the disposal site for the pit water; and,

d. A description of the proposed work, including details on treatment and disposition of the drilling waste.

All pit water and oil on the pit must be removed prior to reclamation. Drilling waste should be encapsulated in the pit and covered with at least four feet [1.22 meters] of backfill and topsoil and surface sloped, when practicable, to promote surface drainage away from the reclaimed pit area.

2. Within a reasonable time, but not more than one year, after a well is plugged, the well site, access road, and other associated facilities constructed for the well shall be reclaimed as closely as practicable to original condition, or in the case of a completed well, the unused portion of the site shall be reclaimed. Prior to site reclamation, the operator or the operator's agent shall file a sundry notice (form 4) with the director and obtain approval of a reclamation plan. The operator or operator's agent shall provide a copy of the proposed reclamation plan to the surface owner at least ten days prior to commencing the work unless waived by the surface owner. Verbal approval to reclaim the site may be given. The notice shall include, but not be limited to:

   a. The name and address of the reclamation contractor;

   b. The name and address of the surface owner and the date when a copy of the proposed reclamation plan was provided to the surface owner;

   c. A description of the proposed work, including top soil redistribution, reclamation plans for the access road and other associated facilities; and,

   d. Reseeding plans, if applicable.

   The commission will mail a copy of the approved notice to the surface owner.

   All production equipment, waste and debris shall be removed from the site. Flow lines shall be purged in a manner approved by the director. Flow lines shall be removed if buried less than three feet [91.44 centimeters] below final contour.

3. Gravel or other surfacing material shall be removed and the well site, access road, and other associated facilities constructed for the well shall be reshaped as near as is practicable to original contour.

4. The stockpiled topsoil shall be evenly distributed over the disturbed area, and where applicable the area revegetated with native species or according to the reasonable specifications of the appropriate government land manager or surface owner.

5. Within thirty days after completing any reclamation, the operator shall file a sundry notice with the director reporting the work performed.

6. The director, with the consent of the appropriate government land manager or surface owner, may waive the requirement of reclamation of the site and access road after a well is plugged.

History: Amended effective March 1, 1982; January 1, 1983; May 1, 1992; July 1, 2002; January 1, 2008; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-19.3 EARTHEN PITS AND OPEN RECEPTACLES. Except as otherwise provided in section 43-02-03-19, no saltwater, drilling mud, crude oil, waste oil, or other waste shall be stored in earthen pits or open receptacles except in an emergency and upon approval by the director.

An earthen pit or open receptacle may be temporarily used to retain oil, water or fluids generated in well servicing or plugging operations. A pit or receptacle used for this purpose must be sufficiently impermeable to provide adequate temporary containment of the oil, water, or fluids. The contents of the pit or receptacle must be removed within seventy-two hours after operations have ceased and must be disposed of at an authorized facility in accordance with section 43-02-03-19.2.

The director may permit pits or receptacles used solely for the purpose of flaring casinghead gas. A pit or receptacle used for this purpose must be sufficiently impermeable to provide adequate temporary containment of fluids. Permission for such ~~a~~ pit or receptacle will be conditioned on keeping ~~the pit~~ it free of any saltwater, crude oil, waste oil, or other waste. Saltwater, drilling mud, crude oil, waste oil, or other waste shall be removed from the pit or receptacle within twenty-four hours after being discovered and must be disposed of at an authorized facility in accordance with section 43-02-03-19.2.

43-02-03-21. CASING, TUBING, AND CEMENTING REQUIREMENTS. All wells drilled for oil, natural gas or injection shall be completed with strings of casing which shall be properly cemented at sufficient depths to adequately protect and isolate all formations containing water, oil or gas or any combination of these; protect the pipe through salt sections encountered; and isolate the uppermost sand of the Dakota group.

Drilling of the surface hole shall be with freshwater-based drilling mud or other method approved by the director which will protect all freshwater-bearing strata. The surface casing shall consist of new or reconditioned pipe that has been previously tested to one thousand pounds per square inch [6900 kilopascals]. The surface casing shall be set and cemented at a point not less than fifty feet [15.24 meters] below the base of the Fox Hills formation. Sufficient cement shall be used on surface casing to fill the annular space behind the casing to the bottom of the cellar, if any, or to the surface of the ground. All strings of surface casing shall stand cemented under pressure for at least twelve hours before drilling the plug or initiating tests. The term "under pressure" as used herein shall be complied with if one float valve is used or if pressure is otherwise held.

Cementing shall be by the pump and plug method or other methods approved by the director. The director is authorized to require an accurate gauge be maintained on the surface casing of any well, not properly plugged and abandoned, to detect any buildup of pressure caused by the migration of fluids.

Surface casing strings must be allowed to stand under pressure until the tail cement has reached a compressive strength of at least five hundred pounds per square inch [3450 kilopascals]. All filler cements utilized must reach a compressive strength of at least two hundred fifty pounds per square inch [1725 kilopascals] within twenty-four hours and at least three hundred fifty pounds per square inch [2415 kilopascals] within seventy-two hours. All compressive strengths on surface casing cement shall be calculated at a temperature of eighty degrees Fahrenheit [26.67 degrees Celsius].

Production or intermediate casing strings shall consist of new or reconditioned pipe that has been previously tested to two thousand pounds per square inch [13800 kilopascals]. Such strings must be allowed to stand under pressure until the tail cement has reached a compressive strength of at least five hundred pounds per square inch [3450 kilopascals]. All filler cements utilized must reach a compressive strength of at least two hundred fifty pounds per square inch [1725 kilopascals] within twenty-four hours and at least five hundred pounds per square inch [3450 kilopascals] within seventy-two hours, although in any horizontal well performing a single stage cement job from a measured depth of greater than 13000 feet, the filler cement utilized must reach a compressive strength of at least two hundred fifty pounds per square inch [1725 kilopascals] within forty-eight hours and at least five hundred pounds per square inch [3450 kilopascals] within ninety-six hours. All compressive strengths on production or intermediate casing cement shall be calculated at a temperature found in the Mowry formation using a gradient of 1.2 degrees Fahrenheit per one hundred feet [30.48 meters] of depth plus eighty degrees Fahrenheit [26.67 degrees Celsius]. After cementing, the casing shall be tested by application of pump pressure of at least one thousand five hundred pounds per square inch [10350 kilopascals]. If, at the end of thirty minutes, this pressure has dropped one hundred fifty pounds per square inch [1035 kilopascals] or more, the casing shall be repaired. Thereafter, the casing shall again be tested in the same manner. Further work shall not proceed until a satisfactory test has been obtained. The casing in a horizontal well may be tested by use of a mechanical tool set near the casing shoe after the horizontal section has been drilled.

All flowing wells must be equipped with tubing. A tubing packer must also be utilized unless a waiver is obtained after demonstrating the casing will not be subjected to excessive pressure or corrosion. The packer must be set as near the producing interval as practicable, but in all cases must be above the perforations.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1992; July 1, 1996; January 1, 1997; September 1, 2000; July 1, 2002; May 1, 2004; January 1, 2006; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-25. DEVIATION TESTS AND DIRECTIONAL SURVEYS. When any well is drilled or deepened, tests to determine the deviation from the vertical shall be taken at least every one thousand feet [304.8 meters]. The director is authorized to waive the deviation test for a

shallow gas well if the necessity therefor can be demonstrated to the director's satisfaction. When the deviation from the vertical exceeds five degrees at any point, the director may require that the hole be straightened. Directional surveys may be required by the director, whenever, in the director's judgment, the location of the bottom of the well is in doubt.

A directional survey shall be made and filed with the director on any well utilizing a whipstock or any method of deviating the well bore. The obligation to run the directional survey may be waived by the director when a well bore is deviated to sidetrack junk in the hole, straighten a crooked hole, control a blowout, or if the necessity therefor can be demonstrated to the director's satisfaction. The survey contractor shall file ~~two~~ with the director free of charge one certified ~~copies~~ electronic copy of all surveys~~ with the director free of charge~~, in a form approved by the director, within thirty days of ~~completion~~ attaining total depth. ~~Surveys must be submitted as one paper copy and one electronic copy, or in a form approved by the director. However, the~~ The director may require the directional survey to be filed immediately after completion if the survey is needed to conduct the operation of the director's office in a timely manner. Special permits may be obtained to drill directionally in a predetermined direction as provided above, from the director.

If the director denies a request for a permit to directionally drill, the director shall advise the applicant immediately of the reasons for denial. The decision of the director may be appealed to the commission.

History: Amended effective April 1, 1980; April 30, 1981; January 1, 1983; May 1, 1990; May 1, 1992; May 1, 1994; September 1, 2000; January 1, 2006; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-27. PERFORATING, FRACTURING, AND CHEMICALLY TREATING WELLS. The Director may prescribe pre-treatment casing pressure testing as well as other operational requirements designed to protect wellhead and casing strings during treatment operations. If damage results to the casing or the casing seat from perforating, fracturing, or chemically treating a well, the operator shall immediately notify the director and proceed with diligence to use the appropriate method and means for rectifying such damage, pursuant to section 43-02-03-22. If perforating, fracturing or chemical treating results in irreparable damage which threatens the mechanical integrity of the well, the commission may require the operator to plug the well.

History: Amended effective January 1, 1983; May 1, 1992; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-30. NOTIFICATION OF FIRES, LEAKS, SPILLS, OR BLOWOUTS. All persons controlling or operating any well, pipeline, receiving tank, storage tank, or production facility into which oil, gas, or water is produced, received, stored, processed, or through which oil, gas,

or water is injected, piped, or transported, shall verbally notify the director within twenty-four hours after discovery of any fire, leak, spill, blowout, or release of fluid. If any such incident occurs or travels offsite of a facility, the persons, as named above, responsible for proper notification shall within a reasonable time also notify the surface owners upon whose land the incident occurred or traveled. Notification requirements prescribed by this section shall not apply to any leak, spill, or release of fluid that is less than one barrel total volume and remains onsite of a facility. The verbal notification must be followed by a written report within ten days after cleanup of the incident, unless deemed unnecessary by the director. Such report must include the following information: the operator and description of the facility, the legal description of the location of the incident, date of occurrence, date of cleanup, amount and type of each fluid involved, amount of each fluid recovered, steps taken to remedy the situation, cause of the accident, and action taken to prevent reoccurrence. The signature, title, and telephone number of the company representative must be included on such report. ~~If any such incident occurs or travels offsite of a facility, the~~ The persons, as named above, responsible for proper notification shall within a reasonable time also ~~notify~~ provide a copy of the written report to the surface owners upon whose land the incident occurred or traveled.

The commission, however, may impose more stringent spill reporting requirements if warranted by proximity to sensitive areas, past spill performance, or careless operating practices as determined by the director.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1992; July 1, 1996; January 1, 2008; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-31. WELL LOG, COMPLETION, AND WORKOVER REPORTS. After the plugging of a well, a plugging record (form 7) shall be filed with the director. After the completion of a well, recompletion of a well in a different pool, or drilling horizontally in an existing pool, a completion report (form 6) shall be filed with the director. In no case shall oil or gas be transported from the lease prior to the filing of a completion report unless approved by the director. The operator shall cause to be run an open hole electrical, radioactivity, or other similar log, or combination of open hole logs, of the operator's choice, from which formation tops and porosity zones can be determined. The operator shall cause to be run a gamma ray log from total depth to ground level elevation of the well bore. The operator shall cause to be run a log from which the presence and quality of bonding of cement can be determined in every well in which production or intermediate casing has been set. The obligation to log may be waived by the director if the necessity therefor can be demonstrated to the director's satisfaction. Waiver will be contingent upon such terms and conditions as the director deems appropriate. All logs run shall be available to the director at the well site prior to proceeding with plugging or completion operations. Two copies of all logs run shall be submitted to the director free of charge. Logs shall be submitted as one paper copy and one digital LAS (log ASCII) formatted copy, or a format approved by the director. In addition, operators shall file two copies of drill stem test reports and charts, formation water analyses, core analyses, geologic reports, and noninterpretive lithologic logs or sample descriptions if compiled by the operator.

All information furnished to the director on new permits, except the operator name, well name, location, spacing or drilling unit description, spud date, rig contractor, and any production runs, shall be kept confidential for not more than six months if requested by the operator in writing. The six-month period shall commence on the date the well is completed or the date the written request is received, whichever is earlier. If the written request accompanies the application for permit to drill or is filed after permitting but prior to spudding, the six-month period shall commence on the date the well is spudded.

All information furnished to the director on recompletions or reentries, except the operator name, well name, location, spacing or drilling unit description, spud date, rig contractor, and any production runs, shall be kept confidential for not more than six months if requested by the operator in writing. The six-month period shall commence on the date the well is completed or the date the well was approved for recompletion or reentry, whichever is earlier. Any information furnished to the director prior to approval of the recompletion or reentry shall remain public.

Approval must be obtained on a sundry notice (form 4) from the director prior to perforating or recompleting a well in a pool other than the pool in which the well is currently permitted.

After the completion of any remedial work, or attempted remedial work such as plugging back or drilling deeper, acidizing, shooting, formation fracturing, squeezing operations, setting liner, perforating, reperforating, or other similar operations not specifically covered herein, a report on the operation shall be filed on a sundry notice (form 4) with the director. The report shall present a detailed account of all work done and the date of such work; the daily production of oil, gas, and water both prior to and after the operation; the shots per foot, size, and depth of perforations; the quantity of sand, crude, chemical, or other materials employed in the operation; and any other pertinent information or operations which affect the original status of the well and are not specifically covered herein.

Upon the installation of pumping equipment on a flowing well, or change in type of pumping equipment designed to increase productivity in a well, the operator shall submit a sundry notice (form 4) of such installation. The notice shall include all pertinent information on the pump and the operation thereof including the date of such installation, and the daily production of the well prior to and after the pump has been installed.

All forms, reports, logs, and other information required by this section shall be submitted within thirty days after the completion of such work, although a completion report shall be filed immediately after the completion or recompletion of a well in a pool or reservoir not then covered by an order of the commission.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1990; May 1, 1992; May 1, 1994; July 1, 1996; September 1, 2000; July 1, 2002; January 1, 2006; January 1, 2008; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-49. OIL SPILLS, PRODUCTION EQUIPMENT, DIKES, AND SEALS. Storage of oil in underground or partially buried tanks or containers is prohibited. Surface oil tanks and production equipment must be devoid of leaks and in good condition. Unusable tanks and production equipment must be removed from the site or repaired and placed into service, within a reasonable time period, not to exceed one year. Dikes must be erected and maintained around oil tanks at any production facility built or rebuilt on or after July 1, 2000.

Dikes must be erected around oil tanks at any new production facility within thirty days after the well has been completed. Dikes must be erected and maintained around oil tanks at production facilities built prior to July 1, 2000, when deemed necessary by the director. Dikes as well as the base material under the dikes and within the diked area must be constructed of sufficiently ~~-~~impermeable material to provide emergency containment ~~and~~. Dikes must be of sufficient dimension to contain the total capacity of the largest tank plus one day's fluid production. The required capacity of the dike may be lowered by the director if the necessity therefor can be demonstrated to the director's satisfaction.

At no time shall oil be allowed to flow over or pool on the surface of the land or infiltrate the soil. Discharged oil must be properly removed and may not be allowed to remain standing within or outside of any diked areas.

Numbered metal security seals shall be properly utilized on all oil access valves and access points to secure the tank or battery of tanks.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1992; September 1, 2000; July 1, 2002; May 1, 2004; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-53. SALTWATER HANDLING FACILITIES.

1. All saltwater liquids or brines produced with oil and natural gas shall be processed, stored, and disposed of without pollution of freshwater supplies. At no time shall saltwater liquids or brines be allowed to flow over or pool on the surface of the land or infiltrate the soil.

2. Underground injection of saltwater liquids and brines shall be in accordance with chapter 43-02-05.

3. Surface facilities are acceptable provided that:

    a. They are devoid of leaks and constructed of materials resistant to the effects of produced saltwater liquids, brines, or chemicals that may be contained therein.

The above materials requirement may be waived by the director for tanks presently in service and in good condition. Unusable tanks and injection equipment must be removed from the site or repaired and placed into service, within a reasonable time period, not to exceed one year.

b. Dikes must be erected and maintained around saltwater tanks at any saltwater handling facility built or rebuilt on or after July 1, 2000. Dikes must be erected around saltwater tanks at any new facility within thirty days after the well has been completed. Dikes must be erected and maintained around saltwater tanks at saltwater handling facilities built prior to July 1, 2000, when deemed necessary by the director. Dikes as well as the base material under the dikes and within the diked area must be constructed of sufficiently impermeable material to provide emergency containment ~~and~~. Dikes must be of sufficient dimension to contain the total capacity of the largest tank plus one day's fluid production. The required capacity of the dike may be lowered by the director if the necessity therefor can be demonstrated to the director's satisfaction. Discharged saltwater liquids or brines must be properly removed and may not be allowed to remain standing within or outside of any diked areas.

4. The operator shall take steps to minimize the amount of solids stored at the facility.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1992; September 1, 2000; July 1, 2002; May 1, 2004; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-55. ABANDONMENT OF WELLS - SUSPENSION OF DRILLING.

1. The removal of production equipment or the failure to produce oil or gas, other than a gas well shut in for lack of a market, for one year constitutes abandonment of the well. The removal of injection equipment or the failure to use an injection well for one year constitutes abandonment of the well. An abandoned well must be plugged and its site must be reclaimed pursuant to sections 43-02-03-34 and 43-02-03-19.

2. The director may waive for one year the requirement to plug and reclaim an abandoned well by giving the well temporarily abandoned status. This status may only be given to wells that are to be used for purposes related to the production of oil and gas. If a well is given temporarily abandoned status, the well's perforations must be isolated, the integrity of its casing must be proven, and its casing must be sealed at the surface, all in a manner approved by the director. The director may extend a well's temporarily abandoned status beyond one year. A fee of one hundred dollars shall be submitted ~~with~~ for each application to extend the temporary abandonment status of any well.

3. In addition to the waiver in subsection 2, the director may also waive the duty to plug and reclaim an abandoned well for any other good cause found by the director. If the

director exercises this discretion, the director shall set a date or circumstance upon which the waiver expires.

4. The director may approve suspension of the drilling of a well. If suspension is approved, a plug must be placed at the top of the casing to prevent any foreign matter from getting into the well. When drilling has been suspended for thirty days, the well, unless otherwise authorized by the director, must be plugged and its site reclaimed pursuant to sections 43-02-03-34 and 43-02-03-19.

History: Amended effective April 30, 1981; January 1, 1983; May 1, 1990; May 1, 1992; August 1, 1999; January 1, 2008; April 1, 2010.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

43-02-03-90.2. OFFICIAL NOTICE. The evidence in each case heard by the commission, unless specifically excluded by the hearing officer, includes the certified directional surveys, and all oil, water, and gas production records on file with the commission.

History: Effective May 1, 1992; amended effective April 1, 2010.

General Authority
NDCC 28-32-06

Law Implemented
NDCC 28-32-06

GEOPHYSICAL EXPLORATION REQUIREMENTS
CHAPTER 43-02-12

43-02-12-01.1 SCOPE OF CHAPTER. This chapter contains general rules of statewide application which have been adopted by the industrial commission to govern geophysical exploration in North Dakota. Special rules, regulations, and orders have been and will be issued when required and shall prevail as against general rules, regulations, and orders if in conflict therewith. However, wherever this chapter does not conflict with special rules heretofore or hereafter adopted, this chapter will apply in each case. The commission may grant exceptions to this chapter, after due notice and hearing, when such exceptions will protect correlative rights.

History: Effective April 1, 2010.

General Authority
NDCC 38-08.1

Law Implemented
NDCC 38-08.1-08

43-02-12-04. EXPLORATION PERMIT - APPLICATION.

1. Any person applying to the commission for an exploration permit must have a certificate to conduct geophysical exploration pursuant to subsection 3 of North Dakota Century Code section 38-08.1-03.1. A person may not commence geophysical exploration activities in this state without first obtaining an exploration permit from the commission. An application for an exploration permit must be submitted to the commission at least three business days before commencing operations and include the following:

    a. The name, permanent address, and telephone number of the geophysical contractor and the geophysical contractor's local representative.

    b. The name, permanent address, and telephone number of the drilling and hole plugging contractor, if different from the seismic contractor.

    c. The name and address of the resident agent for service of process of the person intending to engage in geophysical exploration.

    d. The bond number, type, and amount for the geophysical company.

    e. The geophysical exploration method (i.e., shot hole, nonexplosive, 2D, or 3D).

    f. The number, depth, and location of the seismic holes and the size of the explosive charges, if applicable.

    g. The anticipated starting date of seismic and plugging operations.

    h. The anticipated completion date of seismic and plugging operations.

    i. A description of hole plugging procedures.

    j. A description of the identifying marks that will be on the nonmetallic plug to be used in the plugging of the seismic hole.

    k. A preplot map displaying the proposed seismic source points and receiver lines and specifically identifying all source points that do not comply with section 43-02-12-05.

    l. A fee of one hundred dollars.

2. The permitholder shall notify the commission at least twenty-four hours, excluding Saturdays and holidays, before commencing geophysical activity.

3. The permitholder shall immediately notify the commission of any revisions to an approved seismic permit.

4. An exploration permit expires one year after the date it was issued, unless geophysical exploration activities have commenced.

History: Effective December 1, 1997; amended effective September 1, 2000; May 1, 2004; April 1, 2010.

General Authority
NDCC 38-08.1

Law Implemented
NDCC 38-08.1-04.1

43-02-12-06. NOTIFICATION OF WORK PERFORMED. Within thirty days following the completion of geophysical exploration by any person within this state, such person shall file with the commission a seismic completion report in the form of an affidavit deposing that the seismic project was completed in accordance with chapter 43-02-12, and incorporating a postplot map displaying the actual source point location and the location of all undetonated (loaded) holes, blowouts, and flowing holes or any other problem holes the director deems necessary. If obtained by the contractor, the latitude and longitude of each source and receiver point shall be submitted to the commission to the nearest tenth of a second.

Any person plugging a seismic hole must submit a plugging report and an affidavit of plugging detailing the line number, shot point number, hole depth, drill type, hole condition (wet, dry), bentonite used (sacks, capsules), and the depth at which the surface plug was set, and all other information necessary to describe the conditions of the shot hole.

The director is authorized to approve an operator's request to suspend a geophysical exploration project, although no suspension shall be granted beyond ninety days unless all charges are detonated.

The director is authorized to suspend operations of the entire geophysical exploration project, or any portion thereof, if further activity will cause excessive damage to the surface of the land. The geophysical exploration activity may continue upon the director approving a plan to mitigate the damage.

History: Effective December 1, 1997; amended effective September 1, 2000; May 1, 2004; January 1, 2008; April 1, 2010.

General Authority
NDCC 38-08.1

Law Implemented
NDCC 38-08.1-02,
38-08.1-05

NOTE: THIS IS A NEW ARTICLE AND CHAPTER

GEOLOGIC STORAGE OF CARBON DIOXIDE
ARTICLE 43-05
CHAPTER 43-05-01

43-05-01-01. DEFINITIONS. Terms used in this chapter have the same meaning as in chapter 43-02-03 and North Dakota Century Code chapter 38-08. Further, in this chapter:

1. "Carbon dioxide" means carbon dioxide produced by anthropogenic sources which is of such purity and quality that it will not compromise the safety of geologic storage and will not compromise those properties of a storage reservoir which allow the reservoir to effectively enclose and contain a stored gas.

2. “Closure period” means that period from permanent cessation of carbon dioxide injection until the commission issues a certificate of project completion.

3. “Commission” means industrial commission.

4. “Flow lines” means pipeline(s) transporting carbon dioxide from the carbon dioxide facility injection facilities to the wellhead.

5. “Formation fracture pressure” means the pressure, measured in pounds per square inch, which, if applied to a subsurface formation, will cause that formation to fracture.

6. “Freshwater” means an underground source of drinking water unless otherwise defined by the commission.

7. "Geologic storage" means the permanent or short-term underground storage of carbon dioxide in a storage reservoir.

8. “Injection well” means a well used to inject carbon dioxide into or withdraw carbon dioxide from a reservoir.

9. “Minerals” means coal, oil and natural gas.

10. “Operational period” means the period during which injection occurs.

11. "Permit" means a permit issued by the commission allowing a person to operate a storage facility.

12. “Post closure period” means that period after the commission has issued a certificate of completion.

13. "Reservoir" means a subsurface sedimentary stratum, formation, aquifer, cavity, or void, whether natural or artificially created, including oil and gas reservoirs, saline formations, and coal seams suitable for or capable of being made suitable for injecting and storing carbon dioxide.

14. "Storage facility" means the reservoir, underground equipment, and surface facilities and equipment used or proposed to be used in a geologic storage operation. It does not include pipelines used to transport carbon dioxide to the storage facility.

15. "Storage operator" means a person holding or applying for a permit.

16. "Storage reservoir" means a reservoir proposed, authorized, or used for storing carbon dioxide.

17. “Subsurface observation well” means a well used to observe subsurface phenomena, including the presence of carbon dioxide, pressure fluctuations, fluid levels and flow, temperature, and in situ water chemistry.

18. "Underground source of drinking water" means an aquifer or any portion of an aquifer that supplies drinking water for human consumption, or in which the ground water contains fewer than ten thousand milligrams per liter total dissolved solids and is not an exempted aquifer as determined by the commission under North Dakota Administrative Code 43-02-05-03.

43-05-01-02. SCOPE OF CHAPTER. This chapter governs the geologic storage of carbon dioxide.

43-05-01-03. BOOKS AND RECORDS TO BE KEPT TO SUBSTANTIATE REPORTS. All owners, operators, drilling contractors, drillers, service companies, or other persons engaged in drilling, completing, operating, or servicing storage facilities shall make and keep appropriate books and records for a period of not less than six years, covering their operations in North Dakota from which they may be able to make and substantiate the reports required by this chapter.

43-05-01-04. ACCESS TO RECORDS. The industrial commission and the commission's authorized agents shall have access to all storage facility records wherever located. All owners, operators, drilling contractors, drillers, service companies, or other persons engaged in drilling, completing, operating, or servicing storage facilities shall permit the industrial commission, or its authorized agents, to come upon any lease, property, well, or drilling rig operated or controlled by them, complying with state safety rules and to inspect the records and operation of wells and to conduct sampling and testing. Any information so obtained shall be public information. If requested, copies of storage facility records must be filed with the commission.

43-05-01-05. STORAGE FACILITY PERMIT.

1. An application for a permit must include the following:

   a. A site map showing the boundaries of the storage reservoir and the location of all proposed wells, proposed cathodic protection boreholes, and surface facilities within the carbon dioxide storage facility;

   b. A technical evaluation of the proposed storage facility including but not limited to the following:

      (1) The name, description, and average depth of the storage reservoir(s);

      (2) A geologic and hydrogeologic evaluation of the facility area, including an evaluation of all existing information on all geologic strata overlying the storage reservoir including the immediate caprock containment characteristics and all subsurface zones to be used for monitoring. The evaluation must include any available geophysical data and assessments of any regional tectonic activity, local seismicity and regional or local fault zones, and a comprehensive description of local and regional structural or stratigraphic features. The evaluation must describe the storage reservoir's mechanisms of geologic confinement, including but not limited to rock properties, regional pressure gradients, structural features, and adsorption characteristics with regard to the ability of that confinement to prevent migration of carbon dioxide beyond the proposed storage reservoir. The evaluation must also identify any productive existing or potential mineral zones occurring within the facility area and any freshwater in the facility area and within one mile of its outside boundary. The evaluation must include exhibits and plan view maps showing the following:

         (a) All wells, including but not limited to, water, oil, and natural gas exploration and development wells, and other man-made subsurface structures and activities, including coal mines, within the facility area and within one mile of its outside boundary;

         (b) All manmade surface structures that are intended for temporary or permanent human occupancy within the facility area and within one mile of its outside boundary;

         (c) Any regional or local faulting;

         (d) An isopach map of the storage reservoir(s);

         (e) An isopach map of the primary and any secondary containment barrier for the storage reservoir;

         (f) A structure map of the top and base of the storage reservoir(s);

(g) Identification of all structural spill points or stratigraphic discontinuities controlling the isolation of stored carbon dioxide and associated fluids;

(h) Evaluation of the potential displacement of in situ water and the potential impact on groundwater resources, if any; and

(i) Structural and stratigraphic cross-sections that describe the geologic conditions at the storage reservoir or reservoirs.

(3) A review of the data of public record for all wells within the facility area, which penetrate the storage reservoir or primary or secondary seals overlying the reservoir, and all wells within the facility area and within one mile, or any other distance as deemed necessary by the commission, of the facility area's boundary. This review must determine if all abandoned wells have been plugged in a manner that prevents the carbon dioxide or associated fluids from escaping from the storage reservoir. The review required under this paragraph shall be conducted by a geologist or engineer.

(4) The proposed calculated maximum volume and areal extent for the storage reservoir using a method acceptable to and filed with the commission;

(5) The proposed maximum bottom hole injection pressure to be utilized at the reservoir. The maximum allowed injection pressure, measured in pounds per square inch gauge, shall be approved by the commission and specified in the permit. In approving a maximum injection pressure limit, the commission shall consider the results of well tests and other studies that assess the risks of tensile failure and shear failure. The commission shall approve limits that, with a reasonable degree of certainty, will avoid initiating a new fracture or propagating an existing fracture in the confining zone or cause the movement of injection or formation fluids into an underground source of drinking water.

c. The extent of the pore space that will be occupied by carbon dioxide as determined by utilizing all appropriate geologic and reservoir engineering information and reservoir analysis, which may include but is not limited to various computational models if appropriate for reservoir characterization, and the projected response and storage capacity of the geologic storage unit.

d. A detailed description of the storage facility's public safety and emergency response plan. The plan must detail the safety procedures concerning the facility and residential, commercial, and public land use within one mile [1.61 kilometers], or any other distance set by the commission, of the outside boundary of the area. The public safety and emergency response procedures must include contingency plans for carbon dioxide leakage from any well, flow lines or other facility and identify specific contractors and equipment vendors capable of providing necessary services and equipment to respond to such

leaks or loss of containment from the storage reservoir. These emergency response procedures must be reviewed and updated annually;

e. A detailed worker safety plan that addresses carbon dioxide safety training and safe working procedures at the storage facility;

f. A corrosion monitoring and prevention plan for all wells and surface facilities;

g. A leak detection and monitoring plan for all wells and surface facilities. The plan must:

(1) Identify the potential for release to the atmosphere;

(2) Identify potential degradation of groundwater resources with particular emphasis on underground sources of drinking water; and

(3) Identify potential migration of carbon dioxide into any mineral zone in the facility area.

h. A leak detection and monitoring plan utilizing subsurface observation wells to monitor any movement of the carbon dioxide outside of the storage reservoir. This may include the collection of baseline information of carbon dioxide background concentrations in groundwater, surface soils, and chemical composition of in situ waters within the facility area and the storage reservoir and within one mile of the facility area's outside boundary. Provisions in the plan will be dictated by the site characteristics as documented by materials submitted in support of the permit application but must:

(1) Identify the potential for release to the atmosphere;

(2) Identify potential degradation of groundwater resources with particular emphasis on underground sources of drinking water; and

(3) Identify potential migration of carbon dioxide into any mineral zone in the facility area.

i. The proposed well casing and cementing program detailing compliance with section 43-05-01-09;

j. A performance bond in an amount and under terms set by the commission to provide it with funds sufficient to satisfy any regulatory obligation that the storage operator fails to fulfill. If the commission uses a part of the bond, the storage operator shall immediately replenish the bond or secure a new bond to ensure that the full bond amount set by the commission is maintained.

k. Any other information that the commission requires; and

l. A closure plan.

2. Any person filing a permit application or an application to amend an existing permit shall pay a processing fee.

   a. The fee will be based on actual processing costs, including computer data processing costs, incurred by the commission.

      (1) A record of all application processing costs incurred must be maintained by the commission.

      (2) Promptly after receiving an application, the commission shall prepare and submit to the applicant an estimate of the processing fee and a payment billing schedule.

      (3) After the commission's work on the application has concluded, a final statement will be sent to the applicant. The full processing fee must be paid before the commission issues its final decision on an application.

      (4) The applicant must pay the processing fee regardless of whether a permit is issued or denied, or the application withdrawn.

3. The commission has one year from the date an application is deemed complete to issue a final decision regarding the application.

43-05-01-06. STORAGE FACILITY PERMIT TRANSFER.

1. Notification. The storage operator and proposed transferee shall notify the commission, in writing of any proposed permit transfer. The notice must contain the following:

   a. The name and address of the person to whom the permit is to be transferred.

   b. The name of the permit subject to transfer and location of the storage facility, and a description of the land upon which the storage facility is situated.

   c. The date that the storage operator desires the proposed transfer to occur.

   d. Performance bonds required by section 43-05-01-05.

2. Commission review. The commission shall review the proposed transfer to ensure that the purposes of North Dakota Century Code Chapter 38-22 are not compromised but are promoted. For good cause, the commission may deny a transfer request, delay acting on it and place conditions on its approval.

3. Commission approval required. A permit transfer can occur only upon the commission's written order.

43-05-01-07. AMENDING STORAGE FACILITY PERMIT.

1. The following changes to a permit require compliance with all the provisions of section 43-05-01-05:

    a. Any change in the areal extent of the storage facility;

    b. Using a reservoir not specified in the permit;

    c. Any increase in the carbon dioxide storage volume; and

    d. Any change in the chemical composition of the injected carbon dioxide.

2. Significant changes to operational methods and procedures contained in the permit or upon which the permit was based will require compliance with section 43-05-01-05(2).

43-05-01-08. AMALGAMATION OF SUBSURFACE RIGHTS TO OPERATE GEOLOGICAL STORAGE UNIT.

1. On or before the date a permit application is filed with the commission, the applicant shall give the following notice that it has filed the application:

    a. Each operator of mineral extraction activities within the facility and within one-half mile outside of the facility area;

    b. Each mineral lessee of record within the facility area and within one-half mile of its outside boundary.

    c. Each owner of record of the surface within the facility area and one-half mile of its outside boundary;

    d. Each owner of record of minerals within the project area and within one-half mile of its outside boundary.

    e. Each owner and each lessee of record of the pore space within the storage reservoir and within one-half mile of the reservoir's boundary; and

    f. Any other persons as required by the commission.

2. The notice must contain:

    a. A legal description of the land overlying the storage reservoir.

b. The date, time and place that the commission will hold a hearing on the permit application.

c. A statement that a copy of the permit application may be obtained from the commission.

d. A notice of the right to file comments.

3. The commission shall give at least fifteen days' notice (except in emergency) of the time and place of hearing thereon by one publication of such notice in a newspaper of general circulation in Bismarck, North Dakota, and in a newspaper of general circulation in the county where the land affected or some part thereof is situated, unless in some particular proceeding a longer period of time or a different method of publication is required by law, in which event such period of time and method of publication shall prevail. The notice shall issue in the name of the commission and shall conform to the other requirements provided by law. The public notice must state that an application has been filed with the commission for permission to store carbon dioxide and describe the location of the proposed facility area and the date, time and place of the hearing before the commission at which time the merits of the application will be considered.

4. Objections received by the commission shall be in writing and specify the nature of the objection.

43-05-01-09. WELL PERMIT APPLICATION REQUIREMENTS

1. Following receipt of a storage facility permit the storage operator shall submit applications to drill deepen, convert operate or, upon demonstration of mechanical integrity, re-enter a previously plugged and abandoned well for storage purposes.

2. Application for permits to drill, deepen, convert, operate or re-enter a well must be submitted on a form prescribed by the commission and must include at a minimum:

a. A plat prepared by a licensed land surveyor showing the location of the proposed injection or subsurface observation well. The plat must be drawn to the scale of one inch [25.4 millimeters] equals one thousand feet [304.8 meters], unless otherwise directed by the commission and must show distances from the proposed well to the nearest storage reservoir boundary. The plat must show the latitude and longitude of the well in decimal degrees to five significant digits. The plat must also show the location and status of all other wells that have been drilled within one-fourth mile [402.34 meters], or any other distance deemed necessary by the commission, of the proposed injection or subsurface observation well;

b. The drilling, completion, or conversion procedures for the proposed injection or subsurface observation well;

c. A well bore schematic showing the name, description, and depth of the storage reservoir(s) and the depth of the deepest underground source of drinking water; a description of the casing in the injection or subsurface observation well, or the proposed casing program, including a full description of cement already in place or as proposed; and the proposed method of testing casing before use of the injection well;

d. A geophysical log, if available, through the storage reservoir to be penetrated by the proposed injection well or if an injection or subsurface observation well is to be drilled, a complete log through the reservoir from a nearby well is permissible. Such log must be annotated to identify the estimated location of the base of the deepest underground source of drinking water, showing the stratigraphic position and thickness of all confining strata above the reservoir(s) and the stratigraphic position and thickness of the reservoir.

3. No later than the conclusion of well drilling and completion activities, a permit application shall be submitted to operate an injection well and must include at a minimum:

a. A schematic diagram of the surface injection system and its appurtenances;

b. A final well bore diagram showing the name, description, and depths of the storage reservoir and the base of the deepest underground source of drinking water; a diagram of the well depicting the casing, cementing, perforation, tubing, and plug and packer records associated with the construction of the well;

c. The well's complete dual induction or equivalent log through the storage reservoir. Such a log shall be run prior to setting casing through the storage reservoir. Logs must be annotated to identify the estimated location of the base of the deepest underground source of drinking water, showing the stratigraphic position and thickness of all confining strata above the storage reservoir and the reservoir's stratigraphic position and thickness unless that information has been previously submitted. When approved in advance by the commission, this information can be demonstrated with a dual induction or equivalent log run in a nearby well or by such other method acceptable to the commission;

d. An affidavit specifying the chemical constituents of the injection stream other than carbon dioxide and their relative proportions;

e. Proof that the long string of casing of the well is cemented adequately so that the carbon dioxide is confined to the storage reservoir(s). Such proof must be provided in the form of a cement bond log or the results of a fluid movement study or such other method specified by the commission; and

f. The results of a mechanical-integrity test, if applicable to well type, of the casing in accordance with the pressure test requirements, of this section, if a

test was run within one calendar year preceding the request for a conversion permit for a previously drilled well.

43-05-01-10. WELL PERMIT.

1. Upon review and approval of the application to drill, deepen, convert, re-enter or operate an injection well, submitted in accordance with section 43-05-01-09, the commission shall issue permits to drill and operate.

2. A permit shall expire twelve months from the date of issued if the permitted well has not been drilled, deepened, re-entered, operated, or converted.

43-05-01-11. WELL OPERATIONAL STANDARDS.

1. Surface casing in all newly drilled carbon dioxide injection and subsurface observation wells drilled below the underground source of drinking water must be set fifty feet below the base of the Fox Hills formation and cemented pursuant to section 43-02-03-21.

2. The long string casing in all injection and subsurface observation wells must be cemented pursuant to section 43-02-03-21.

3. Any liner set in the wellbore must be cemented with a sufficient volume of cement to fill the annular space.

4. All cements used in the cementing of casings in injection and subsurface observation wells must be of sufficient quality to maintain well integrity in the carbon dioxide injection environment.

5. All casings must meet the standards specified in either of the following documents, which are hereby adopted by reference:

    a. "The most recent American petroleum institute bulletin on performance properties of casing, tubing, and drill pipe; or

    b. "Specification for casing and tubing (United States customary units)," American petroleum institute specification 5CT, as published by the American petroleum institute in October 1998; or

    c. North Dakota Administrative Code Section 43-02-03-21; or

    d. Other casing as approved by the commission.

6. All casings used in new wells must be new casing or reconditioned casing of a quality equivalent to new casing and that has been pressure-tested in accordance with the requirements of subsection (5) of section 43-05-01-11. For new casings, the

pressure test conducted at the manufacturing mill or fabrication plant may be used to fulfill the requirements of subsection (5).

7. The location and amount of cement behind casings must be verified by a cement bond log, cement evaluation log, or any other evaluation method approved by the commission.

8. All injection wells must be completed with and injection must be through tubing and packer.

9. All tubing strings must meet the standards contained in subsection (5) of section 43-05-01-11. All tubing must be new tubing or reconditioned tubing of a quality equivalent to new tubing and that has been pressure-tested. For new tubing, the pressure test conducted at the manufacturing mill or fabrication plant may be used to fulfill this requirement.

10. All wellhead components, including the casinghead and tubing head, valves, and fittings, must be made of steel having operating pressure ratings sufficient to exceed the maximum injection pressures computed at the wellhead and to withstand the corrosive nature of carbon dioxide. Each flow line connected to the wellhead must be equipped with a manually operated positive shutoff valve located on or near the wellhead.

11. All packers, packer elements, or similar equipment critical to the containment of carbon dioxide must be of a quality to withstand exposure to carbon dioxide.

12. All injection wells must have at all times an accurate, operating pressure gauge or pressure recording device. Gauges must be calibrated as required by the commission and evidence of such calibration must be available to the commission upon request.

13. All newly drilled wells must establish internal and external mechanical integrity as specified by the commission and demonstrate continued mechanical integrity through periodic testing as determined by the commission. All other wells to be used as injection wells must demonstrate mechanical integrity as specified by the commission prior to use for injection and be tested on an ongoing basis as determined by the commission using these methods:

    a. Pressure tests. Injection wells, equipped with tubing and packer as required, must be pressure tested as required by the commission. A testing plan must be submitted to the commission for prior approval. At a minimum, the pressure must be applied to the tubing casing annulus at the surface for a period of thirty minutes and must have no decrease in pressure greater than ten percent of the required minimum test pressure. The packer must be set at a depth at which the packer will be opposite a cemented interval of the long string casing and must be set no more than fifty feet above the uppermost perforation or open hole for the storage reservoir(s); and

b. The commission may require additional testing such as a bottom hole temperature and pressure measurements, tracer survey, temperature survey, gamma ray log, neutron log, noise log, casing inspection log, or a combination of two or more of these surveys and logs, to demonstrate mechanical integrity.

14. The commission has the authority to witness all mechanical integrity tests conducted by the storage operator.

15. If an injection well fails to demonstrate mechanical integrity by an approved method, the storage operator shall immediately shut in the well, report the failure to the commission, and commence isolation and repair of the leak. The operator shall, within ninety days or as otherwise directed by the commission, perform one of the following:

    a. Repair and retest the well to demonstrate mechanical integrity;

    b. Properly plug the well; or

    c. Comply with alternative plan approved by the commission.

16. All injection wells must be equipped with shutoff systems designed to alert the operator and shut in wells when necessary.

17. Additional requirements may be required by the commission to address specific circumstances and types of projects.

43-05-01-12. AMENDMENT TO CARBON DIOXIDE STORAGE FACILITY WELL PERMITS.

1. An amendment to a well permit for: (1) a change in injection formation, or (2) modifying the maximum allowable injection rate and pressure, must comply with the provisions of section 43-05-01-05.

2. Modifying well construction must comply with section 43-05-01-09.

43-05-01-13. STORAGE FACILITY OPERATIONAL SAFETY PLANS. Each storage operator shall implement the commission-approved storage facility public safety and emergency response plan and the worker safety plan proposed in section 43-05-01-05. This plan must include emergency response and security procedures. The plan, including revision of the list of contractors and equipment vendors, must be updated as necessary or as the commission requires. Copies of the plans must be available at the storage facility and at the storage operator's nearest operational office.

43-05-01-14. LEAK DETECTION AND REPORTING.

1. Leak detectors or other approved leak detection methodologies must be placed at the wellhead of all injection and subsurface observation wells. Leak detectors must be integrated, where applicable, with automated warning systems and must be inspected and tested on a semi-annual basis and if defective, shall be repaired or replaced within ten days. Each repaired or replaced detector must be retested if required by the commission. An extension of time for repair or replacement of a leak detector may be granted upon a showing of good cause by the storage operator. A record of each inspection must include the inspection results, must be maintained by the operator for at least six years and must be made available to the commission upon request.

2. The storage operator must immediately report to the commission any leak~~s~~ detected at any well or surface facility.

3. The storage operator must immediately report to the commission any pressure changes or other monitoring data from subsurface observation wells that indicate the presence of leaks in the storage reservoir.

4. The storage operator must immediately report to the commission any other indication that the storage facility is not containing carbon dioxide, whether the lack of containment concerns the storage reservoir, surface equipment or any other aspect of the storage facility.

43-05-01-15. STORAGE FACILITY CORROSION MONITORING AND PREVENTION REQUIREMENTS. Each operator must conduct a corrosion monitoring and prevention program approved by the commission.

43-05-01-16. STORAGE FACILITY IDENTIFICATION REQUIREMENTS. Identification signs must be placed at each storage facility in a centralized location and at each well site. The signs must show the name of the operator, the facility name and the emergency response number to contact the operator.

43-05-01-17 STORAGE FACILITY FEES

1. Each storage operator shall pay the commission a fee of $0.01 on each ton of carbon dioxide injected for storage.

2. Each storage operator shall pay the commission a fee of $0.07 on each ton of carbon dioxide injected for storage.

43-05-01-18. QUARTERLY AND ANNUAL REPORTING REQUIREMENTS.

1. The storage operator shall file with the commission quarterly, or more frequently if the commission requires, a report on the volume of carbon dioxide injected into or withdrawn since the last report, the average injection rate, average composition of the carbon dioxide stream, wellhead and downhole temperature and pressure data or other pertinent operational parameters as required by the commission.

2. The quarterly report is due thirty days after the end of the quarter.

3. The storage operator shall file with the commission an annual report that summarizes the quarterly reports and that provides updated projections of the response and storage capacity of the storage reservoir. The projections must be based on actual reservoir operational experience, including all new geologic data and information. All anomalies in predicted behavior as indicated in permit conditions or in the assumptions upon which the permit was issued must be explained and, if necessary, the permit conditions amended in accordance with section 43-05-01-07. The annual report is due forty-five days after the end of the year.

43-05-01-19. FACILITY CLOSURE.

1. Prior to the conclusion of the operational period, and at a time set by the commission, the storage operator must provide an assessment of the operations conducted during the operational period, including but not limited to the volumes injected, volumes extracted, all chemical analyses conducted, summary of all monitoring efforts, etc. The report must also document the stored carbon dioxide's location and characteristics and predict how it might move during the closure period.

2. The storage operator shall submit a monitoring plan for the closure period for approval by the commission, including but not limited to a proposal specifying which wells will be plugged and which will remain unplugged to be used as subsurface observation wells.

3. Following well plugging and removal of all surface equipment, the surface must be reclaimed to the commission's specifications that will, in general, return the land as closely as practicable to original condition.

4. The well casing must be cut off at a depth of five feet below the surface and a steel plate welded on top identifying well name and that it was used for carbon dioxide injection.

5. The commission shall develop in conjunction with the storage operator a continuing monitoring plan for the post closure period including but not limited to a review and final approval of wells to be plugged.

6. Upon project closure all wells designated by the commission must be properly plugged and abandoned, all storage facility equipment, appurtenances and structures

removed, and the project area reclaimed to the commission's specifications that will, in general, return the land as closely as practicable to original condition.

7. All subsurface observation and groundwater monitoring wells as approved in the closure plan must remain in place for continued monitoring during the closure period.

8. Before the closure period ends and at a time set by the commission, the storage operator shall provide a final assessment of the stored carbon dioxide's location, characteristics, and its future movement and location within the storage reservoir.

9. Wells other than those deemed as subsurface observation wells per subsection 2 shall be plugged by the storage operator in accordance with section 43-02-03-34.

43-05-01-20. DETERMINING STORAGE AMOUNTS.

1. The commission, after notice and hearing shall issue an order determining the amount of injected carbon dioxide stored in a reservoir that has been or is being used for an enhanced oil or gas recovery project, or in a storage reservoir that has been or is being used for storage under a permit issued pursuant to chapter 38-22 of the North Dakota Century Code.

2. Any person applying for a storage amount determination shall pay a processing fee.

   Processing fee. The applicant shall pay a processing fee based on the commission's actual processing costs, including computer data processing costs, as determined by the commission. The following procedures and criteria will be utilized in establishing the fee:

   a. A record of all application processing costs incurred must be maintained by the commission.

   b. Promptly after receiving an application, the commission shall prepare and submit to the applicant an estimate of the processing fee and a payment billing schedule.

   c. After the commission's work on the application has concluded a final statement will be sent to the applicant. The full processing fee must be paid before the commission issues its decision on the application.

   d. The applicant must pay the processing fee even if the application is denied or withdrawn.

History: Amended effective
General Authority Law Implemented