PROPOSED 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)

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, the proposed pad layout, including cut and fill diagrams, 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.

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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.

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.

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 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 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. 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], 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.

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.

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 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 used solely for the purpose of flaring casinghead gas. A pit used for this purpose must be sufficiently impermeable to provide adequate temporary containment of fluids. Permission for such a pit will be conditioned on keeping the pit 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 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.

History: Effective September 1, 2000.

General Authority
NDCC 38-08-04

Law Implemented
NDCC 38-08-04

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.

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.

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.

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 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 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.

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.

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.

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.

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.

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.

General Authority
NDCC 28-32-06

Law Implemented
NDCC 28-32-06

NOTE: THIS IS A NEW CHAPTER

GEOLOGIC CO_2 STORAGE
CHAPTER 43-02-04.1

43-02-04.1-01. DEFINITIONS. The terms used throughout this chapter have the same meaning as in chapter 43-02-03 and North Dakota Century Code chapter 38-08 except:

1. "CO_2" means carbon dioxide of sufficient purity and quality as to not compromise the safety and efficiency of the reservoir to effectively contain the CO_2.

2. "CO_2 facility" means all surface and subsurface infrastructure including wellhead equipment, downhole well equipment, compression facilities and CO_2 flow lines from injection facilities to wells within the geological storage unit, monitoring instrumentation, injection equipment, and offices. CO_2 facility does not include the main transportation pipeline to the geological storage unit and pump stations along that pipeline.

3. "CO_2 flow lines" means the pipeline transporting the CO_2 from the CO_2 facility injection facilities to the wellhead.

4. "CO_2 injection well" means a well used to inject CO_2 into or withdraw CO_2 from a reservoir.

5. "CO_2 storage project" means CO_2 storage project in entirety including CO_2 facility and geological storage unit.

6. "CO_2 storage project closure period" means that period of time (ten years unless otherwise designated by commission) from the permanent cessation of active CO_2 storage project injection operations until the expiration of the CO_2 storage project performance bond, unless monitoring efforts following the operational period demonstrate to commission that a different time frame is appropriate.

7. "CO_2 storage project operational period" means the period of time in which injection occurs.

8. "CO_2 storage project operator" means any person, corporation, partnership, limited liability company, or other entity authorized by the commission to operate a storage facility and required by commission to hold the permit.

9. "CO_2 storage project permit" means the permit issued by the state or province to operate a CO_2 storage project.

10. "CO_2 storage project post closure period" means that period of time after the release of the CO_2 storage project performance bond.

11. "Formation fracture pressure" means the pressure, measured in pounds per square inch, which, if applied to a subsurface formation, will cause that formation to physically fracture.

12. "Freshwater" means an underground source of drinking water unless otherwise defined by commission.

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

14. "Geological storage unit" means the reservoir used by an entity that holds the commission permit authorizing CO2 injection activities.

15. "Reservoir" means for the purposes of these rules any subsurface sand, stratum, formation, or cavity or void (whether natural or artificially created) including oil and natural gas reservoirs, saline formations and coal seams, suitable for or capable of being made suitable for the injection and safe and efficient storage of CO2 therein.

16. "Commission" means the state agency designated by the state for purposes of these regulations.

17. "Subsurface observation well" means a well either completed or recompleted for the purpose of observing subsurface phenomena, including the presence of CO2, pressure fluctuations, fluid levels and flow, temperature, and in situ water chemistry.

18. "Underground source of drinking water" means an aquifer or any portion thereof which supplies drinking water for human consumption, or in which the ground water contains fewer than ten thousand milligrams per liter total dissolved solids and which is not an exempted aquifer.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-02. SCOPE OF CHAPTER. The following rules and regulations shall govern the geologic storage of CO_2. These rules apply to all CO_2 storage operations occurring within the territorial jurisdiction of the state of North Dakota.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-03. SITE ACCESS. The commission shall, at all times, have access to and may inspect all CO2 storage operations and records for the purpose of determining that performance is being conducted in accordance with the CO_2 storage project permit, or the requirements pursuant to sections 43-02-04.1-03 through 43-02-04.1-09, or in accordance with the orders of commission approving CO2 storage operations.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-04. CO_2 STORAGE PROJECT PERMIT TRANSFER.

1. Transfer notification by transferor. The CO_2 storage project operator shall notify commission, in writing, in such form as commission may direct, of the sale, assignment, transfer, conveyance, exchange, or other disposition of the CO_2 storage project by the operator of the CO_2 storage project as soon as is reasonably possible, but in no event later than the date that the sale, assignment, transfer, conveyance, exchange, or other disposition becomes final. The operator shall not be relieved of responsibility for the CO_2 storage project until commission approves the sale, assignment, transfer, conveyance, exchange, or other disposition, in writing, and the person or entity acquiring the CO_2 storage project is in compliance with all appropriate requirements. The operator's notice shall contain all of the following:

    a. The name and address of the person or entity to whom the CO_2 storage project was or will be sold, assigned, transferred, conveyed, exchanged, or otherwise disposed.

    b. The name and location of the CO_2 storage project, and a description of the land upon which the CO_2 storage project is situated.

    c. The date that the sale, assignment, transfer, conveyance, exchange, or other disposition becomes final.

    d. The date when possession was or will be relinquished by the operator as a result of that disposition.

2. Transfer notification by transferee. Every person or entity who acquires the right to operate a CO_2 storage project, whether by purchase, transfer, assignment, conveyance, exchange, or other disposition, shall, as soon as it is reasonably possible, but not later than the date when the acquisition of the CO_2 storage project becomes final, notify commission in writing, of the person's or entity's operation. The acquisition of a CO_2 storage project shall not be recognized as complete by commission until the new operator provides all of the following material:

    a. The name and address of the person or entity from whom the CO_2 storage project was acquired.

b. The name and location of the CO_2 storage project, and a description of the land upon which the CO_2 storage project is situated.

c. The date when the acquisition becomes final.

d. The date when possession was or will be acquired.

e. Performance bonds required by Geologic CO2 storage regulations 43-02-04.1-04.1.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-04

43-02-04.1-04.1. CO_2 STORAGE PROJECT PERMIT.

1. No CO_2 storage project shall be constructed or operated without:

   a. The CO_2 storage project operator holding the necessary and sufficient property rights for construction and operation of the CO_2 storage project. The CO_2 storage project operator is deemed to be holding such rights for any individual property to the extent that the applicant has initiated amalgamation proceedings related to that property and thereby gained the right of access to the property. The intention of the CO_2 storage project operator to employ amalgamation to acquire property rights shall be included in public notice as defined in section 43-02-04.1-05; and

   b. Obtaining a permit from the commission.

2. Application for CO_2 storage project permit shall be submitted to the commission as required and shall include the following:

   a. A current site map showing the boundaries of the geological storage unit, the location and well number of all proposed CO_2 injection wells, including any subsurface observation wells and the location of all other wells including cathodic protection boreholes and the location of all pertinent surface facilities within the boundary of the CO_2 storage project;

   b. A technical evaluation of the proposed CO_2 storage project including but not limited to the following:

      (1) The name of the geological storage unit;

      (2) The name, description, and average depth of the reservoir or reservoirs to be utilized for geologic CO_2 storage;

(3) A geologic and hydrogeologic evaluation of the geological storage unit, including an evaluation of all existing information on all geologic strata overlying the geological storage unit including the immediate caprock containment characteristics and all designated subsurface monitoring zones. The evaluation shall 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 shall focus on the proposed CO_2 storage reservoir or reservoirs and a description of 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 CO_2 beyond the proposed storage reservoir. The evaluation shall also identify any productive oil and natural gas zones occurring stratigraphically above, below or within the geological storage unit and any freshwater-bearing horizons known to be developed in the immediate vicinity of the geological storage unit. The evaluation shall 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 one mile of the outside boundary of the geological storage unit;

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

(c) Any regional or local faulting;

(d) An isopach map of the proposed CO_2 storage reservoir or reservoirs;

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

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

(g) Identification of all structural spill points or stratigraphic discontinuities controlling the isolation of stored CO_2 or associated fluids;

(h) An 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 reservoir.

(4) A review of the data of public record for all wells within the CO_2 storage project permit, which penetrate the reservoir or primary or secondary seals overlying the reservoir designated as the CO_2 storage reservoir, and those

wells that penetrate the geologic CO_2 storage reservoir within one mile, or any other distance as deemed necessary by the commission, of the boundary of the geological storage unit. This review shall determine if all abandoned wells have been plugged in a manner that prevents the movement of CO_2 or associated fluids from the geologic CO_2 storage reservoir. The review required under this paragraph shall be conducted by a geologist or engineer;

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

(6) The proposed maximum bottom hole injection pressure to be utilized at the reservoir. The maximum allowed injection pressure, measured in psig, shall be no greater than ninety percent or other injection pressures approved by the commission of the formation fracture pressure as determined by a step rate test or other method approved by the commission. The geological storage unit shall not be subjected to injection pressures in excess of the calculated fracture pressure even for short periods of time. Higher operating pressures may be allowed if approved by the commission. The application, if approved by the commission, shall be subject to any conditions established by the commission;

(7) The proposed maximum long-term geological storage unit pressure and the necessary technical data to support the proposed geological storage unit storage pressure request.

c. The extent of the CO_2, determined by utilizing all available geologic and reservoir engineering information, and the projected response and storage capacity of the geological storage unit;

d. A detailed description of the proposed CO_2 facility public safety and emergency response plan. The plan shall detail the safety procedures concerning the facility and residential, commercial, and public land use within one mile [1.61 kilometers], or any other distance as deemed necessary by the commission, of the outside boundary of the CO_2 storage project permit. The public safety and emergency response procedures shall include contingency plans for CO_2 leakage from any well, flow lines or other permitted facility. The public safety and emergency response procedures shall also identify specific contractors and equipment vendors capable of providing necessary services and equipment to respond to such CO_2 injection well leaks or loss of containment from CO_2 injection wells or the CO_2 storage reservoir. These emergency response procedures should be updated as necessary throughout the operational life of the permitted storage facilities;

e. A detailed worker safety plan that addresses CO_2 safety training and safe working procedures at the CO_2 facility;

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

g. A CO_2 facility leak detection and monitoring plan for all wells and surface facilities. The approved leak detection and monitoring plan shall address:

(1) Identification of potential release to the atmosphere;

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

(3) Identification of potential migration of CO_2 into any overlying oil and natural gas reservoirs.

h. A geological storage unit leak detection and monitoring plan utilizing subsurface observation wells to monitor any movement of the CO_2 volume outside of the permitted geological storage unit. This may include the collection of baseline information of CO_2 background concentrations in groundwater, surface soils, and chemical composition of in situ waters within the geological storage unit. The approved subsurface leak detection and monitoring plan shall be dictated by the site characteristics as documented by materials submitted in support of the application with regard to CO_2 containment and address:

(1) Identification of potential release to the atmosphere;

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

(3) Identification of potential migration of CO_2 into any overlying oil and natural gas reservoirs.

i. The proposed well casing and cementing program detailing compliance with section 43-02-04.1-06;

j. A performance bond covering the surface facility to the commission in an amount as established by the commission. The amount of the bond shall be sufficient to provide financial assurance to the commission to cover the abandonment of the CO_2 storage project or remediation of facility leaks should the CO_2 storage project operator not perform as required or cease to exist. The CO_2 storage project bond shall be maintained for ten years after closure of the facility in accordance with section 43-02-04.1-09;

k. A performance bond for each CO_2 injection and subsurface observation well to the commission in an amount as established by the commission. The amount of the bond shall be sufficient to provide financial assurance to the commission to cover the plugging and abandonment or the remediation of a CO_2 injection or subsurface observation well should the CO_2 storage project operator not perform as required in accordance with the permit or cease to exist;

l. Any other information that the commission requires; and

m. A closure plan.

3. Any person establishing a new CO_2 storage project or amending a CO_2 storage project permit shall pay an application fee and a processing fee to be deposited in the carbon dioxide storage administration fund.

   a. Application fee. A nonrefundable filing fee of one hundred fifty dollars must be submitted with the permit application.

   b. Processing fee. The applicant shall pay a processing fee based on actual processing costs, including computer data processing costs, incurred by the commission the cost of which would exceed one hundred fifty dollars as determined by the commission. The following procedures and criteria will be utilized in establishing the fee:

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

      (2) Upon request, the commission, in consultation with the applicant, will prepare an estimate of the processing fee and the billing schedule that will be utilized in processing the application. If the applicant chooses, the applicant may withdraw the application at this point without paying any processing fees.

      (3) After final determinations on the application have been made, a final statement will be sent to the applicant containing the remaining actual processing costs incurred by the department.

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

History: Amended effective January

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-04

43-02-04.1-04.2. AMENDMENT TO CO_2 STORAGE PROJECT PERMIT.

1. The following changes to the original CO_2 storage project permit conditions will require compliance with all the provisions of section 43-02-04.1-04.1.

   a. Any change in the original areal extent of the CO_2 storage project permit;

   b. Utilization of other reservoirs not specified in the original CO_2 storage project permit;

c. Any proposed increase in the permitted CO2 storage volume; and

d. Any change in the chemical composition of the injected CO2 from the CO2 composition at the time of permitting.

2. Other significant changes to approved operational parameters contained in the original CO_2 storage project permit will require compliance with section 43-02-04.1-04.1.(2).

History: Amended effective January 1, 2008.

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-09

43-02-04.1-05. AMALGAMATION OF SUBSURFACE RIGHTS TO OPERATE GEOLOGICAL STORAGE UNIT.

1. Each application required under section 43-02-04.1-04.1 shall include a public hearing before the commission for the purposes of joining the necessary property ownership rights, as defined by the state.

2. Each applicant for a CO_2 storage project shall give notice of the filing of an application on or before the date the application is filed with the commission by mailing notice via first class mail to the following:

   a. Each operator of hydrocarbon or other mineral extraction activities, or mineral lessee of record within one-half mile external to the boundary of the proposed CO_2 storage project permit;

   b. Each owner of record of the surface property and minerals within the boundaries of the proposed CO_2 storage project permit;

   c. Each owner of record of the surface property and minerals within one-half mile [.80 kilometer] external to the boundary of the proposed CO_2 storage project permit; and

   d. Any other parties as required by the commission.

3. The above notice shall contain a legal description of the proposed CO_2 storage project permit along with the date, time and place of the hearing before the commission and include notice of the right to file comments.

4. In addition to mail notice of the above parties, public notice via publication shall be required. The public notice shall indicate that an application has been filed with the commission for a CO_2 storage project and indicate the location of the proposed project and the date, time and place of the hearing before the commission to determine issuance

of the application. Publication shall be in a newspaper of statewide circulation and in the county newspaper of each county in which the CO_2 storage project is located. The notice shall indicate that objections may be filed within fifteen days of the date of publication.

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

6. Upon review of the application submitted in accordance with section 43-02-04.1-04.1 and following the public hearing specified in this section, authorization to commence construction of the CO_2 storage project shall be issued following approval by the commission.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-10

43-02-04.1-06. CO_2 STORAGE PROJECT WELL PERMIT APPLICATION REQUIREMENTS

1. Following receipt of authorization to commence the CO_2 storage project issued by the commission in accordance with section 43-02-04.1-04.1, the applicant shall submit applications to drill, convert or, upon demonstration of mechanical integrity, re-enter a previously plugged and abandoned well for the CO_2 storage purposes.

2. Application for permits to drill, deepen, convert, re-enter (drill out a previously plugged well) or operate a well shall be submitted on a form as prescribed by the commission and shall include at a minimum:

   a. A plat prepared by a licensed land surveyor showing the location of the proposed CO_2 injection or subsurface observation well. The plat shall be drawn to the scale of one inch [25.4 millimeters] equals one thousand feet [304.8 meters], unless otherwise stipulated by the commission and shall show distances from the proposed well to the nearest geological storage unit boundary. The plat shall show the latitude and longitude of the well in decimal degrees to five significant digits. The plat shall 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 CO_2 injection or subsurface observation well;

   b. A prognosis specifying the drilling, completion, or conversion procedures for the proposed CO_2 injection or subsurface observation well;

   c. A well bore schematic showing the name, description, and depth of the proposed reservoir and the depth of the deepest underground source of drinking water; a description of the casing in the CO_2 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 CO_2 injection well;

d. A geophysical log, if available, through the reservoir to be penetrated by the proposed CO_2 injection well or if a CO_2 injection or subsurface observation well is to be drilled, a complete log through the reservoir from a nearby well is permissible. Such log shall 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 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 a CO_2 injection well and shall 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 reservoir and the base of the deepest underground source of drinking water; a diagram of the CO_2 injection well depicting the casing, cementing, perforation, tubing, and plug and packer records associated with the construction of the CO_2 injection well;

c. A complete dual induction or equivalent log through the reservoir of the CO_2 injection well. Such log for wells drilled for CO_2 injection operations shall be run prior to the setting of casing through the CO_2 storage reservoir. Logs shall 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 and the stratigraphic position and thickness of the reservoir unless 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 CO_2 and their relative proportions;

e. Proof that the long string of casing of the CO_2 injection well is cemented adequately so that the CO_2 is confined to the geological storage unit. Such proof shall 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 issuance of a conversion permit for a previously drilled well.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-06.1. CO_2 STORAGE PROJECT WELL PERMIT ISSUANCE.

1. Upon review and approval of the application to drill, deepen, convert, re-enter (drill out a previously plugged well) or operate a CO_2 injection well, submitted in accordance with section 43-02-04.1-06, the commission shall issue permits to drill and operate.

2. A permit shall expire twelve months from the date of issuance if the permitted well has not been drilled or converted.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-06.2. CO_2 STORAGE PROJECT WELL OPERATIONAL STANDARDS.

1. Surface casing in all newly drilled CO_2 injection and subsurface observation wells drilled below the underground source of drinking water shall 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 CO_2 injection and subsurface observation wells shall be cemented pursuant to section 43-02-03-21.

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

4. All cements used in the cementing of casings in CO_2 injection and subsurface observation wells shall be of sufficient quality to maintain well integrity in the CO_2 injection environment.

5. All casings shall 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. Section 43-02-03-21 other casing as approved by the commission.

6. All casings used in new wells shall be new casing or reconditioned casing of equivalent quality that has been pressure-tested in accordance with the requirements of subsection (5) of section 43-02-04.1-06.2. 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 shall be verified by a cement bond log, cement evaluation log, or any other evaluation method approved by the commission.

8. All CO_2 injection wells shall be completed with and injection shall be through tubing and packer.

9. All tubing strings shall meet the standards contained in subsection (5) of section 43-02-04-1.06.2. All tubing shall be new tubing or reconditioned tubing of equivalent quality 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, shall 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 CO_2. Each flow line connected to the wellhead shall 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 CO_2 shall be of a quality to withstand exposure to CO_2.

12. An accurate, operating pressure gauge or pressure recording device shall be available at all times, and all injection wells shall be equipped for installation and operation of such gauge or device. Gauges shall be calibrated as required by the commission and evidence of such calibration shall be available to the commission upon request.

13. All newly drilled wells shall 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 existing wells to be used as CO_2 injection wells will demonstrate mechanical integrity as specified by the commission prior to use for CO_2 injection and be tested on an ongoing basis as determined by the commission using these methods:

    a. Pressure tests. CO_2 injection wells, equipped with tubing and packer as required, shall be pressure tested as required by the commission. A testing plan shall be submitted to CO_2 the commission for prior approval. At a minimum, the pressure shall be applied to the tubing casing annulus at the surface for a period of 30 minutes and shall have no decrease in pressure greater than 10 percent of the required minimum test pressure. The packer shall be set at a depth at which the

packer will be opposite a cemented interval of the long string casing and shall be set no more than 50 feet above the uppermost perforation or open hole for the CO_2 storage reservoir; 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. Supervision of mechanical integrity testing. The commission may witness all mechanical integrity tests conducted by each CO_2 storage project operator for regulatory purposes.

15. If a CO_2 injection well fails to demonstrate mechanical integrity by an approved method, the operator of the well 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. Plug the well in accordance with state requirements; or

    c. Comply with alternative plan as approved by the commission.

16. All CO_2 injection wells shall be equipped with down-hole safety shutoff valves.

17. Additional requirements may be required by the commission to address specific circumstances and types of projects not specified in these rules.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-06.3. AMENDMENT TO CO_2 STORAGE PROJECT WELL PERMITS.

1. An amendment to the CO_2 storage project well permit for: (1) a change in injection formation, or (2) a modification of maximum allowable injection rate and pressure, shall comply with the provisions of section 43-02-04.1-04.1.

2. Modification of well construction shall comply with the provisions of section 43-02-04.1-06.

History: Amended effective

General Authority

Law Implemented

43-02-04.1-07. CO_2 STORAGE PROJECT OPERATIONAL SAFETY PLANS. Each operator of a CO_2 storage project shall implement the commission-approved CO_2 facility public safety and emergency response plan and the worker safety plan proposed in section 43-02-04.1-04.1. This plan shall include emergency response and security procedures. The plans, including revision of the list of contractors and equipment vendors, shall be updated as necessary or as the commission requires. Copies of the plans shall be available at the CO_2 facility and at the nearest operational office of the holder of the CO_2 storage project permit.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-07.1. CO_2 STORAGE PROJECT OPERATIONAL LEAK DETECTION AND REPORTING.

1. Leak detectors or other approved leak detection methodologies shall be placed at the wellhead of all CO_2 injection and subsurface observation wells. Leak detectors shall be integrated, where applicable, with automated warning systems and shall be inspected and tested on a semi-annual basis and if defective, shall be repaired or replaced within 10 days. Each repaired or replaced detector shall 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 operator of the CO_2 storage project. A record of each inspection, which shall include the inspection results, shall be maintained by the operator for at least five years and shall be made available to the state oil and natural gas regulatory agency upon request.

2. The operator of a CO_2 storage project shall immediately report to the commission any leaks detected at the surface facility and associated well equipment specified in section 43-02-04.1-07.1(1).

3. The operator of a CO_2 storage project shall immediately report to the commission any pressure changes or other monitoring data from subsurface observation wells that indicate the presence of leaks in the geological storage unit indicating the lack of confinement within the reservoir of the CO_2.

4. The operator of a CO_2 storage project shall immediately report to the commission any other indication of lack of containment of CO_2 to the reservoir not associated with wells and surface equipment.

History: Amended effective

General Authority

Law Implemented

43-02-04.1-07.2. CO_2 STORAGE PROJECT OTHER GENERAL REQUIREMENTS.

1. Each operator shall be required to conduct a corrosion monitoring and prevention program approved by the commission.

2. Identification signs shall be placed at each facility in a centralized location and at each well site and show the name of the operator, the facility name and the emergency response number to contact the operator.

3. Each storage operator shall pay the commission a fee of $0.01 on each ton of carbon dioxide injected for storage, to be deposited in the carbon dioxide storage facility administrative fund.

4. Each storage operator shall pay the commission a fee of $0.07 on each ton of carbon dioxide injected for storage, to be deposited in the carbon dioxide storage facility trust fund.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-08. REPORTING REQUIREMENTS.

1. The volume of CO_2 injected into or withdrawn since the last reporting, the average injection rate, average composition of the CO_2 stream, wellhead and downhole temperature and pressure data or other pertinent operational parameters as required by the commission shall be reported quarterly or as required by the commission.

2. These quarterly reports shall be compiled and summarized annually to provide updated projections of the response and storage capacity of the geological storage unit. The projections shall be based on actual geological storage unit operational experience, including all new geologic data and information. All anomalies in predicted behavior as indicated in the most current permit conditions shall be explained and, if necessary, the permit conditions amended in accordance with section 43-02-04.1-04.2.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-03

43-02-04.1-09. CO_2 STORAGE PROJECT CLOSURE.

1. Prior to the conclusion of the operational period, the time period to be determined by the commission, the CO_2 storage project permit holder shall provide an assessment of the operations conducted during the operational period, including but not limited to the volumes injected, extracted, any and all chemical analyses conducted, summary of all monitoring efforts, etc. The report shall also document the position and characteristics of the areal extent of the CO_2 and a prediction of the extent and movement of the CO_2 volume anticipated during the CO_2 storage project closure period.

2. The permittee shall submit a monitoring plan for the CO_2 storage project closure period for approval by the commission, including but not limited to a review and final approval of which wells will be plugged and which wells will remain unplugged to be used as CO_2 storage project closure and post closure period subsurface observation wells.

3. Following well plugging, all associated surface equipment shall be removed and the well site returned to its original land use to the extent possible.

4. The well casing shall be cut off at a depth of 5 feet below the surface and a steel plate welded on top identifying well name and that it was used for CO_2 injection.

5. The commission shall develop in conjunction with the permittee a continuing monitoring plan for the CO_2 storage project post closure period including but not limited to a review and final approval of which wells shall be plugged. The commission shall have full control of and responsibility for the remaining unplugged wells to be used by the commission as CO_2 storage project post closure period subsurface observation wells or for other purposes as deemed necessary by the commission.

6. Upon CO_2 storage project closure all wells so designated by the commission shall be properly plugged and abandoned, all CO_2 facility equipment and facilities shall be removed, and the CO_2 storage project site reclaimed in accordance with commission requirements.

7. All subsurface observation and groundwater monitoring wells as approved in the CO_2 storage project closure period monitoring plan shall remain in place for continued monitoring during CO_2 storage project closure period.

8. Upon termination of the CO_2 storage project closure period, the permittee shall provide a final assessment of the subsurface position and the characteristics of the CO_2 volume within the geological storage unit including the future movement and position of the CO_2 volume within the geological storage unit.

9. Wells other than those deemed as subsurface observation wells per subsection (5) of section 43-02-04.1-09, shall be plugged by the permittee in accordance with subsection (6) of section 43-02-04.1-09.

10. At the conclusion of the CO_2 storage project closure period, the commission shall issue a Certificate of Completion of Injection Operations, upon a showing by the CO_2 storage project operator that the reservoir is reasonably expected to retain mechanical integrity and remain emplaced, the CO_2 storage project performance bond maintained by the CO_2 storage project operator shall be released and continued monitoring of the site, remediation of any well leakage, including wells previously plugged and abandoned by the CO_2 storage project operator, shall become the responsibility of designated state or federal agency program and the CO_2 storage project operator and generator of the CO_2 shall be released from further commission regulatory liability relating to the CO_2 facility.

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-17

43-02-04.1-10. 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.

2. Any person making application for a determination shall pay an application fee and a processing fee to be deposited in the carbon dioxide storage administration fund.

   a. Application fee. A nonrefundable filing fee of one hundred fifty dollars must be submitted with the permit application.

   b. Processing fee. The applicant shall pay a processing fee based on actual processing costs, including computer data processing costs, incurred by the commission, the cost of which would exceed one hundred fifty dollars as determined by the commission. The following procedures and criteria will be utilized in establishing the fee:

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

      (2) Upon request, the commission, in consultation with the applicant, will prepare an estimate of the processing fee and the billing schedule that will be utilized in processing the application. If the applicant chooses, the applicant may withdraw the application at this point without paying any processing fees.

      (3) After final determinations on the application have been made, a final statement will be sent to the applicant containing the remaining actual processing costs incurred by the department.

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

History: Amended effective

General Authority
NDCC 38-22

Law Implemented
NDCC 38-22-23

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 _____.

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.

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.

General Authority
NDCC 38-08.1

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