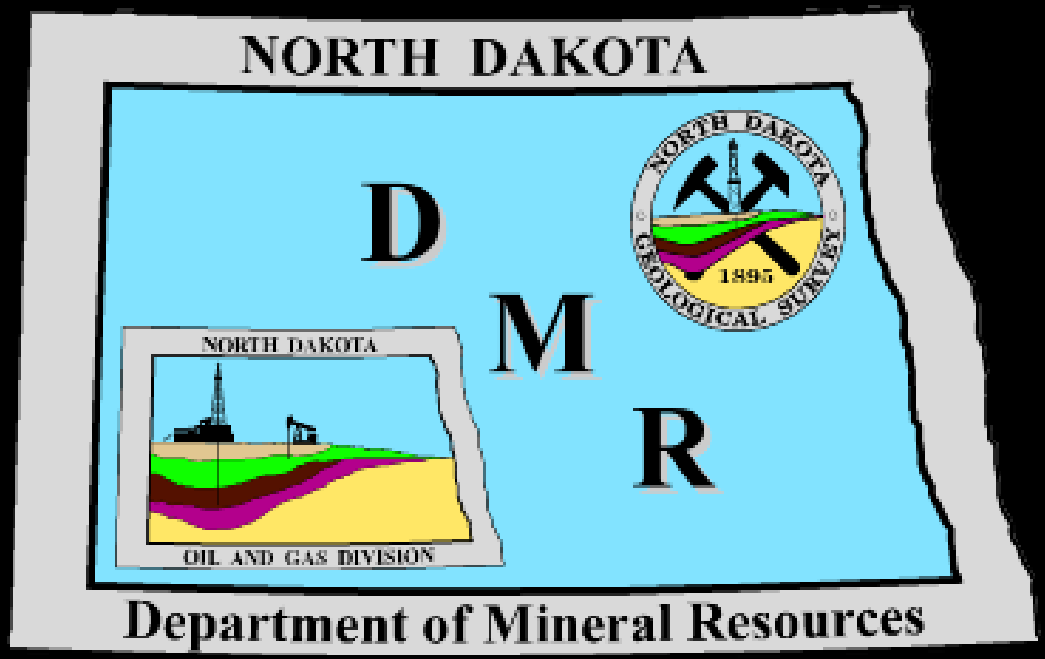
North Dakota Department of Mineral Resources



http://www.oilgas.nd.gov

http://www.state.nd.us/ndgs

600 East Boulevard Ave. - Dept 405
Bismarck, ND 58505-0840
(701) 328-8020 (701) 328-8000

NDCC Jurisdiction

38-08-04. JURISDICTION OF COMMISSION.

- The Commission has the authority to regulate disposal of saltwater and oilfield wastes.

WASTES GENERALLY CONSIST OF:

- Produced water with TDS ranging up to ~250,000 to 300,000 ppm
- Waste hydrocarbons
- Drill cuttings
- Drilling mud
- Completion fluids
- Tank bottoms
- BS&W
- Contaminated soils
- Solids from cleanup operations

Disposal of Waste

43-02-03-19.2. DISPOSAL OF WASTE MATERIAL.

- All waste material associated with exploration or production of oil and gas must be properly disposed of in an authorized facility in accord with all applicable local, state, and federal laws and regulations.

43-02-03-30.1. LEAK AND SPILL CLEANUP.

- At no time shall any spill or leak be allowed to flow over, pool, or rest on the surface of the land or infiltrate the soil. Discharged fluids must be properly removed and may not be allowed to remain standing within or outside of diked areas, although the remediation of such fluids may be allowed onsite if approved by the director. Operators must respond with appropriate resources to contain and clean up spills.

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.
- 2. Underground injection of saltwater liquids and brines shall be in accordance with chapter 43-02-05.
- Proposed rule change to require permitting and bonding.

Treating Plant Definition

- "Treating plant" means any plant permanently constructed or portable used for the purpose of wholly or partially reclaiming, treating, processing, or recycling tank bottoms, waste oils, drilling mud, waste from drilling operations, produced water, and other wastes related to crude oil and natural gas exploration and production. This is **not to be construed** as to include saltwater handling and disposal operations which typically recover skim oil from their operations, treating mud or cuttings at a well site during drilling operations, or treating flowback water during completion operations at a well site.

Treating Plant Rule

43-02-03-51. TREATING PLANT. No treating plant may be **constructed without obtaining a permit** from the commission after notice and hearing. A written application for a treating plant permit shall state in detail the location, type, capacity of the plant contemplated, method of processing proposed, and the plan of operation for all plant waste. The **commission shall give the county auditor notice at least fifteen days prior to the hearing** of any application in which a request for a treating plant is received.

- Public Hearing
  - Subsequent Order Authorizes Treating Plant
  - Conditioned on Operator Receiving and Complying with Permit

Treating Plant Rule

43-02-03-51.1. TREATING PLANT PERMIT REQUIREMENTS.

1. The treating plant permit application shall be submitted on **Form 1TP** and shall include at least the following information:

a. The name and address of the operator.

b. An accurate **plat** certified by a registered surveyor showing the location of the proposed treating plant and the center of the site with reference to true north and the nearest lines of a governmental section. The plat shall also include the latitude and longitude of the center of the proposed treating plant location to the nearest tenth of a second, the ground elevation, and the legal street address. The plat shall also **depict the outside perimeter of the treating plant and verification that the site is at least five hundred feet from an occupied dwelling**.

c. A schematic drawing of the proposed treating plant site, drawn to scale, detailing all facilities and equipment, including the **size, location, and purpose of all tanks**, the height and location of all dikes, the location of all flowlines, and the location of the topsoil stockpile. It shall also include the proposed road **access to the nearest existing public road and the authority to build such access**.

Treating Plant Rule

43-02-03-51.1. TREATING PLANT PERMIT REQUIREMENTS.

d. Cut and fill diagrams.

e. An affidavit of mailing identifying **each owner of any permanently occupied dwelling within one-quarter mile of the proposed treating plant** and certifying that such owner has been notified of the proposed treating plant.

f. Appropriate geological data on the surface geology.

g. Schematic drawings of the proposed diking and containment, including all areas underlain by a **synthetic liner**.

h. Monitoring plans and **leak detection for all buried or partially buried structures**.

i. The capacity and operational capacity of the treating plant.

- Leak Detection for All Buried or Partially Buried Tanks or Structures As Well As Concrete Pads on Which Solids are to be Stockpiled

Treating Plant Rule

43-02-03-51.1. TREATING PLANT PERMIT REQUIREMENTS.

2. Permits may contain such terms and conditions as the commission deems necessary.
3. Any permit issued under this section may be revoked by the commission after notice and hearing if the permittee fails to comply with the terms and conditions of the permit, any directive of the commission, or any applicable rule or statute. **Any permit issued under this section may be suspended by the director for cause**.
4. Permits are transferable only with approval of the commission.
5. Permits may be modified by the commission.
6. A permit shall automatically expire one year after the date it was issued, unless dirtwork operations have commenced to construct the site.
7. If the treating plant is abandoned and reclaimed, the permit shall expire and be of no further force and effect.

Treating Plant Rule

43-02-03-51.2. TREATING PLANT SITING. All treating plants shall be sited in such a fashion that they are not located in a geologically or hydrologically sensitive area.

- Surficial Aquifers
- Wellhead Protection Areas

Treating Plant Rule

43-02-03-51.3. TREATING PLANT CONSTRUCTION AND OPERATION REQUIREMENTS.

1. Before construction of a treating plant begins, the operator shall file with the commission a **surety bond or cash bond** conditioned upon compliance with all laws, rules and regulations, and orders of the commission. The bond amount shall be **specified in the commission order** authorizing the treating plant and shall be based upon the location, type, and capacity of the plant, processing method, and plan of operation for all plant waste approved in the commission order and shall be payable to the industrial commission. In no case shall the bond amount be set lower than fifty thousand dollars.
2. Treating plant sites and associated facilities or appropriate parts thereof shall be fenced if required by the director. All fences installed within or around any facility must be constructed in a manner that promotes emergency ingress and egress.
3. All storage tanks shall be kept free of leaks and in good condition. **Storage tanks for saltwater shall be constructed of, or lined with, materials resistant to the effects of saltwater**.

Treating Plant Rule

43-02-03-51.3. TREATING PLANT CONSTRUCTION AND OPERATION REQUIREMENTS.

4. All waste, recovered solids, and recovered fluids shall be stored and handled in such a manner to prevent runoff or migration offsite.

5. **Dikes** of sufficient dimension to contain the **total capacity of the maximum volume stored** must be erected and maintained around all storage and processing tanks. 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. **All processing equipment shall be underlain by a synthetic impermeable material, unless waived by the director**. A **perimeter dike** of sufficiently impermeable material shall be erected and maintained around the treating plant site. The site shall be sloped and diked to divert surface drainage away from the site. The operations of the treating plant shall be conducted in such a manner as to prevent leaks, spills, and fires. All accidentally discharged fluids and wastes shall be promptly and properly removed and shall not be allowed to remain standing within the diked area or on the treating plant premises. All such incidents shall be properly cleaned up, subject to approval by the director. All such incidents shall be promptly reported to the director and a detailed account of any such incident must be filed with the director in accordance with section 43-02-03-30.

Treating Plant Rule

43-02-03-51.3. TREATING PLANT CONSTRUCTION AND OPERATION REQUIREMENTS.

6. Immediately upon the **commencement** of treatment operations, the operator shall **notify the commission** in writing of such date.
7. The operator of a treating plant shall provide continuing surveillance and conduct such monitoring and sampling as the commission may require.
8. Storage pits, waste pits, or other **earthen storage areas shall be prohibited** unless authorized by an appropriate regulatory agency. A copy of said authorization shall be filed with the commission.
9. Burial of waste at any treating plant site shall be prohibited. All residual water and waste, fluid or solid, shall be disposed of in an authorized facility.
10. The operator shall take steps to **minimize** the amount of **residual waste generated** and the amount of residual waste **temporarily stored onsite**. Solid waste shall not be stockpiled onsite unless authorized by an appropriate regulatory agency. A copy of said authorization shall be filed with the commission.
11. If **deemed necessary by the Director**, the operator shall cause to be **analyzed any waste substance** contained onsite. Such chemical analysis shall be performed by a certified laboratory and shall adequately determine if chemical constituents exist which would categorize the waste as hazardous by state department of health standards.

Treating Plant Rule

43-02-03-51.3. TREATING PLANT CONSTRUCTION AND OPERATION REQUIREMENTS.

12. Treating plants shall be constructed and operated so as not to endanger surface or subsurface water supplies or cause degradation to surrounding lands and shall comply with section 43-02-03-28 concerning fire hazards.
13. The beginning of month inventory, the amount of waste received and the source of such waste, the volume of oil sold, the amount and disposition of water, the amount and disposition of residue waste, fluid or solid, and the end of month inventory for each treating plant shall be reported monthly on **Form 5P** with the director on or before the first day of the second succeeding month, **regardless of the status of operations**.
14. Records necessary to validate information submitted on Form 5P shall be maintained in North Dakota.
16. **All proposed changes** to any treating plant are **subject to approval** by the commission. Updated schematics shall be furnished to the commission within thirty days following any changes to the treating plant.
17. The operator shall comply with all applicable rules and orders of the commission**. All rules in this chapter governing oil well sites shall also apply to any treating plant site**.

Treating Plant Rule

43-02-03-51.4. TREATING PLANT ABANDONMENT AND RECLAMATION REQUIREMENTS.

1. **Notice of intention to abandon**. The operator or the operator's agent shall file a notice of intention (Sundry Notice Form 4) to abandon and obtain the approval of the director, prior to the commencement of abandonment operations. The notice shall state the name of the operator, the name and location of the treating plant, and a detailed account of proposed work. Within thirty days after the abandonment of any treating plant has been accomplished, the owner or operator thereof shall file a detailed account of the abandonment procedures on a Sundry Notice Form 4, and if requested, a copy of any job receipt setting forth in detail the method and operations used in abandoning the treating plant.
2. After abandonment, the site must be **reclaimed** pursuant to section 43-02-03-34.1.

Permitted and Proposed Treating Plants

- 24 Active
  - Only 1 in State Prior to April 2011
- 7 Permitted but not Active
- 2 Permits Pending
- 9,167,268 Barrels of Liquids and Solids Received Since January 2011
- 5,686,057 Barrels of Water Disposed
  - Saltwater Disposal Wells
- 714,562 Barrels and 279,453 Tons of Solids Disposed
  - Special Waste Landfills
  - Permitted by Health Department
- 1,933,639 Barrels of Oil Sold

Common Wastes Associated with Treating Plants

- Drilling Mud and Drill Cuttings
  - Freshwater
  - Oil-based
  - Saltwater-based
- Completion Fluids
- Produced Water
- Tank Bottoms
- Contaminated Soil
  - Crude Oil and/or Natural Gas Impacted Soil
  - Saltwater Impacted Soil
  - Generated from pipeline leaks, tank leaks or overflows, stuffing box/wellhead leaks, blowouts, etc.

Shale Shakers

Drill Cuttings Transfer

Co-Location of Treating Plants on SWD Sites

- County Feedback
- Attorney General Opinion February 5, 2010
  - County Zoning Ordinances Cannot be Applied to Oil, Gas, or Saltwater Disposal Wells. Comprehensive Nature of NDIC Statutory Authority Preempts County Regulation
- NDCC 38-08-04 (2) Amended
  - Requires NDIC to Give Counties Written Notice of Hearings Concerning Disposal of Saltwater and Oilfield Wastes
  - Consider Safety of Location and Road Access When Permitting Saltwater Disposal Wells and Treating Plants
- NDIC Orders Express That Whether a Treating Plant is Co-Located on a Saltwater Disposal Well Site or Not, Both Have Clearly Defined Regulations Under NDAC Chapters 43-02-03 and 43-02-05

Form 1TP

APPLICATION FOR TREATING PLANT - FORM 1TP

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
(07-2014)

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Reset Print

Type of Work		Approximate Date Construction Will Start	
Operator			Telephone Number
Address	City	State	Zip Code
Name of Surface Owner			
Address	City	State	Zip Code
☐ Notice has been provided to the owner of any permanently occupied dwelling within 1,320 feet of the site perimeter. Also see instructions.	☐ The treating plant site perimeter is not located within 500 feet of an occupied dwelling. Also see instructions.		

PLANT INFORMATION

Plant Name			Plant Number		
Surface Location F L F L	Qtr-Qtr	Section	Township N	Range W	County
Latitude of Center ° ' "	Longitude of Center ° ' "	NAD Reference NAD 83	Ground Elevation Feet Above S.L.		
Legal Street Address		City	State	Zip Code	
Identify the Primary Waste Streams to be Accepted					
Process Type(s) (Shale Shaker, Centrifuge, Filter Press, Filtering, Chemical or Gravity Separation, Thermal, etc.)					
Total Number of Tanks to be on Site	Total Enclosed Tank Volume to be on Site Barrels		Total Open-Topped Tank or Container Volume to be on Site Barrels		
Total Volume of Solids Stockpiled on Approved Medium or Substrate to be on Site Barrels			NOTE: Multiply Cubic Feet by 0.1781 to Obtain Barrels.		
Is There a Leak Detection System? Also See Instructions. ☐ Yes ☐ No		Will Oil be Recovered and Sold? ☐ Yes ☐ No			
Identify Any Other Permits Required from State Agencies					

Comments	

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.		Date
Signature	Printed Name	Title
Email Address(es)		

FOR STATE USE ONLY

Permit and Facility Number	Industrial Commission Order No.
Field	

FOR STATE USE ONLY

Date Approved
By
Title

Form 1 TP Instructions Page

APPLICATION FOR TREATING PLANT - FORM 1TP
SFN 1TP

1. Please refer to Section 43-02-03-51 through 51.4 of the North Dakota Administrative Code (NDAC) regarding treating plant permit requirements.
2. No treating plant may be constructed without obtaining a permit from the Commission after notice and hearing.
3. Before construction of a treating plant begins, the operator shall file with the Commission a surety bond or cash bond in the amount specified by the Commission.
4. The application for treating plant shall be accompanied by an accurate plat certified by a registered surveyor showing the location of the proposed treating plant and the center of the site with reference to true north and the nearest lines of a governmental section. The plat shall also include the latitude and longitude of the center of the proposed treating plant location to the nearest tenth of a second, the ground elevation, and the legal street address. The plat shall also depict the outside perimeter of the treating plant site and verification that the entire site is at least five hundred feet from an occupied dwelling.
5. The application for treating plant shall be accompanied by an affidavit of mailing identifying each owner of any permanently occupied dwelling within one-quarter mile of the proposed treating plant site and certifying that such owner has been notified of the proposed treating plant.
6. The application for treating plant shall be accompanied by schematic drawing(s) of the proposed treating plant site, drawn to scale, detailing all facilities and equipment, including the size, location, and purpose of all tanks, the height and location of all dikes as well as the calculated containment volume, all areas underlain by a synthetic liner, any leak detection system installed, the location of all flowlines, and the location of the topsoil stockpile. Also included shall be the proposed road access to the nearest existing public road and the authority to build such access.
7. The application for treating plant shall be accompanied by the proposed pad layout, including cut and fill diagrams.
8. The application for treating plant shall be accompanied by appropriate geological data on the surface geology.
9. The application for treating plant shall be accompanied by any proposed monitoring plans and leak detection system for all buried or partially buried structures, or any other structure deemed necessary.
10. The capacity and operational capacity of the treating plant shall be included.
11. The type of process shall be included, such as shale shaker, centrifuge, filter press, filtering, chemical or gravity separation, thermal, etc.
12. The application for treating plant shall be accompanied by a narrative description of the process and how the waste and recovered product streams travel through the treating plant.
13. The destination of the recovered wastes and products shall be included.
14. Identify other permits required from other state agencies (including air quality, stormwater, pollutant discharge elimination system, etc.).
15. Attach a map identifying any surficial aquifers and/or well head protection areas with the proposed treating plant location plotted on printout. Two websites where these features can be found are: http://www.nd.gov/gis/apps/HubExplorer/ (surficial aquifers found under hydrography and well head protection areas found under locations), and http://mapservice.swc.nd.gov/ (surficial aquifers and well head protection areas found under water resources).
16. The approved application for treating plant shall automatically expire one year after the date it was issued, unless dirtwork operations have commenced to construct the site.
17. All rules in Chapter 43-02-03 governing oil well sites shall also apply to any treating plant site if applicable.
18. The original and one copy of the entire application shall be filed with the Industrial Commission of North Dakota, Oil and Gas Division, 600 East Boulevard, Dept. 405, Bismarck, ND 58505-0840 before a hearing will be scheduled.

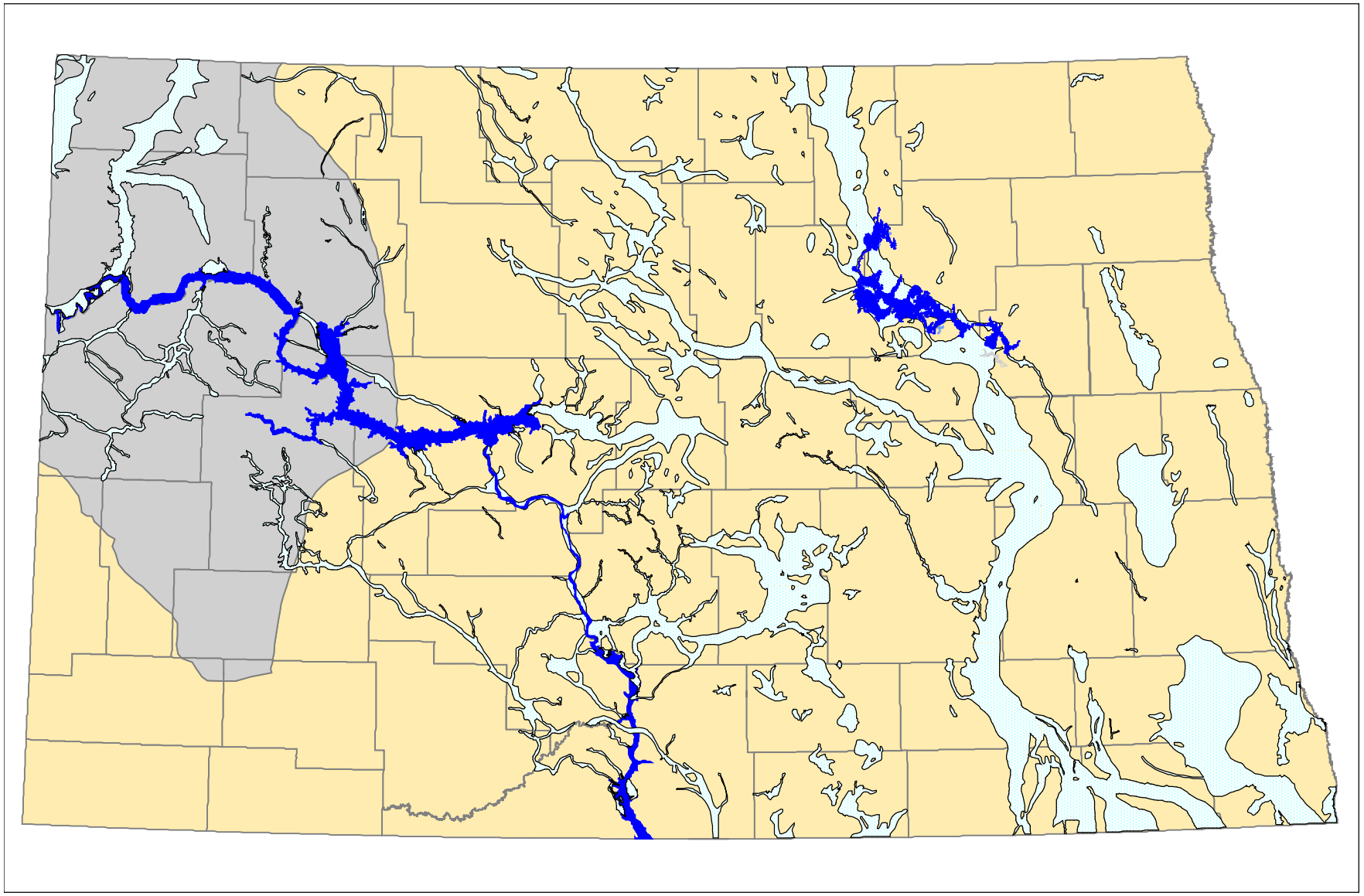
Form 1TP

- Operator and Landowner Information
- Treating Plant Name, Location, Street Address
- Primary Waste Streams
- Process Types
  - Shaker, Centrifuge, Filter Press, Filtering, Chemical or Gravity Separation, Thermal
- Tank Information
  - Total Number
  - Total Enclosed Tank Volume
  - Total Open-Topped Tank or Container Volume
  - Total Volume of Solids to be Stockpiled on Site on an Approved Surface (not in tanks)

Form 1TP

- Plat (outside perimeter, not within 500 feet of occupied dwelling)
- Occupied Dwelling Notification if Within 1320 feet
- Schematic Drawings (tanks, dikes and containment volume, equipment, liners, leak detection, flowlines, access)
- Cut and Fill Diagrams
- Surface Geology (is surface soil suitable for containment)
- Narrative Description of Process
- Destination of Recovered Waste and Products
- Other Permits Required from other State Agencies
- Map of Surficial Aquifers and Wellhead Protection Areas

Glacial Drift Aquifers



Glacial Aquifers and Wellhead Protection Area

Bonding

- Surety or Cash Bond
- Minimum $50,000
- Bonds In Place Range From $50,000 to $885,000
- Based Upon Tank Volumes and Approved Volumes for Solids Stockpile
- Any Tank No Matter Its Purpose

Form 5P

MONTHLY TREATING PLANT REPORT - FORM 5P

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5753 (03-2000)

Plant File Number

☐ **Amended**

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Reset **View** **Print**

For Month/Year	
Operator	Telephone Number

Address	City	State	Zip Code

Plant Location	Qtr-Qtr	Section	Township	Range	County
			N	W	

Total Liquid Stored First of Month (Bbls)	Total Residue Stored First of Month (Bbls)	BS&W Received (Bbls)	Oil Sold (Bbls)	Water Disposed (Bbls)	Residue Disposed (Bbls or Tons)	Total Residue Stored End of Month (Bbls)	Total Liquid Stored End of Month (Bbls)

BS&W SOURCE

Well Name and Number or Source Point	File Number or NDIC CTB No.	Location (Qtr-Qtr, S-T-R)	BS&W Taken (Bbls)	Comments

DISPOSITION OF RESIDUE

Destination Name	Location (Qtr-Qtr, S-T-R)	Disposed (Bbls or Tons)	Comments

DISPOSITION OF WATER

Operator	Well Name and Number	File Number	Location (Qtr-Qtr, S-T-R)	Disposed (Bbls)

COMMENTS

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Date

Signature	Printed Name	Title

Above Signature Witnessed By

Witness Signature	Witness Printed Name	Witness Title

Form 5P

- Operator Information
- Treating Plant Facility Number, Location
- Primary Waste Streams
- Total Liquid Stored First of Month in Barrels
- Total Solids Stored First of Month in Barrels
- Liquid and Solids Received During Month in Barrels
- Oil Sold That Month in Barrels
- Water Disposed That Month in Barrels
- Solids Disposed That Month in Barrels or Tons
- Total Solids Stored End of Month in Barrels
- Total Liquid Stored End of Month in Barrels

Lessons Learned

- Having a Hearing Does Not Grant Approval to Begin Construction
  - Must Have Bond in Place
- What is Applied for at Time of Hearing not Necessarily What is Constructed
- Time Consuming to Sort Out Details
  - Leads to Frustration by Both Operators and Staff
- Narrative Process Flow Description
  - Sometimes Too Detailed
  - Simply Describe How Waste Arrives and How it Flows Through the Process Equipment and Tanks
  - Do Not Have to Disclose Proprietary Information

Lessons Learned (Continued)

- Schematics Can Be Too Simple or Too Detailed
  - Do Not Need Diagrams for NDIC to Build Plant
  - Need Something Legible
- Diking Differences Between Treating Plant Sites and Oil Well or Saltwater Disposal Well Sites
  - Total Volume of Tanks Versus Total Capacity of the Largest Tank Plus One Dayôs Fluid Production
- Diking and Liners Does Not Mean Operators Can Spill Fluids and Solids and Not Clean Up
  - For Temporary Emergency Containment
- Changes to Treating Plant Needs Approval
  - Can Affect Bond Amount

Lessons Learned (Continued)

- When Trucks with Waste are Hauling to Treating Plant, Operators Do Not Want to Turn Away
  - Solution? Bring In More Tanks or Use Tanks Designed for Clean or Processed Fluids
  - Operators Have More Than Doubled Capacity Without Approval
  - Definitely Will Affect Bond Amount
  - Puts Operator and Commission in Bad Situation
  - Solution? Remove Tanks or Apply for Treating Plant Modification and Increased Bond Amount
  - Face a Complaint and Civil or Criminal Penalties
    - Violation of Rule, Regulation, or Order of Commission Subject to Civil Penalty up to $12,500 Per Day
    - Willful Violation = Class C Felony

By-Products, Recycled vs Beneficial Use

- Use of Treated Waste By-Products for Beneficial Use Allowed with Health Department Approval
  - Only One Has Been Approved
  - Thermally Treated Drill Cuttings Allowed to be Utilized as Drying Agent for Other Drill Cuttings
- Recycled Material
  - Legislative Fix
  - Follow Approved Methodology to Convert Waste to Recycled Material
  - Removes Some of the Regulatory Hurdles

Saltwater Production, Disposal, EOR Injection

- 490,223,467 barrels of saltwater produced in 2015
- 502 SWD Wells
  - 441,159,118 barrels disposed in 2015
  - 21 pending permits
- 631 EOR Wells
  - 121,394,883 barrels injected in 2015
  - 15 pending permits

Year	DISPOSED BARRELS	EOR BARRELS	TOTAL BARRELS	DISPOSAL WELLS	EOR WELLS	TOTAL WELLS
1989	61,355,476	35,970,279	97,325,755	252	164	416
1990	65,177,960	37,492,007	102,669,967	254	162	416
1991	73,428,101	31,377,616	104,805,717	252	161	413
1992	72,967,046	30,551,246	103,518,292	251	153	404
1993	72,520,325	26,767,445	99,287,770	255	165	420
1994	68,359,434	23,585,923	91,945,357	255	162	417
1995	69,069,460	25,908,701	94,978,161	260	168	428
1996	67,221,001	31,138,807	98,359,808	262	184	446
1997	65,703,390	41,167,339	106,870,729	263	201	464
1998	62,592,956	43,949,813	106,542,769	268	216	484
1999	60,254,690	47,015,147	107,269,837	273	213	486
2000	69,906,627	54,263,046	124,169,673	271	222	493
2001	70,826,005	51,141,456	121,967,461	275	242	517
2002	73,370,619	58,352,278	131,722,897	279	288	567
2003	76,800,945	69,649,331	146,450,276	280	330	610
2004	79,095,287	75,914,556	155,009,843	280	364	644
2005	80,865,464	82,779,951	163,645,415	287	387	674
2006	87,649,381	91,000,291	178,649,672	292	417	709
2007	94,545,760	92,674,084	187,219,844	293	448	741
2008	107,111,902	109,066,380	216,178,282	302	496	798
2009	114,082,667	117,251,157	231,333,824	311	558	869
2010	136,004,243	117,095,872	253,100,115	326	597	923
2011	174,578,395	117,439,043	292,017,438	365	594	959
2012	240,114,452	126,815,764	366,930,216	440	601	1041
2013	301,641,861	121,249,465	422,891,326	476	608	1084
2014	388,020,277	120,841,801	508,862,078	491	621	1112
2015	441,159,118	121,394,883	562,554,001	502	631	1133

PERMITS ISSUED

Å YEAR	SWD	EOR
Å 2009	12	30
Å 2010	38	22
Å 2011	79	16
Å 2012	91	22
Å 2013	45	13
Å 2014	23	40
Å 2015	34	15
Å 2016	15	4

NORTH DAKOTA ADMINISTRATIVE CODE

43-02-05-04. PERMIT REQUIREMENTS.

1. No underground injection may be conducted without obtaining a permit from the commission after notice and hearing. The application shall be on a form 14 provided by the commission and shall include at least the following information:

- Location
- Geological data on injection and confining zones
- Bottom hole fracture pressure of top confining zone
- Rates and pressures
- Depth of lowermost underground source of drinking water
- Construction data
- Area of Review plat and data on wells including corrective action
- Analyses of two nearest freshwater wells and representative injectate
- Source wells
- Landowner information
- Schematics
- Traffic flow
- Review of surficial aquifers

NORTH DAKOTA ADMINISTRATIVE CODE

43-02-05-05. SITING. All injection wells shall be sited in such a fashion that they inject into a formation which has confining zones that are free of known open faults or fractures within the area of review.

43-02-05-06. CONSTRUCTION REQUIREMENTS.

1. All injection wells shall be cased and cemented to prevent movement of fluids into or between underground sources of drinking water or into an unauthorized zone. The casing and cement used in construction of each new injection well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, all of the following factors shall be considered:

3. All injection wells must be equipped with tubing and packer set at a depth approved by the director.

43-02-05-07. MECHANICAL INEGRITY.

1. Prior to commencing operations, the operator of a new injection well must demonstrate the mechanical integrity of the well. All existing injection wells must demonstrate continual mechanical integrity and be tested at least once every five years.

NORTH DAKOTA ADMINISTRATIVE CODE

43-02-05-09. OPERATING REQUIREMENTS. Injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fracture or propagate existing fractures in the confining zone adjacent to the freshwater resource. In no case shall injection pressure initiate fractures in the confining zone or cause the movement of injection or formation fluids into an underground source of drinking water.

43-02-05-12. REPORTING AND MONITORING REQUIREMENTS.

1. The operator of an injection well shall meter or use an approved method to keep records and shall report monthly to the industrial commission, oil and gas division, the volume and nature, i.e., produced water, makeup water, etc., of the fluid injected, the injection pressure, and such other information as the commission may require.

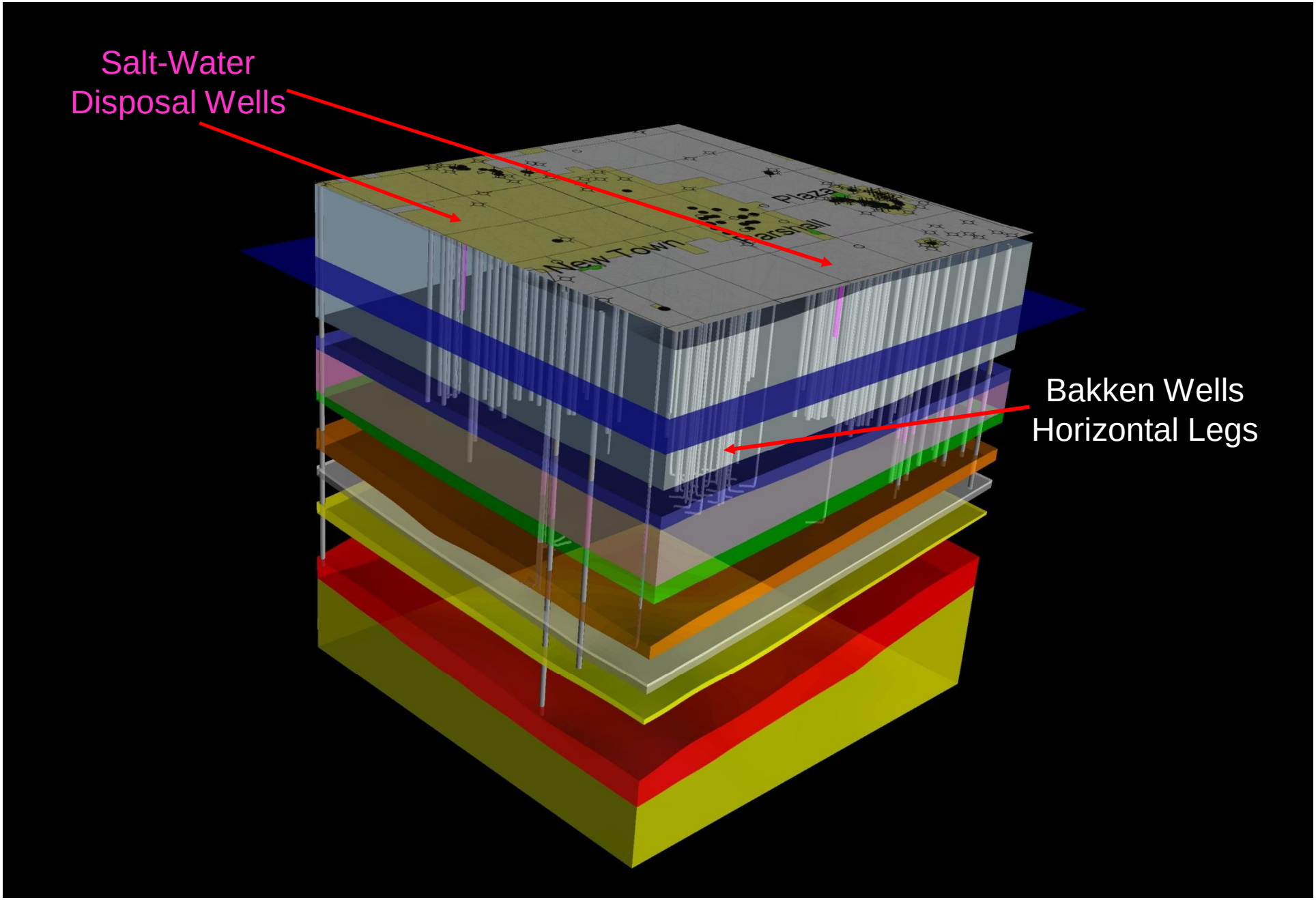
3. The operator shall place accurate gauges on the tubing and the tubing-casing annulus. Accurate gauges shall also be placed on any other annuluses deemed necessary by the director.

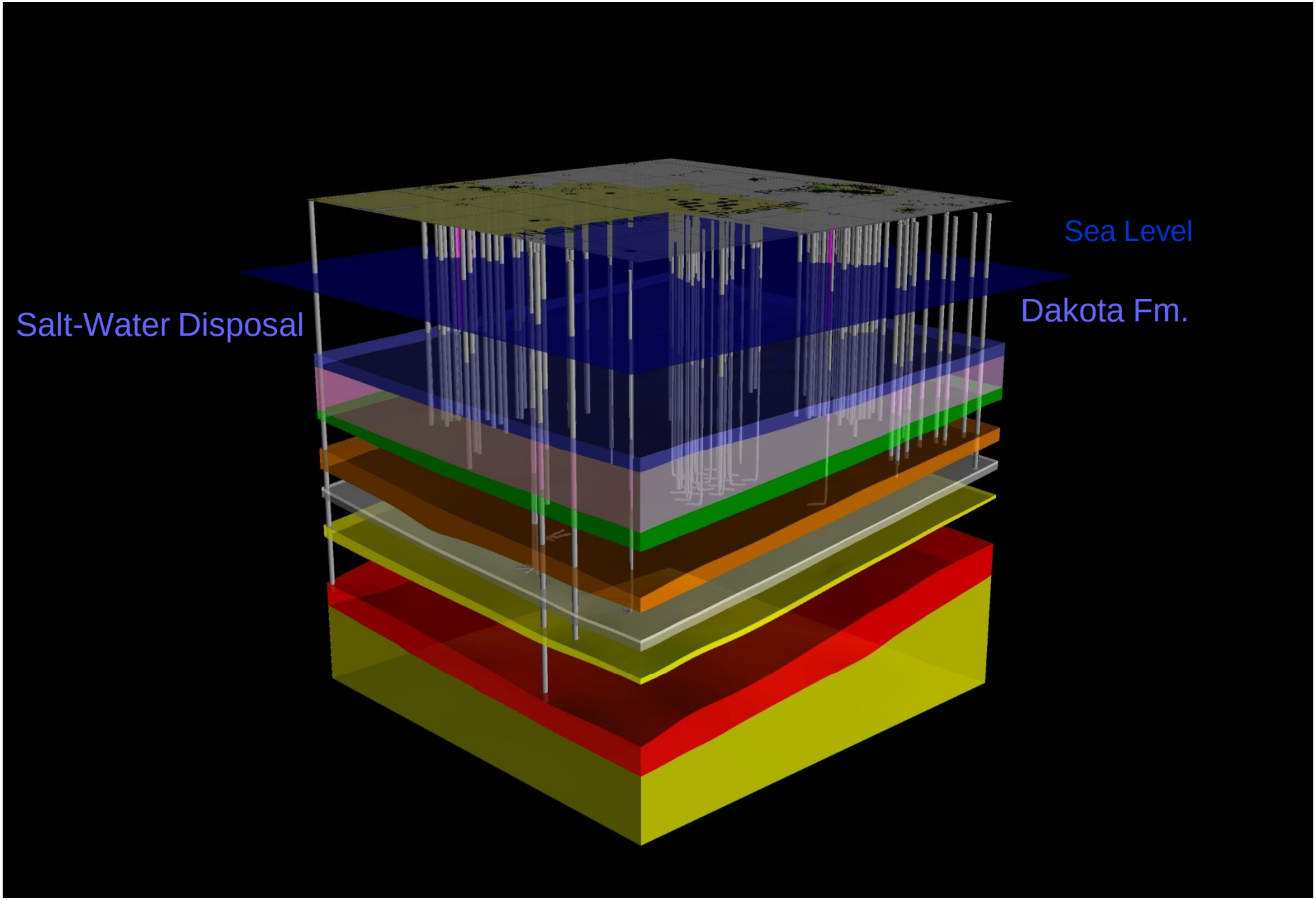
4. The operator of an injection well shall keep the well and injection system under continuing surveillance and conduct such monitoring and sampling as the commission may require.

- EPA's determination found that the following wastes are exempt from RCRA hazardous waste management requirements. The list below identifies many but not all exempt wastes. In general, E&P exempt wastes are generated in "primary field operations", and not as a result of maintenance or transportation activities. (53 FR 25453-25454)
- "Produced water
- "Drilling fluids
- "Drill cuttings
- "Rigwash
- "Well completion, treatment, and stimulation fluids
- "BS&W and other tank bottoms from storage facilities
- "Accumulated materials such as hydrocarbons, solids, sand, and emulsion from production separators, fluid treating vessels, and production impoundments
- "Pit sludges and contaminated bottoms from storage or disposal of exempt wastes
- "Workover wastes
- "Gas plant dehydration wastes, including glycol-based compounds, glycol filters, filter media, backwash, and molecular sieves
- "Gas plant sweetening wastes for sulfur removal, including amine, amine filters, amine filter media, backwash, precipitated amine sludge, iron sponge, and hydrogen sulfide scrubber liquid and sludge
- "Cooing tower blowdown
- "Spent filters, filter media, and backwash
- "Packing fluids
- "Produced sand
- "Pipe scale, hydrocarbon solids, hydrates, and other deposits removed from piping and equipment prior to transportation
- "Hydrocarbon-bearing soil
- "Pigging wastes from gathering lines
- "Wastes from subsurface gas storage and retrieval, except for the listed nonexempt wastes
- "Constituents removed from produced water before it is injected or otherwise disposed of
- "Liquid hydrocarbons removed from the production stream but not from oil refining
- "Gases removed from the production stream, such as hydrogen sulfide and carbon dioxide
- "Waste crude oil from primary field operations and production

NON-EXEMPT WASTES

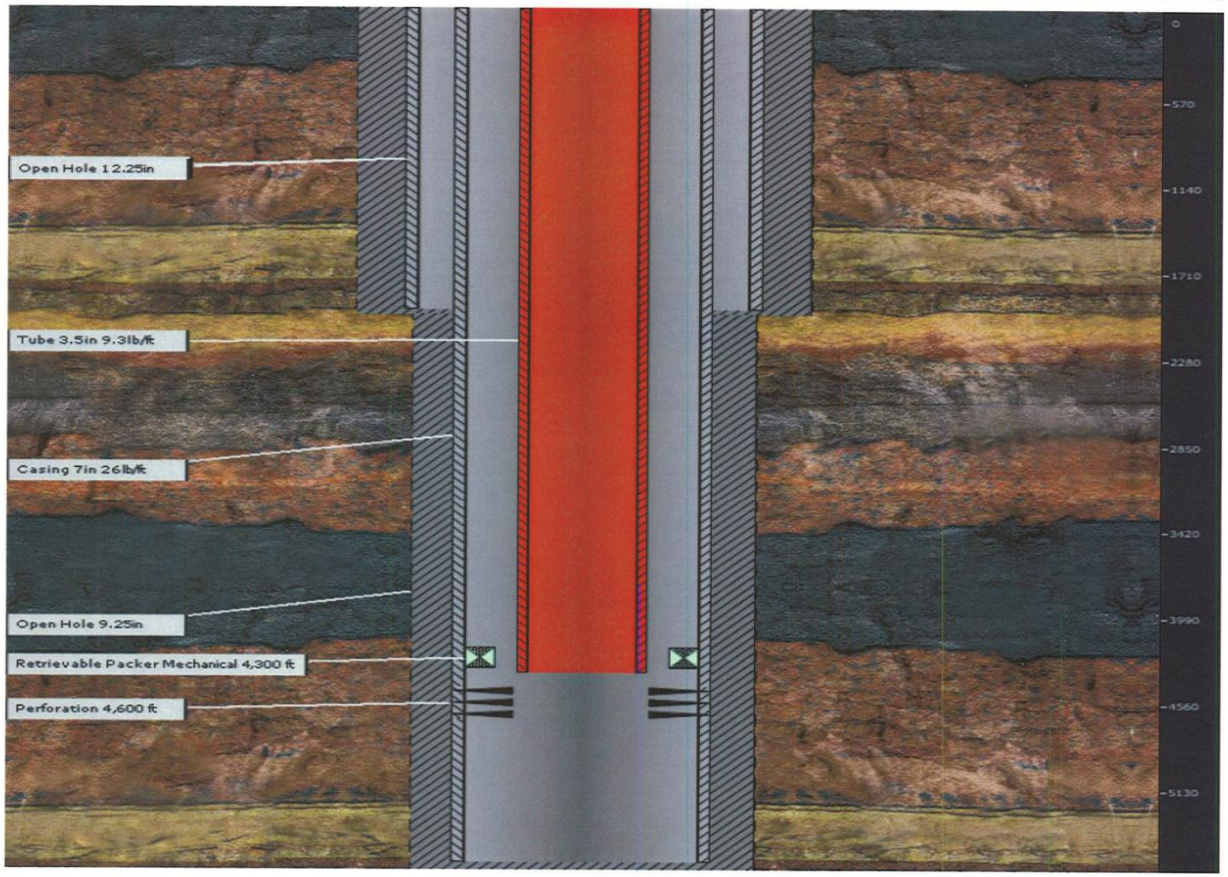
- "Unused fracturing fluids or acids
- "Gas plant cooling tower cleaning wastes
- "Painting wastes
- "Oil and gas service company wastes, such as empty drums, drum rinsate, vacuum truck rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids
- "Vacuum truck and drum rinsate from trucks and drums transporting or containing nonexempt waste
- "Refinery wastes
- "Liquid and solid wastes generated by crude oil and tank bottom reclaimers
- "Used equipment lubrication oils
- "Waste compressor oil, filters, and blowdown
- "Used hydraulic fluids
- "Waste solvents
- "Waste in transportation pipeline-related pits
- "Caustic or acid cleaners
- "Boiler cleaning wastes
- "Boiler refractory bricks
- "Incinerator ash
- "Laboratory wastes
- "Sanitary wastes
- "Pesticide wastes
- "Radioactive tracer wastes
- "Drums, insulation, and miscellaneous solids"


Salt-Water
Disposal Wells
Plaza
Parshall
New Town
Bakken Wells
Horizontal Legs


Sea Level
Dakota Fm.
Salt-Water Disposal

WELL CONFIGURATION

HALLIBURTON



Measured Depth - 5700 ft

Legend:

- Perforation
- Tubing
- Casing
- Open Hole
- Retrievable Packer Mechanical


SECURITY NOTICE
THIS PROPERTY IS PROTECTED BY ELECTRONIC SURVEILLANCE
ATTENTION DRIVERS
When High Tank Alarm Goes Off You Have 2 Minutes To Stop Pumping. Motor Valve Will Close Discharge Line.


7816


800
1000
1200
600
1400
400
1600
200
psi
1800
0
2000
XMAS TREE
GAUGE


200
400
600
800
1000
1200
psi
1400
1600
1800
2000