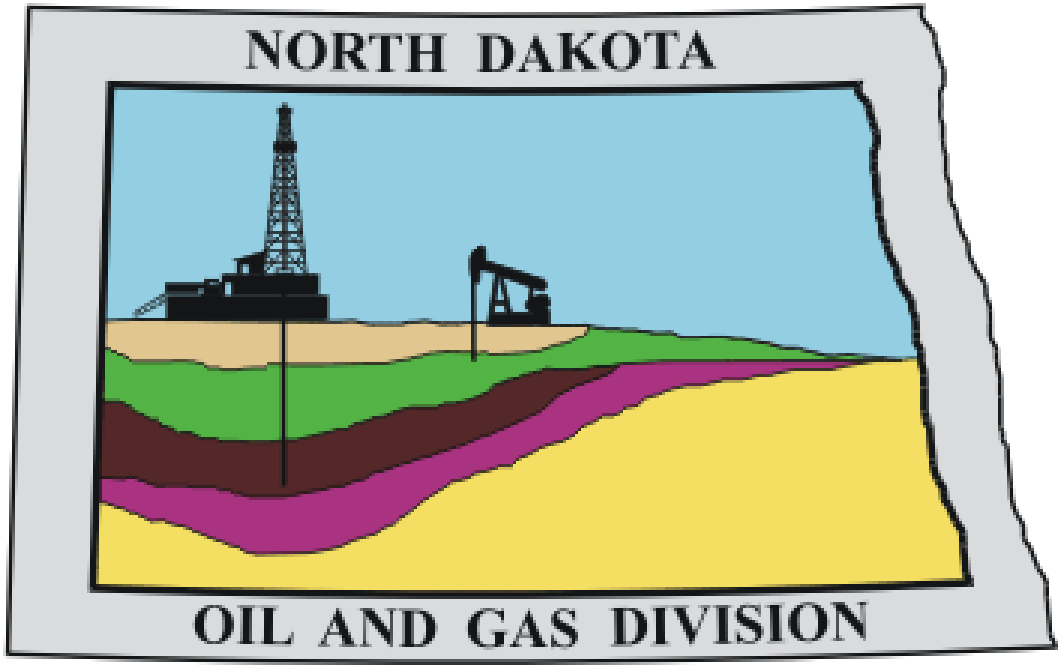
North Dakota Oil and Gas Division



http://www.oilgas.nd.gov

Kevin C. Connors
Carbon Capture and Storage Supervisor
Underground Injection Control
kcconnors@nd.gov

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

History of the IOGCC Task Force

- IOGCC Carbon Geologic Storage Task Force was established in 2002 to study the potential for Geologic Storage of CO_2 and the role of States.

- The CGS Task Force has produced reports in each of the three phases of the U.S. Department of Energy's Regional Carbon Sequestration Partnership program.

Efforts of the IOGCC Task Force

- Phase I – 2005 report titled "Carbon Capture and Storage: A Regulatory Framework for States."
- Phase II - 2007 model statute and model rules and regulations for geologic storage of CO_2.
  - 2010 Biennial Review an update on State efforts. (USEPA UIC Class VI Rules released late 2010).
- Phase III – 2014 Report – guidance for U.S. States and Canadian provinces on Carbon Geologic Storage liability issues (Funded by DOE/NETL thru PCOR)

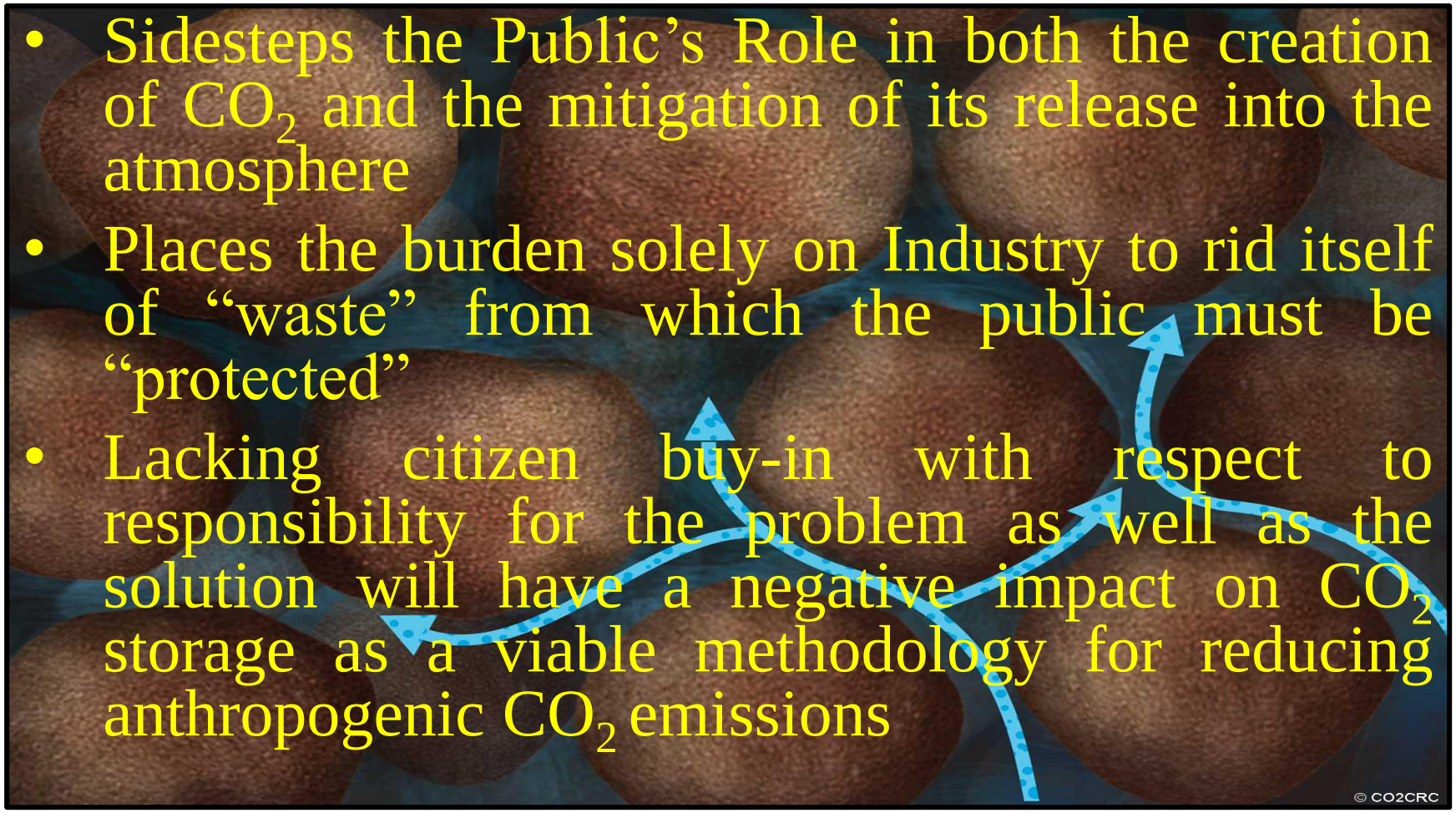
Two Basic Principles

1. It is the public interest to promote geologic storage of CO_2 in order to reduce anthropogenic emissions.

2. The pore space should be regulated and managed as a resource under the resource management philosophy as opposed to a waste disposal regulatory framework.

Waste Disposal Framework

- Sidesteps the Public's Role in both the creation of CO_2 and the mitigation of its release into the atmosphere
- Places the burden solely on Industry to rid itself of "waste" from which the public must be "protected"
- Lacking citizen buy-in with respect to responsibility for the problem as well as the solution will have a negative impact on CO_2 storage as a viable methodology for reducing anthropogenic CO_2 emissions



Resource Management Framework

- A resource management framework allows for the regulatory complexities that accompany CO_2 Storage to be integrated into a unified regulatory framework and proposes a "public and private sector partnership"
  1. Environmental protection
  2. Ownership and Management of pore space
  3. Maximize Storage Capacity
  4. Long Term Liability

North Dakota CO_2 Storage Workgroup

- Formed in 2008
- Public and Private partnership consisting representatives from:
  - Oil and Gas Division of the North Dakota Industrial Commission
  - Attorney General's Office
  - Department of Health
  - Lignite Energy Council
  - North Dakota Petroleum Council
  - Energy and Environmental Research Center (EERC)
- Tasked with the development of regulatory framework for the long term storage of CO_2
- Ownership of Pore Space in Geologic Strata

Further Clarification

North Dakota Lignite and Energy Generation Industry wanted regulatory certainty regarding CCS.

- Two major concerns:
  1. Pore Space Ownership
  2. Long-term liability of Stored CO_2

2009 Legislation

- 2009 Legislation
  - Senate Bill No. 2095 Effective July 2009
    - Covered Geologic Storage of CO_2
    - Granted Regulatory Authority to the Industrial Commission.
    - Carbon Dioxide Trust Fund
    - Carbon Dioxide Storage Facility Administrative Fund
  - Senate Bill No. 2139 Effective April 2009
    - Title of Pore Space to the owner of the overlying Surface Estate
    - Severing Pore Space Prohibited, leasing pore space is not a prohibited severance

Pore Space

Long-term Liability

Administrative Rule Making

- 2010 New Administrative Chapter 43-05-01 "Geologic Storage of Carbon Dioxide"
  - Effective April 2010

❖ ND regulatory framework in place

- EPA Class VI Rule December 10, 2010 – 1422 UIC Program
- 2011 Legislation- House Bill No. 1014 Appropriations Committee
  - Carbon Dioxide Storage Facility Administrative Fund
    - NDIC was appropriated $532,000 from the General Fund
    - One full-time position for up to three years until fee income is sufficient to provide funding for the administration of the provisions of NDCC Chapter 38-22
    - Goal: Obtain Class VI Primacy
- September 7, 2011 EPA acting regulatory authority
- 2013 Amendments to NDAC Chapter 43-05-01 to meet federal stringency (from 18 pages to 69 pages)

Unfavorable Regulatory Environment

- EPA federal authority
  - SDWA – UIC Program
  - Class VI Rule
- North Dakota laws and Regulations
  - Statute – CO_2 Underground Storage
  - Subsurface Pore Space Policy
  - Administrative Rules
- 2 Regulatory jurisdictions
- Project Development Deterrent

❖ Solution – North Dakota Class VI Primacy

❖ Primacy Application Submitted June 21, 2013

Key Issue Class VI Primacy

- 1422 vs. 1425
  - 1425 program (i.e. Class II UIC program)
    - As effective as the federal standard
  - 1422 program typically administered by State Health Departments or DEQ
    - More than likely the Lead Agency for the State
    - As stringent as the federal standard
- Oil and Gas Regulatory agency taking a leap from 1425 to 1422

Key Issue Class VI Primacy

- Three Ways to meet federal stringency
  1. By Reference
  2. Verbatim

  Argue Interpretation later

  3. Write entire rule to be as stringent as the federal standard
     - Resource Management philosophy in place
     - North Dakota Administrative Agencies Practices Act
       - An agency may not adopt rules from federal guidelines which are not relevant to state regulatory programs when developing or modifying programs.
     - Crosswalk

Argue Interpretation Now

Crosswalk

Federal Requirement	Federal Citation	State Citation and Regulatory Text (document title, page number, section/paragraph)	Different From Federal Requirement?
GENERAL REQUIREMENTS			
PART 124--PROCEDURES FOR DECISION MAKING			
SUBPART A--GENERAL PROGRAM REQUIREMENTS			
40 CFR 124.3 Application for a permit			
Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA). (1) Any person who requires a permit under the RCRA, UIC, NPDES, or PSD programs shall complete, sign, and submit to the Director an application for each permit required under §§ 270.1 (RCRA), 144.1 (UIC), 40 CFR 52.21 (PSD), and 122.1 (NPDES). Applications are not required for RCRA permits by rule (§ 270.60), underground injections authorized by rules (§§ 144.21 through 144.26), NPDES general permits (§ 122.28) and 404 general permits (§ 233.37).	40 CFR 124.3(a)(1)	43-05-01-07.1 Permitting Subsection 1 a	a. Any person who is required to have a permit shall complete, sign, and submit a permit application to the commission.
The Director shall not begin the processing of a permit until the applicant has fully complied with the application requirements for that permit. See §§ 270.10, 270.13 (RCRA), 144.31 (UIC), 40 CFR 52.21 (PSD), and 122.21 (NPDES).	40 CFR 124.3(a)(2)	43-05-01-07.1 Permitting Subsection 1 c	c. The commission shall not begin processing a permit until the applicant has fully complied with the application requirements for that permit.
Permit applications (except for PSD permits) must comply with the signature and certification requirements of §§ 122.22 (NPDES), 144.32 (UIC), 233.6 (404), and 270.11 (RCRA).	40 CFR 124.3(a)(3)	43-05-01-07.1 Permitting Subsection 2	2. All permit applications, reports, or information submitted to the commission must comply with the following signature and certification requirements.
§ 124.5 Modification, revocation and reissuance, or termination of permits.			
(Applicable to State programs, see §§ 123.25 (NPDES), 145.11 (UIC), 233.26 (404), and 271.14 (RCRA).) Permits (other than PSD permits) may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in § 122.62 or § 122.64 (NPDES), 144.39 or 144.40 (UIC), 233.14 or 233.15 (404), and 270.41 or 270.43 (RCRA). All requests shall be in writing and shall contain facts or reasons supporting the request.	40 CFR 124.5(a)	43-05-01-12 MODIFICATION, ~~OR~~ REVOCATION AND REISSUANCE OR TERMINATION OF PERMITS. Subsection 1	1. Permits are subject to review by the commission. Any affected person (i.e. the storage operator, local governments having jurisdiction over land within the area of review, and any person who has suffered or will suffer actual injury or economic damage other than as a member of the general public) may request that the commission review permits issued under this chapter for one of the reasons set forth below. All requests must be in writing and must contain facts or reasons supporting the request. If the commission determines that the request may have merit or at the commission's initiative for one or more of the reasons set forth below, the commission may review the permit. After review, the commission may modify or revoke a permit. Permits may be modified or revoked and reissued when the commission determines one of the following events has occurred:

Crosswalk Stats

- Class VI Primacy Crosswalk
  - 150 Pages Complete
  - 465 Federal Citations (boxes)
  - 12 Definitions
- §1422 Program Crosswalk
  - 67 Complete Pages
  - 346 Federal Citations
  - 59 Additional Definitions
- Totals
  - 217 Pages Complete (60 pages blank)
  - 811 Federal Citations
  - 71 Definitions

Class VI Primacy Timeline

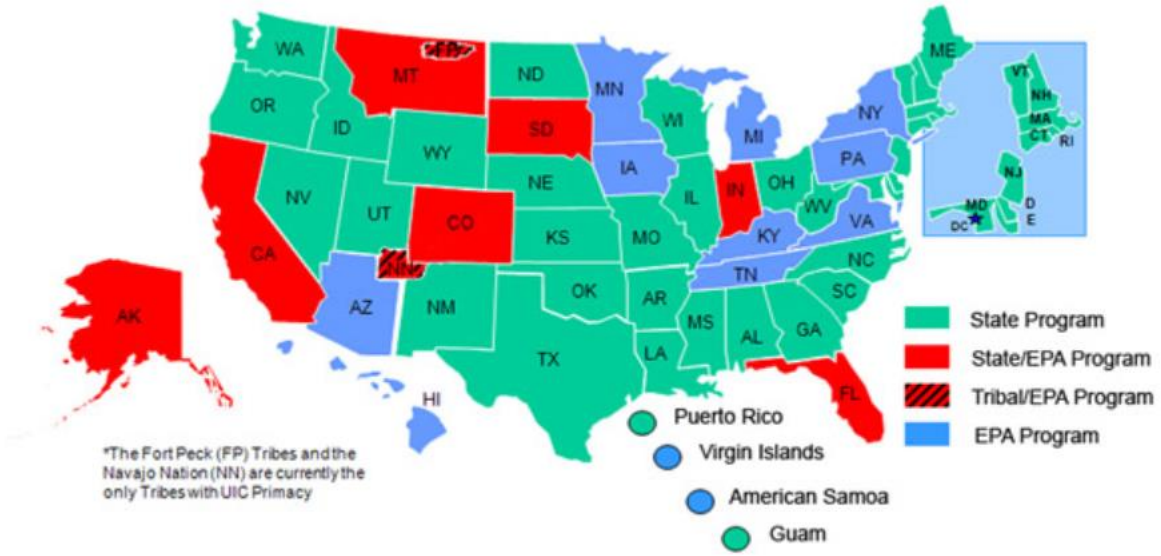
- **June 21, 2013** Primacy Application Submitted
- EPA Region 8 Published Notice for Comment on the North Dakota's Class VI Primacy Application –30 Day Comment Period (Aug 9 – Sept 9)
    - No Comments Received in Opposition
- **October 29, 2013** Finalized MOA with EPA Region 8
- January 8, 2014 Federal Register Approval to amend 40 CFR Subpart JJ 147.1751 to add Class VI program
- July 14, 2014 recommended approval of North Dakota's Class VI application:
    1. Office of General Council
    2. Office of Water
    3. Office of Policy
    4. Region 8
    - ❖ Application sent to Administrator's office for final approval
- Final Approval by EPA Administrator
- EPA Headquarters to Publish in the Federal Register – A Proposed Approval of the North Dakota Class VI Primacy Application – 30 Day Public Comment Period
- If No Comments are received, then after 60 days, the North Dakota Class VI primacy is approved and codified in 40 CFR Part 147.1751

EPA website - May 13, 2015

http://water.epa.gov/type/groundwater/uic/primacy.cfm

Who currently has primacy?

EPA has approved primacy programs for all well classes I, II, III, IV and V in 34 states and 3 territories; it shares responsibility with 7 states (i.e., EPA has authority over some classes and the state has authority for others); and EPA directly implements the Class VI Program nationally, except for the State of North Dakota.



Primacy approval?

Currently there is no limit to the amount of time EPA has to approve a State UIC primacy application.

- North Dakota's Primacy application is complete with no indication of application deficiencies

In the mean time…

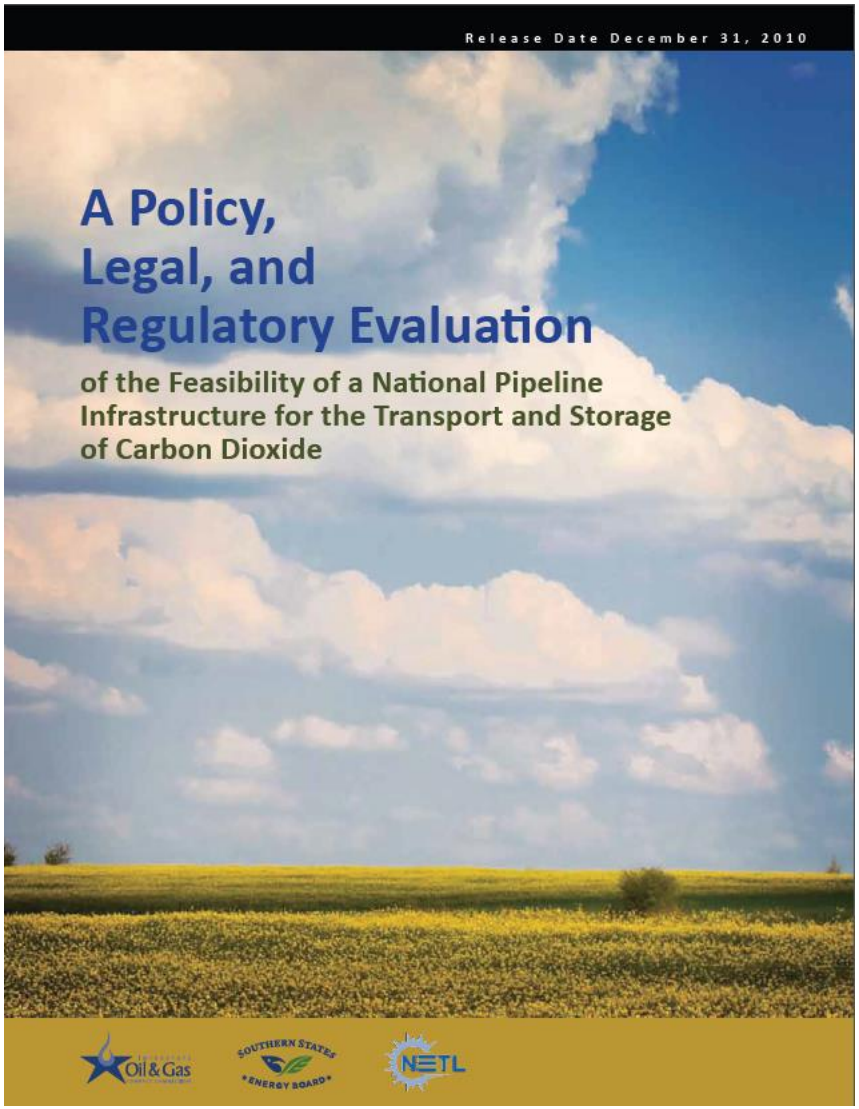
Induced Seismicity

- Is induced seismicity a concern in CCS?

Transportation of CO_2

- If CCS deployment becomes more rapid is infrastructure sufficient to connect the captured CO_2 to the storage site?

IOGCC-SSEB
Pipeline Transportation Task Force



December 31, 2010 Report

The PTTF Task Force evaluated the regulatory status and current level of development of CO_2 pipelines, as well as policies that would encourage rational build-out of a future CO_2 pipeline system in the U.S.

PTTF Recommendations:

- If CO_2 capture and storage is mandated by through federal policy then sufficient public resources must be allocated to build the infrastructure necessary and mitigate the economic disconnects and impacts that are likely to occur.

Thank you