

Recap: SB 49 Carbon Storage

Senate Resources Committee



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OUTLINE



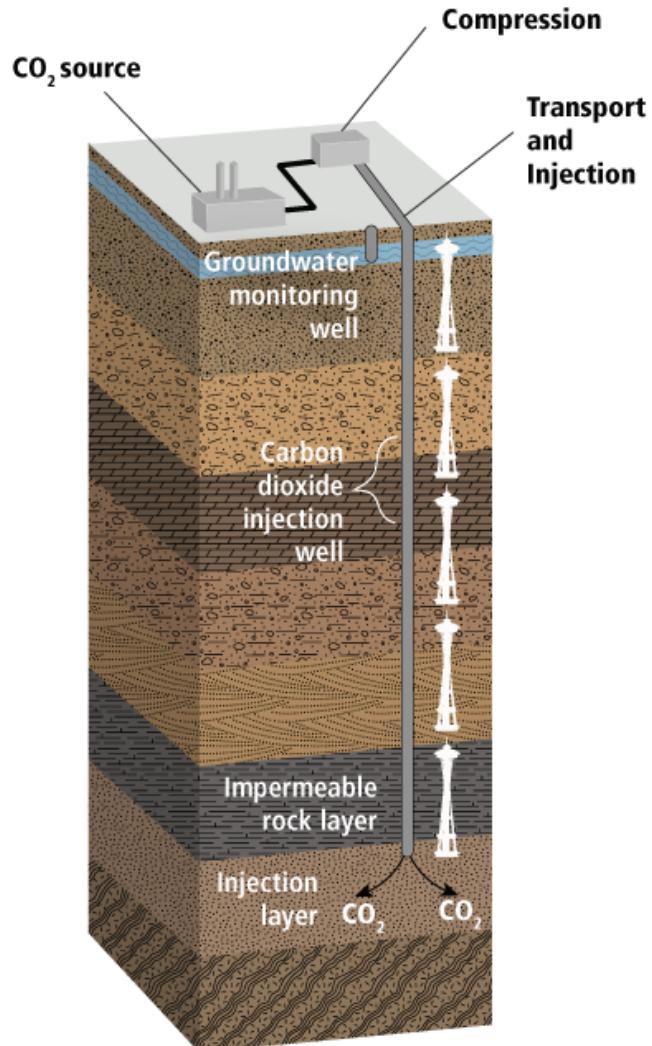
1. Introduction
2. Alaska Oil & Gas Conservation Commission (AOGCC)
Underground Injection Control Class VI well primacy updates
3. Carbon Capture Utilization & Storage (CCUS) licensing updates
from other state jurisdictions
4. CCUS project phases and the legislation
5. Sectional summary

RECAP: PURPOSE OF SB 49



Make Alaska's subsurface resources available for maximum use

1. Enables the Department of Natural Resources to lease state lands for geologic storage of carbon dioxide and issue right-of-way leases for carbon dioxide transportation pipelines
2. Empowers the Alaska Oil and Gas Conservation Commission to regulate the geologic storage of carbon dioxide on all lands in the state, including protection of correlative rights



DEVELOPMENTS IN CCUS INDUSTRY



Nationally

- North Dakota:
 - Two facilities actively injecting CO₂
Red Trail Energy online June 2022 & Blue Flint Ethanol online October 2023
 - Six Class VI well applications approved
- Wyoming: Issued first Class VI well approval December 2023
- Louisiana: Received Class VI well primacy from EPA December 2023

Alaska

- Department of Energy grants:
 - Department of Natural Resources \$1 million to develop CCUS database
 - University of Alaska Fairbanks CarbonSAFE Phase II
 - Alaska CCUS Consortium of Santos, Repsol, and ASRC Energy Services for Direct Air Capture feasibility study

CLASS VI PRIMACY UPDATES



AOGCC UPDATE

Authority to Pursue Class VI primacy from EPA granted through passage of SB 48 *Carbon Offset Program on State Land* (Ch.2 SLA 2023):

"The commission may take all actions necessary to allow the state to acquire primary enforcement responsibility under 42 U.S.C. 300h-1 and 42 U.S.C. 300h-4 (Safe Drinking Water Act of 1974, as amended, 42 U.S.C. 300f - 300j-26), for the control of underground injection related to the recovery and production of oil and natural gas and the control of underground injection in Class I wells, as defined in 40 2 C.F.R. 144.6, as amended, and the control of underground injection in Class VI wells, as defined in 40 C.F.R. 144.6, as amended."

Appropriation for 2 positions as well as contractual and legal support

CLASS VI PRIMACY PROCESS



Multiyear process based on other states' experience:

AOGCC's aim is 2 years

During the process, AOGCC works with EPA to develop and finalize:

- Governor's and Attorney General's statement
- Memorandum of Agreement with EPA
- Regulatory Crosswalk (a comparison between federal and proposed state regulations)
- Program Description – including the process for application processing
 - How will we implement Class VI?
 - Includes general descriptions, organizational structure, modelling/simulations, consultancies that may support the State, environmental justice, and notice and public participation processes

EPA INTERACTIONS To DATE



AOGCC and EPA have had a series of interactions over the last year:

- EPA grant invitation and AOGCC's responsive letter of interest submitted
- Introduction meetings and discussions with technical staff
- Kick-off meeting with EPA Region 10 and Washington, D.C. HQ
- EPA's initial review of Alaska CCUS legislation
 - These discussions have highlighted technical changes that the Administration will be bringing forward amendments to address
- EPA Grant – **AOGCC formally applied in December 2023**

EPA's REVIEW/POTENTIAL AMENDMENTS



As part of the primacy process, EPA and AOGCC will engage in a “crosswalk” process that compare state statute and regulation with federal code. EPA’s intent is to confirm that proposed state processes are as stringent as federal requirements. EPA’s initial review of the CCUS legislation (August 2023) identified:

1. Exceptions or waivers “for good cause” may lead to stringency questions vs. federal code
2. Liability transfer process and post-closure trust fund period could be inconsistent vs. federal code – as the EPA requires liability to remain with the operator for the full, 50-year post-closure period
3. Penalty provisions – AOGCC has since determined proposed penalties should meet or exceed federal code



AOGCC STAFFING AND RESOURCES

AOGCC is well resourced to pursue the primacy effort:

- Legal Team – Department of Law support, and contracted services with Susan Pollard, former Department of Law regulatory attorney. This team is working on:
 - Crosswalk + regulation package
 - Memorandum of Agreement
- Commissioners and staff:
 - Leading regulation package development, outreach, and public participation efforts
 - **New Hire** – Carbon Reservoir Engineer
 - **New Hire** – Carbon Assistant

REQUESTS FOR SERVICES



- Request For Information for consultant services: **6 responses**
Potential services include: reservoir analysis, reservoir modelling and simulations, project management, environmental justice activities assessments
- Request For Proposals will be issued nearer to the end of the primacy process in anticipation of AOGCC receiving a Class VI storage facility application to process.
(estimated September 2025)

LICENSING UPDATES FROM OTHER STATE JURISDICTIONS

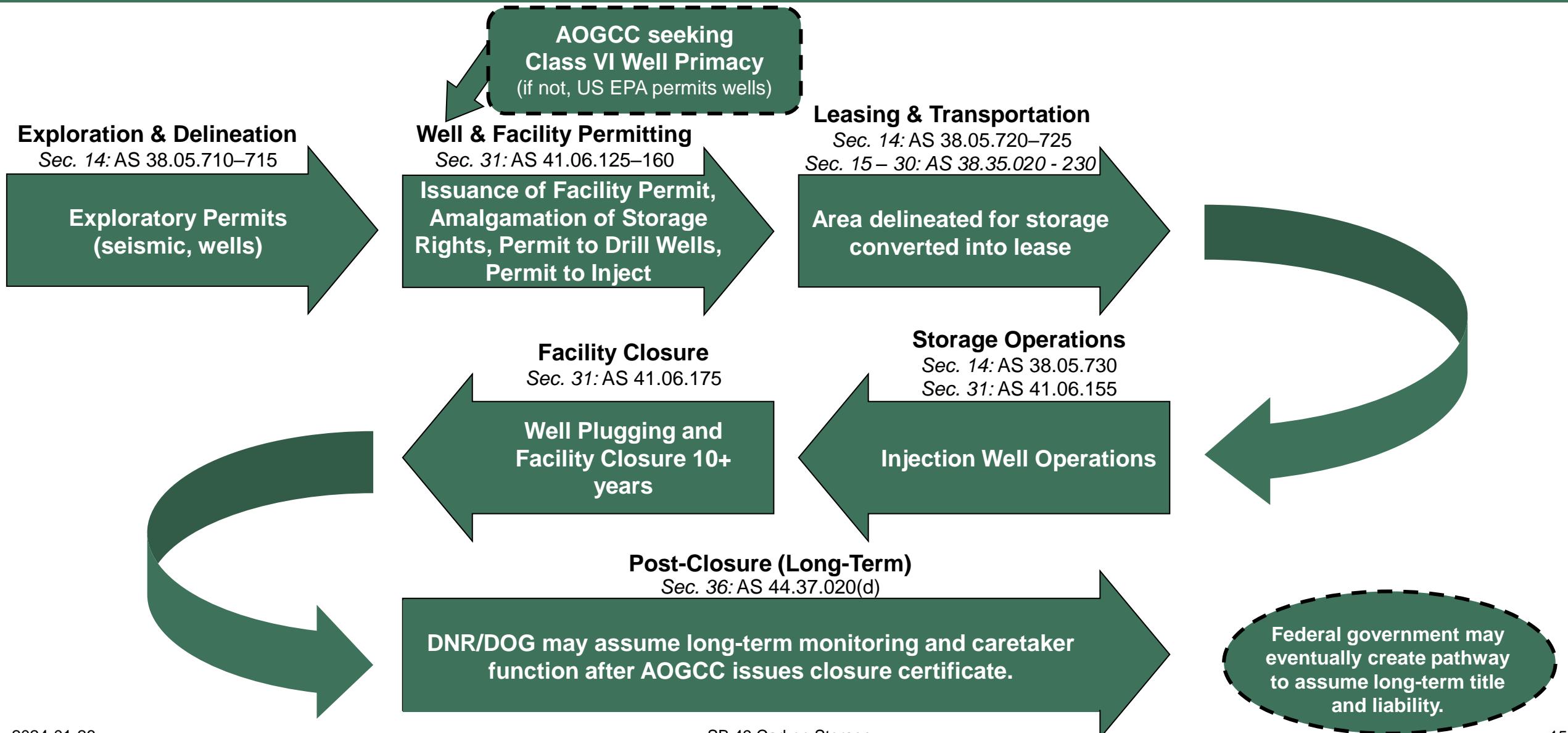
State Carbon Storage Leasing Frameworks



State Body	Statutes & Regulations	Leasing Mechanism	Number of Leases	Commercial Terms	Public Process
Wyoming Office of State Lands and Investments	<ul style="list-style-type: none"> No specific carbon storage authorities, held under general land leasing W.S. 36-2-107 & W.S. 36-5-114 through 117 Chapter 5 	<ul style="list-style-type: none"> Special Use Lease – may receive application at any time or issue Request for Proposals 	<ul style="list-style-type: none"> 2 issued. 2 under negotiation 	<ul style="list-style-type: none"> No minimums in statute Tiered bonus bid payments \$15 – \$75 per acre Injection charge \$1 per ton Consumer Price Index escalator 	<ul style="list-style-type: none"> Applicant must obtain consent of existing surface grazing lessees Director of State Lands brings lease before the Board of Land Commissioners for approval at public meeting
Texas General Land Office	<ul style="list-style-type: none"> Texas Health and Safety Code 382 Subchapter K § 382.501 – 382.510 	<ul style="list-style-type: none"> Carbon Storage Lease – Requests for Proposals (RFP) on tracts designated in Gulf of Mexico CO2 Site Characterization 	<ul style="list-style-type: none"> 1 issued. 6 under negotiation 	<ul style="list-style-type: none"> RFP minimums \$50 per acre bonus bid Rent: \$50 per acre Injection charge: \$4 per acre Portion of additional value 	<ul style="list-style-type: none"> General Land Office reviews solicitation responses, negotiates with applicants, and makes recommendation of final lease for approval to School Land Board All offshore tracts
Louisiana Office of Mineral Resources	<ul style="list-style-type: none"> LA Rev Stat § 30:209(e) 	<ul style="list-style-type: none"> Operating Agreement – may receive application at any time. Awarded primacy over Class VI wells 	<ul style="list-style-type: none"> 6 issued. 	<ul style="list-style-type: none"> No minimums in statute Bonus bids: \$0 – \$425 per acre Rent: \$0-\$60 per acre Injection charge: \$1.50 – \$7.50 45Q escalators 	<ul style="list-style-type: none"> Louisiana State Mineral and Energy Board holds a public hearing to review and approve lease negotiated by Office of Mineral Resources

CCUS PROJECT PHASES AND THE LEGISLATION

CCUS PHASES AND LEGISLATION



PROJECT AUTHORIZATIONS



Carbon Storage Exploration License

- Grants exclusive right to explore area for carbon storage site
- 5-year term
- Work commitment and annual rental requirements
- Conversion to lease based on obtaining Carbon Storage Permit and completion of work commitment
- Does not authorize specific activities – require further permits

DNR

Carbon Storage Facility Permit

- Approves use of subsurface storage “container”
- Amalgamates pore space based on geological and engineering data
- Provides for protection of other mineral and property interests
- Establishes monitoring and bonding requirements
- Guides operations over life of project

AOGCC

Carbon Storage Lease

- Exclusive right to store CO₂ in reservoir on state lands as defined under the Storage Facility Permit
- Includes terms for revenue to the state
- Valid over life of injection and site closure
- Required for Enhanced Oil Recovery reservoirs that transition to sequestration

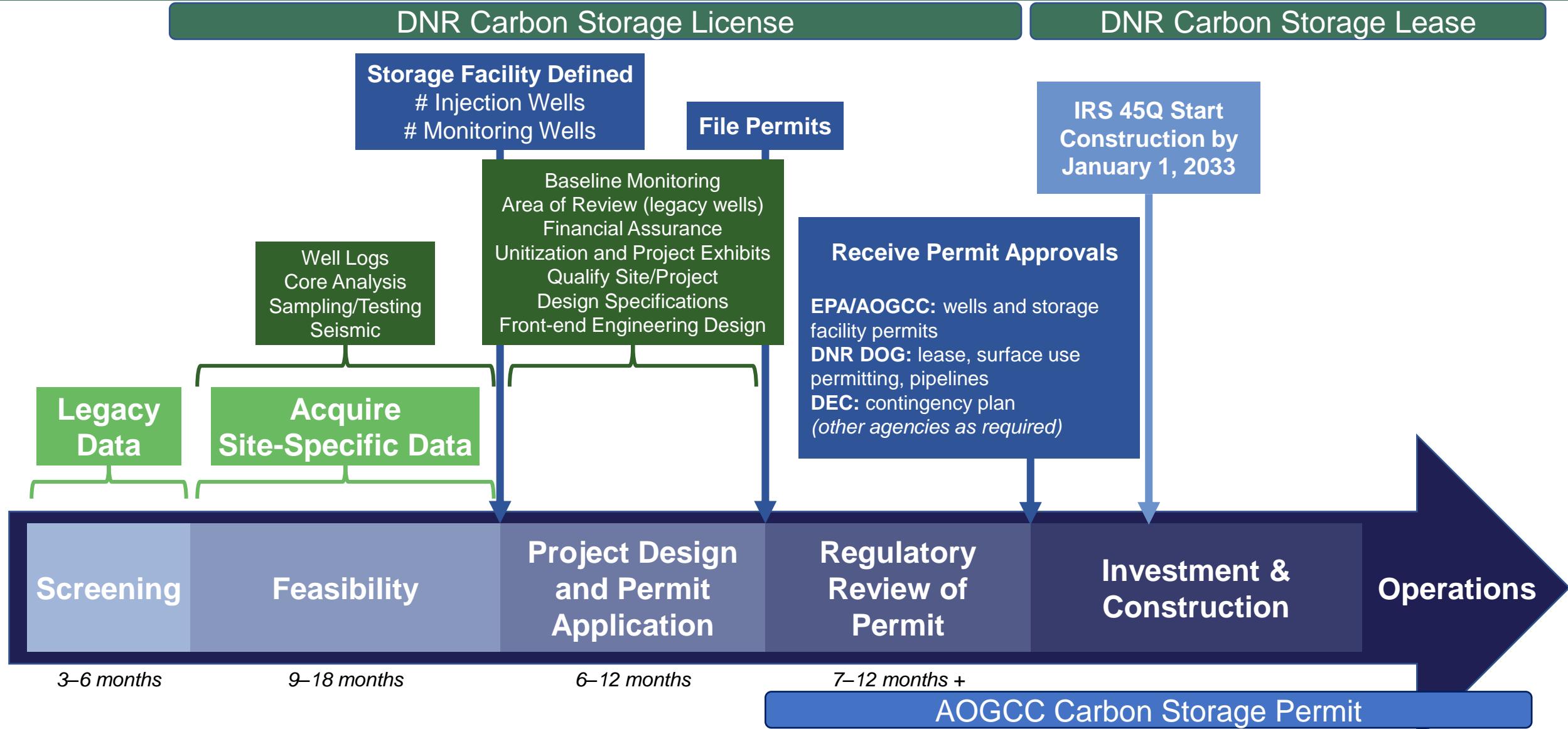
DNR

Closure Certificate

- Operator may apply at least 10 years post-injection
- Public notice & hearing
- Must demonstrate stabilization of CO₂ plume and remediation activities complete
- Title to CO₂ and long-term monitoring and maintenance transfer to state
- Funded by carbon storage trust fund over life of project

AOGCC

CCUS PROJECT THEORETICAL TIMELINE



SECTIONAL SUMMARY

SECTIONAL SUMMARY: 1–13



Section (Agency)	Summary
1	Short title of bill: Carbon Capture, Utilization, and Storage Act.
2 (AOGCC)	Grants jurisdiction for AOGCC to regulate carbon storage unit operations in the state like oil and gas. (<i>bill</i> Sec. 14)
3 (AOGCC)	Authorizes AOGCC to seek primary enforcement authority for permitting and regulating Class VI injection wells for CO ₂ .
4 (DNR/AOGCC)	Creates Carbon Storage Closure Trust Fund to provide funding for post-closure operations of State agencies. (<i>bill</i> Sec 31. AS 41.06.180)
5 (DNR)	Adds carbon storage (<i>bill</i> Sec. 14) to mineral estate disposal exemption for agricultural lands disposal in AS 38.05.069(e).
6 (DNR)	Adds carbon storage (<i>bill</i> Sec. 14) exemption to AS 38.05.070(a) for when state lands are leased for purposes other than extrication of natural resources.
7 (DNR)	Adds carbon storage to provision requiring lessees to pay damages to landowners, post bond for that purpose, and provision for lessee access to the mineral estate if a surface owner refuses to engage in a surface use agreement. This is the same statutory process that exists for other mineral estate development of split estate created by AS 38.05.125.
8–11 (DNR/DOG)	Adds carbon storage program (<i>bill</i> Sec. 14) to mineral leasing statutes under AS 38.05.135, primarily providing for revenue collection.
12 (DNR)	Adds carbon storage provision to exemptions for coal bed methane under AS 38.05.180(gg) and unconventional gas under AS 38.05.180(ff) because carbon storage leasing might be possible on unmineable coal seams.
13 (DNR)	Adds carbon storage leases to prohibition in the Kachemak Bay oil and gas closure area.
14 (DNR/DOG)	Adds new sections to AS 38.05 <i>Alaska Land Act</i> as Article 15A. <i>Carbon Storage Exploration Licenses; Leases.</i> (AS 38.05.700–795.) Detailed summary on next slide.

SECTION DETAIL: SECTION 14 (DNR/DOG)



Subsection	Summary
AS 38.05.700	Policy statement that it is in the public interest to promote geologic storage of carbon dioxide
AS 38.05.705	Provision for applicability carbon storage statutes and authority for DNR to adopt regulations to implement these statutes.
AS 38.05.710	Allows the commissioner to issue carbon storage exploration licenses on state land and establishes work commitment obligations, minimum economic terms, bonding requirements, default provisions, renewal provisions, and the escalation of minimum economic terms. -5-year exploration license term -conversion of the license to a lease upon fulfillment of work commitment, acquiring storage facility permit from AOGCC, ability to meet commercial terms
AS 38.05.715	Procedures for issuance of a carbon storage exploration license. These are modeled after existing procedures for oil and gas exploration licensing under AS -38.05.133 . <ul style="list-style-type: none">Identify land, minimum work commitment, economic terms, 90 days for competing proposalsWritten finding – including competitive process if competing proposals are submittedSubsection 715(h) provides a right-of-first-refusal opportunity for existing lessees under AS 38.05.135–181 (i.e., mineral lessees for coal, oil and gas, geothermal, or other exploitable minerals).
AS 38.05.720	Provision allowing conversion of an AS 38.05.715 carbon storage exploration license to a carbon storage lease.
AS 38.05.725	An oil and gas lessee converting from enhanced oil recovery to carbon storage must apply for a carbon storage lease.
AS 38.05.730	Requirements for plans of development and operations, and provision for unitization, as with oil and gas leasing.
AS 38.05.735	Payments from carbon storage licenses and leases are to be deposited in the general fund except for the amount allocated to the Permanent Fund under art. IX, sec. 15, of the Alaska Constitution.
AS 38.05.795	Definitions for specific terms used in the "Alaska Carbon Underground Storage Act."

SECTIONAL SUMMARY: 15–31



Section (Agency)	Summary
15 (DNR/DOG)	Amends AS 38.35.020(a) to include carbon dioxide for right of way (ROW) leasing purposes.
16 (DNR/DOG)	Amends AS 38.35.020(b) to allow the DNR Commissioner to exempt pipelines from ROW leasing when transporting carbon dioxide for enhanced oil recovery or pressure support.
17 (DNR/DOG)	Conforming amendment to AS 38.35.122 to bring some carbon dioxide pipelines under the same title as “product” pipelines.
18–20 (DNR/DOG)	Amends AS 38.35.230 – definition of “lease,” “pipeline” or “pipeline facility,” and “transportation” to include provisions for carbon dioxide.
21 (DNR/DOG)	Amends AS 38.35.230 – to add a definition for “carbon dioxide” cross referencing the definition used in AS 38.05.795.
22–30 (AOGCC)	Conforming amendments separates 41.06 into two articles – one for geothermal and one for carbon storage (AS 41.06.005–060).
31 (AOGCC)	Adds new sections to AS 41.06 as Article 2. <i>Carbon Dioxide Injection and Storage</i> beginning at AS 41.06.105. Detailed summary on slide after next.

SECTION DETAIL: SECTION 31 (AOGCC)



Subsection	Summary
AS 41.06.105	Contains a policy statement providing that it is in the public interest to inject carbon dioxide into oil and gas reservoirs in a manner protective of waters and reservoir integrity. It also recognizes that in the event cooperation of mineral interest holders in an area cannot be obtained, regulatory procedures that enable cooperative management are required.
AS 41.06.110	AOGCC has jurisdiction over carbon dioxide storage facilities to prevent waste, protect correlative rights, and ensure public health and safety. <i>Waste</i> is defined in AS 41.06.210.
AS 41.06.115	Concerns AOGCC's authority to carry out the purposes and intent of AS 41.06.105–210. (a) contains an expansive statement of AOGCC's jurisdiction over persons and property necessary to carry out the purposes and intent of AS 41.06.105–210 – the State's police power. (b) Allows AOGCC to suspend its statutes as to lands committed to federal units, provided the conservation of resources are provided for.. (c) contains a list of specific regulatory authorities held by AOGCC. (d) Wells drilled for carbon dioxide are subject to AOGCC's jurisdiction under 31.05 unless specifically covered by 41.06.105-210 (e) AS 41.06.105–210 does not limit the authority of DNR over (1) carbon storage exploration licensing or leasing; or (2) approval and management of carbon storage units or operations that include state land.
AS 41.06.120	Provides that waste is prohibited in a carbon storage facility or reservoir.

SECTION DETAIL: SECTION 31 (AOGCC)



Subsection	Summary
AS 41.06.125	Provides permit requirements for storage facilities.
AS 41.06.130	Creates a public hearing requirement for storage facility permits issued by AOGCC – all property owners within ½ mile.
AS 41.06.135	Specifies the 14 requirements for carbon storage facility permits, ex: safety of reservoir, monitoring plans, compensation of mineral and pore space owners.
AS 41.06.140	Allows AOGCC to include parameters, limitations, or restrictions in a permit and to protect and adjust rights and obligations of persons affected by geologic storage.
AS 41.06.145	Concerns amalgamation of property interests for storage facilities.
AS 41.06.150	Creates specifications for a carbon storage facility certificate to be recorded to put future property purchasers on notice.
AS 41.06.155	Creates statutory requirements for AOGCC to ensure environmental protection and reservoir integrity in storage facilities and reservoirs.
AS 41.06.160	Clarifies preservation of rights, including deconfliction of development of other minerals by drilling through or near a storage reservoir.
AS 41.06.165	Provides authority for AOGCC to collect fees and creation of a “carbon dioxide storage facility administrative fund” under the general fund.
AS 41.06.170	Specifies that storage operators hold title to injected carbon dioxide until a certificate is issued under AS 41.06.175, including liability for damage associated with injected carbon dioxide.
AS 41.06.175	Specifies criteria for certificate of completion a transfer of title of CO ₂ - 8 factor criteria.

SECTION DETAIL: SECTION 31 (AOGCC)



Subsection	Summary
AS 41.06.180	Provides authority for AOGCC to collect a “carbon storage facility injection surcharge” for post-closure administration to be deposited in the “carbon storage closure trust fund” established in AS 37.14.850 (<i>bill</i> Sec. 4).
AS 41.06.185	Provision for AOGCC to impose civil penalties for violations of its carbon storage statutes.
AS 41.06.190	Exclusion of AOGCC’s carbon storage statutes from enhanced oil recovery (EOR), except for when an EOR-related reservoir is converted to a storage reservoir.
AS 41.06.195	Authority for AOGCC to enter into agreements with other government entities and agencies for carbon storage purposes.
AS 41.06.200	Authority for AOGCC to determine amounts for injection and storage, including EOR. Also provides for fees and applicability for credits and other carbon management goals.
AS 41.06.210	Definitions for terms used in AOGCC’s carbon storage statutes.

SECTIONAL SUMMARY: 32–39



Section (Agency)	Summary
32–35 (DNR/Parks)	<p>Conforming amendments to parks and recreational facilities laws (AS 41.21).</p> <ul style="list-style-type: none">AS 41.21.167(a) Wood-Tikchik State Park carbon storage prohibitedAS 41.21.491(d) Willow Creek State Recreation Area carbon storage permittedAS 41.21.502(c) Kenai River Special Management Area carbon storage permittedAS 41.21.617 Alaska Chilkat Bald Eagle Preserve carbon storage prohibited
36 (DNR/DOG)	<p>Adds new subsection AS 44.37.020(d) for DNR to administer storage facilities and stored carbon after certificate of completion is issued under AS 41.06.175 (<i>bill Sec. 31</i>).</p>
37–39 (DNR/AOGCC)	<p>General provisions for authority to adopt regulations, title change for chapter AS 41.06, and effective date of the legislation.</p>

QUESTIONS?



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