

**DRAFT COPY - SUBJECT TO COMMITTEE APPROVAL**

**BOARD:** TAZEWELL COUNTY

**COMMITTEE:** LAND USE

**DATE/TIME:** Tuesday, May 14, 2024, at 5:00 p.m.

**PRESENT:** K. Russell Crawford, Greg Sinn, Mark Goddard, Jay Hall, Kaden Nelms, and Chairman Kim Joesting

**ABSENT:** Randi Krehbiel

**STAFF PRESENT:** Jaclynn Workman, Community Development Administrator; Matt Drake, Assistant States Attorney; and Melissa Kreiter, Community Development Chief Deputy

**OTHERS PRESENT:** Eric Schmidgall (County Board Member Elect), Eric Stahl (County Board Member Elect), Tim Baer, Attorney Ben Jacobi representing RWE, Eli Varol of RWE, Dr. Matt Gordon, Superintendent of Rankin District 98, Scott Jordan and Steve Whitaker of Vault, Susan Adams and Tracy Fox of the Central Illinois Healthy Community Alliance Coalition to Stop CO2 Pipelines and other interested parties

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**CALL TO ORDER:** Chairman Joesting called the meeting to Order at 5:01 p.m.

**PUBLIC COMMENT:** Tim Baer appeared to address the committee. Mr. Baer stated all entities should be required to present a form stating the names of all citizens within a project footprint for better input standards and to pre-address any concerns. Mr. Baer said the UCTCIL group presented this to the Board prior in order to stop one land owner from forcing a project upon another potentially non-agreeable land owner. Mr. Baer added that the Catmint Solar project and the Coyote Road Solar project should be denied for not engaging with the citizens.

Dr. Matt Gordon, Rankin District 98 Superintendent appeared to address the committee. Dr. Gordon stated at one point a proposed pipeline was very close to, if not cutting through, the school grounds.

Dr. Gordon said that the School Board had voted unanimously to oppose any CO2 pipelines, noting that a rupture would be catastrophic to the District.

Attorney Ben Jacobi appeared to address the committee. Mr. Jacobi stated he represented RWE in the Coyote Road Solar project that was before the committee. Mr. Jacobi said the ZBA voted to approve the project with conditions and then gave an overview of the project as discussed at ZBA. Mr. Jacobi added there was a signed AIMA on file with the State of Illinois. Mr. Jacobi requested the committee reduce the screening condition of trees from 6' to 5' at the time of planting due to encourage sustainability.

Eli Varol of RWE appeared to address the committee regarding the Coyote Road Solar project. Mr. Varol stated transmission lines ran through the proposed site and the job would create 300 construction jobs and 4 full time on site positions once operational. Mr. Varol said an open house was held, in addition to several other meetings with

various entities within the project area. Mr. Varol added, the wells identified within the project are only irrigation wells and not potable, wherein the landowners preferred to have the wells capped than abandoned.

**MINUTES:**

Moved by Sinn, seconded by Hall, to approve the minutes of the April 9, 2024 Land Use Meeting. On voice vote, **motion declared carried.**

**NEW BUSINESS**

**CASES:**

**LU-24-08**

**Case No. 24-13-S**

Coyote Road Solar

Chairman Joesting presented the petition of Coyote Road Solar for a Special Use to allow the construction of a 150 Mega Watt Commercial Solar Farm in an A-1 Agriculture Preservation District.

Committee Member Greg Sinn commended RWE on their public outreach for the project, and stated that the size of the project would have an economic impact in the area. Mr. Sinn said 100 thousand bushels of corn and 50 thousand bushels of beans were potentially going to be lost annually, and the lease agreements do not refresh the economy such as crops would, therefore he would not be in support of the project as it would remove 100% prime farm ground.

Committee Member Russ Crawford requested to read a letter from Joyce Aggertt in opposition of the project and have it submitted into the file. Due to the letter being new evidence, it was determined it could not be read, as that would be considered new evidence therefore a copy was retained by Community Development. Mr. Crawford stated he was concerned of the liabilities of a tornado damaging the project and sending debris to damage adjacent properties and suggested time limits be given on damage assessment and correction.

County Board Member Nick Graff questioned the tax revenue figures that were projected and how the finding of fact related to prime farm ground was determined to be positive.

County Board Member Jon Hopkins stated the location of the transmission lines were a plus and noted there were no battery storage facilities proposed for this project. Mr. Hopkins said RWE had set the bar high with their outstanding community outreach.

Following discussion, moved by Nelms, seconded by Goddard to recommend approval of LU-24-08, Case No. 24-13-S to the Tazewell County Board.

On roll call vote:

Ayes: 4 – Goddard, Hall, Nelms & Chairman Joesting

Nays: 2 – Crawford & Sinn

**Motion declared carried.**

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Chairman Joesting presented proposed Amendment 69 to the Committee regarding including Agri-tainment/Agri-tourism and the potential need for a Special Use.

Committee member Sinn questioned whether the proposed amendment would encompass entertainment or wedding venues as a part of agri-tourism, wherein it was explained that it would not.

Committee member Goddard questioned whether or not roadside stands would be affected by this proposed amendment, wherein it was explained that they could be subject to a Temporary Use permit dependent on the size of the stand. Mr. Goddard asked who would police these types of businesses and stated he felt it was a bad idea to require Special Use approval for these types of uses. Mr. Goddard said that he felt there needed to be less Special Use regulations.

Committee member Crawford stated he agreed with Member Goddard however he has confidence that the Community Development staff will make common sense decisions and will not limit the mom and pop stands selling produce.

Committee member Sinn stated that Special Use regulations are needed in order to address traffic, noise and like concerns that could impact adjacent properties.

Following discussion, moved by Hall, seconded by Crawford to recommend approval of LU-24-09, Case No. 24-14-A to the Tazewell County Board.

On roll call vote:

Ayes: 5 – Crawford, Hall, Nelms, Sinn & Chairman Joesting

Nays: 1 - Goddard

**Motion declared carried.**

**RECESS/RECONVENE:**

The Committee recessed at 7:16 p.m. for a short break prior to addressing the Discussion items on the Agenda.

**DISCUSSION:**

Class VI Injection Wells

Administrator Workman stated the need to compile information either in preparation of a potential ordinance either allowing or disallowing carbon sequestration and siting of class VI injections wells. Ms. Workman said there were several individuals in attendance, upon invitation, with presentations to address the pros and cons of Class VI injections wells and carbon sequestration. Ms. Workman informed those in attendance that this presentation was at the request of the Committee and not open to public comment or questioning, as that would be reserved for any public hearings held before the Zoning Board of Appeals.

Ms. Workman first introduced Scott Jordan and Steve Whitaker of Vault44.01 and read a short bio on each.

Scott Jordan, Senior Project Manger with Vault44.01, a Carbon Capture and Storage (CCS) project development team with expertise in permanent storage of carbon dioxide. Mr. Jordan, along with a

slideshow presentation (see attached) stated participation is voluntary to be in the proposed Alto project, and they were in the very early stages. Mr. Jordan said the Mount Simon basin and the Eau Claire Shale layer makes central Illinois a prime area for this type of project.

Steve Whitaker, VP of Subsurface with Vault44.01, formerly Director of Energy & Minerals, Illinois State Geological Survey, at the University of Illinois spoke to the Mahomet Aquifer and how it was the sole source of water for many local counties and municipalities and how it was of extreme importance to not endanger that water source.

Mr. Whitaker stated there was a second, much deeper aquifer located below the Mahomet that most were not aware of. Mr. Whitaker stated there was a monitoring network for injection wells with relation to aquifers, as well as seismic monitoring. Mr. Whitaker added a Class VI injection well was very different from the oil and gas wells that most people were familiar with.

It was discussed how the injection well was constructed and how there were multiple strings of casing that penetrate above surface. It was also discussed how they could do mechanical isolations and also abandon wells if they do not meet the strict standards. Further, it was discussed of the financial assurances that were put in place along with an emergency response plan, various areas of review, risk assessments, monies to be escrowed for the life of the project in addition to insurance policies in place.

Administrator Workman introduced Susan Adams and Tracy Fox of the Central Illinois Healthy Community Alliance Coalition to Stop CO2 Pipelines and read a short bio on each.

Susan Adams stated she really began looking into CO2 in 2011 and that Class VI injections wells have not been around long. Ms. Adams, along with a slideshow presentation (see attached) said there was a lot of unknowns about how the CO2 will change physically and even chemically over time. Ms. Adams added there were projects that are 200 times the size of the ADM Decatur project, and the installation and maintenance of these projects actually increase power and water consumption. Ms. Adams had concerns of the plumes moving to pore space and how it would be controlled to keep it from moving. Ms. Adams also stated the plumes are moving into the pore space of non-participating members. Additionally, Ms. Adams noted that gas storage in Illinois is in the top 1/3 of the Mt. Simon layer and that there is gas that has reached the surface thereby contaminating wells and killing crops posing a concern of carbon leaking through shale and escaping through other well penetrations. Ms. Adams noted there were 2 seismic areas to be concerned of, as increased seismic activity has been noted, along with how weather events play in to these projects.

Tracy Fox stated the companies are working with very limited data sets and very little was known about the effects of these types of wells and storage. Ms. Fox stated ADM and Wolf Carbon are profit driven projects, therefore not very good models for reference. Ms. Fox said, all we have been given are engineers and geologists best laid plans. Ms. Fox added the concern of what if an explosion would happen at a well head, or what if an explosion happened where the

pipeline meets the well head, these are areas that are not addressed by both the EPA or the ICC. Certain agencies only have control over certain aspects of the project, and there was no control over overlapping or connection point, meaning the areas where risks are amplified are being overlooked. Ms. Fox gave statistics for accidental, yet potential, deaths as released by the proposed Navigator pipeline project, noting a 20' pipeline rupture would kill anyone within 1000', at least. Ms. Fox stated the statistics and the outrage over these projects should give the County pause. Siting of wells could negatively impact farmers getting into incentive programs, etc. due to the potential risks that would be present if the soils are adversely impacted. Ms. Fox asked the committee to at least place a moratorium on the matter as setbacks are not even established, emergency plans have not been properly developed, insurance is questioning if liability insurance would be available for properties in, around or above pore space, injection wells and pipelines.

Committee member Jay Hall questioned what the percent of CO<sub>2</sub> in the atmosphere is, which was .04%. Noting that at .02% percent plants start dying, therefore what is the urgency.

Committee member Mark Goddard questioned how to better mitigate CO<sub>2</sub>. Which was answered there were a number of methods to stop producing CO<sub>2</sub>, or to better use the CO<sub>2</sub>. Tracy Fox stated the Sierra Club feels sequestration does not do enough to mitigate the CO<sub>2</sub> given the amount or dangers and damages that could be created from it. Susan Adams suggested capping leaking oil and gas wells that are releasing CO<sub>2</sub> that would provide more mitigation than sequestration. Member Goddard questioned if the Alto well would be on ALTO property, it was stated the location of the well had not been determined.

Committee member Greg Sinn stated that Alto is vital to ethanol and corn processing and noted concern if other ethanol plants would be piping in their CO<sub>2</sub>. Wherein it was noted Alto had enough CO<sub>2</sub> to warrant one injection well. He then questioned the injection into the Mt. Simon beneath the Mahomet Aquifer – wherein it was stated there was a confinement well very near the injection well to monitor any changes or potential concerns, as well as one ½ mile away to also monitor. Mr. Sinn questioned if pore space is owned by the persons who own at the surface, wherein it was explained they do and lease agreements would be required. It was further addressed that if the plume being monitored and should move into pore space of a non-participant, they would be compensated.

Committee member Crawford asked the diameter of pipeline proposed, wherein it was answered it would be a 6" pipeline. Mr. Crawford stated his involvement with water conservation and protection for 50 plus years and he had been taught any contamination of the Mahomet Aquifer would be devastating, and questioned how one would explain the risk of possible contamination of the aquifer. The question was answered that protecting the aquifer is of the utmost importance and will do everything to protect the aquifer. Noting that Mr. Whitaker is an expert on the Mahomet Aquifer and happens to work for the Vault44.01, so he would be best suited to ensure its protection.

County Board Member Jon Hopkins questioned the distance of the proposed well to the plant being within 10 miles, questioning if the plume moves can it be corrected or simply just monitored. Wherein it was stated there are methods and procedures that can be done to control the direction of the plume. It was further stated that models are drawn and reevaluated and redrawn consistently as things change. Mr. Hopkins questioned the increase in water and power usage, as stated by Mrs. Adams, wherein it was answered it would depend on the size of a project and what other environmental methods were used, such as scrubbers.

Chairman Joesting questioned voids in cementing the injection pipes and the methods of correcting or eliminating them. Wherein it was answered the process would be using ultrasonic tools to locate problems and fix them. Mr. Joesting questioned the difference between the well in Decatur and the one proposed, wherein it was stated it was just a visual reference. Mr. Joesting asked how many truckloads of CO2 are trucked from the Alto plant, wherein it was stated the CO2 leaves via railcar and truck, and it averaged 30-50 trucks a week. Mr. Joesting questioned who would be the emergency response team, where it was answered that was to be determined, but it would start with company personnel and dependent on the level of the incident and level of the event as to who would be needed to respond.

Committee member Sinn questioned if this project would actually increase risks for seismic activity, wherein it was noted it will increase the activity but it is monitored continuously. It was further stated the activity is far below the seismic activity that can be felt, but all activity is detected by the monitors. Mr. Sinn questioned if the seismic activity is reported, where it was stated they do have to report the activities. It was stated that reports are provided to the EPA and if significant activity is recorded, the well is to be shut down until the matter is addressed.

Committee member Russ Crawford stated the media should be invited to these informative events.

**RECESS/RECONVENE:**

The Committee recessed at 7:53 p.m. for a short break prior to addressing the remaining discussion items on the Agenda.

**Solar Farm Special Use**

Administrator Workman stated the approval of a Special Use does not automatically imply that a permit will be issued. Ms. Workman added, there are many other steps and approvals required prior to permit issuance. These include but are not limited to; Road Use Agreement, Decommissioning Plan, Stormwater Management Plan, etc. Ms. Workman added that the Special Use is just the first step of the process, is the site an appropriate fit for the request. Ms. Workman noted that the petitioner could be required to provide the project at 100%, requiring that all items and approvals be granted and provided prior to a Special Use request, and it that were the case, a permit then could be issued immediately upon approval of the Special Use request. Ms. Workman said this would be something for the committee to consider going forward, setting a clear expectation of the County for the petitioner for guidance.

Committee Member Goddard stated there were weight limits on roadways, and once those limits were lifted, given the roads are public, they can then be driven on.

Assistant States Attorney stated Road Use Agreements are to allow the county to address the potential damage that could be caused to roads and shoulders, and to ensure that the roads are left up to current standards.

**STAFF REPORT**

Administrator Workman presented the Committee a Staff Report detailing revenues, expenses and other office related activity for the month and year to date. This item was for discussion purposes only and no action was taken.

**UNFINISHED BUSINESS:**

Member Greg Sinn asked for an update on the search for a new building inspector.

Administrator Workman stated there have been 2 interviews thus far, however a candidate had not been chosen.

**NEXT MEETING:**

The next meeting of the Land Use Committee will be held on **TUESDAY, June 11, 2024 at 5:00 p.m.**

**RECESS:**

There being no further business, the meeting recessed at 8:12p.m.

***Jaclynn Workman, Secretary***



Vault 44.01



# Introduction to Carbon Capture and Sequestration (CCS)

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Tazewell County Presentation 5/14/2024

Alto Pekin, LLC

[www.vault4401.com](http://www.vault4401.com)

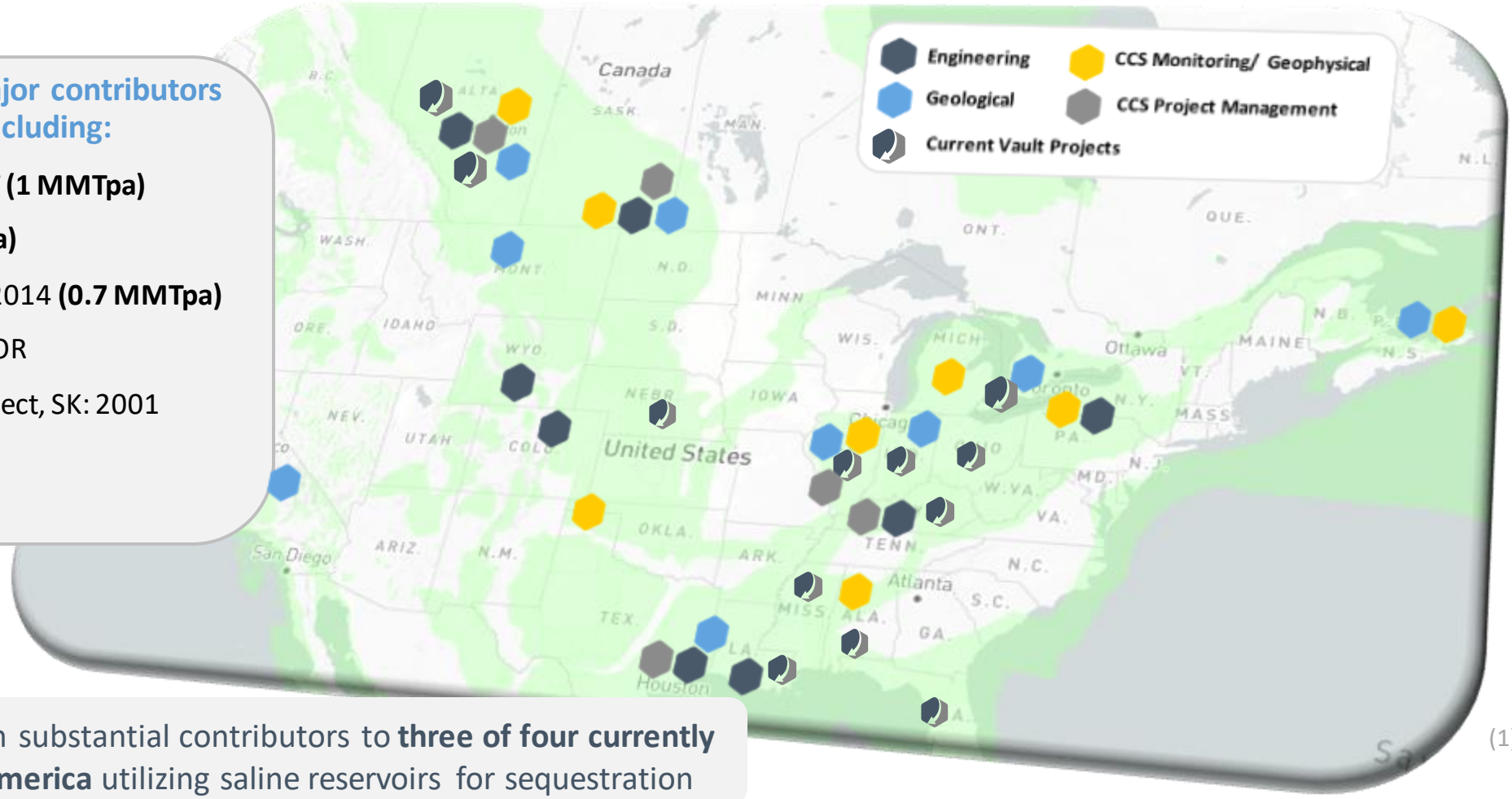
[info@vault4401.com](mailto:info@vault4401.com)



# Vault's CCS Project Experience Spanning North America

Team members have been major contributors to world-class CCS projects, including:

- ADM Decatur, IL: 2011-13; 2017 (1 MMTpa)
- Shell Quest, AB: 2015 (1 MMTpa)
- SaskPower Boundary Dam, SK: 2014 (0.7 MMTpa)
- West Texas and Midcontinent EOR
- IEA GHG Weyburn – Midale Project, SK: 2001 (2MMTpa)



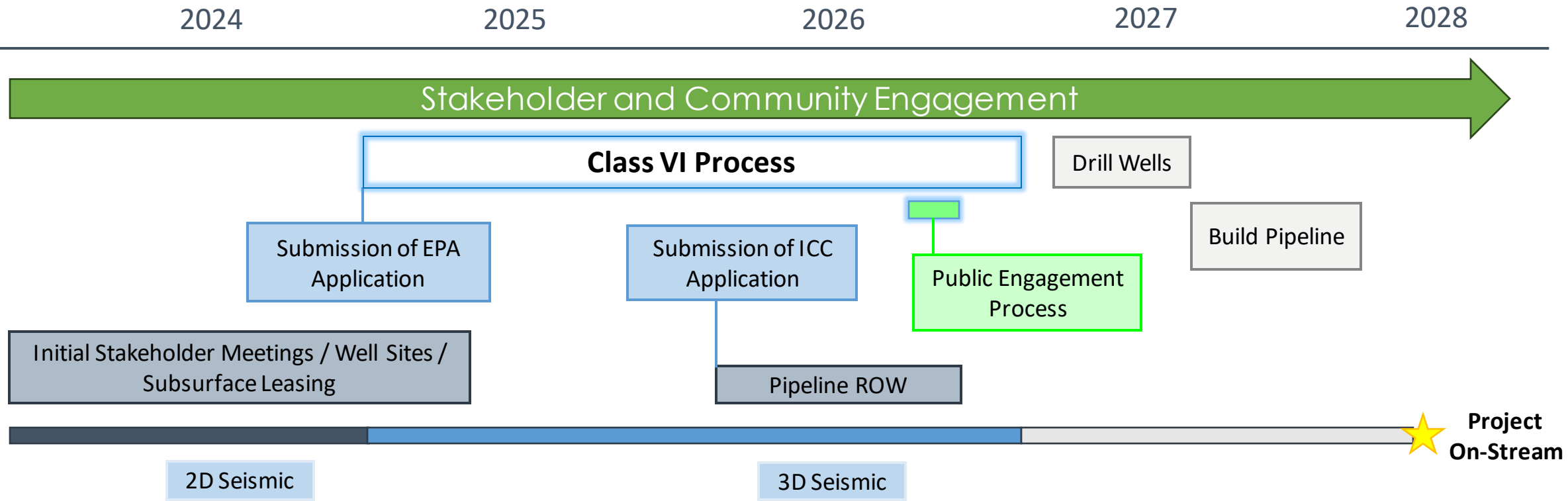
Multiple team members have been substantial contributors to **three of four currently operating CCS projects in North America** utilizing saline reservoirs for sequestration

(1)

(1) Source [Base Map]: North American sedimentary basins –sourced from U.S. Department of Energy’s NATCARB/ATLAS database



# CCS General Project Milestones



- EPA Class VI permit required for carbon sequestration project:
  - **Primary focus on protections to prevent leakage and the preservation of drinking water**
  - **Extensive 24-month process to confirm technical evaluation**
- Stakeholder engagement and support from community is essential for successful execution



# Technical Evaluation & Geology Summary

Technical analysis completed through feasibility stage and sensitivity analysis

## Well Logs:

- >600 logs used for detailed evaluation

## Core Data:

- Many regional wells will be used to evaluate storage and confining zones

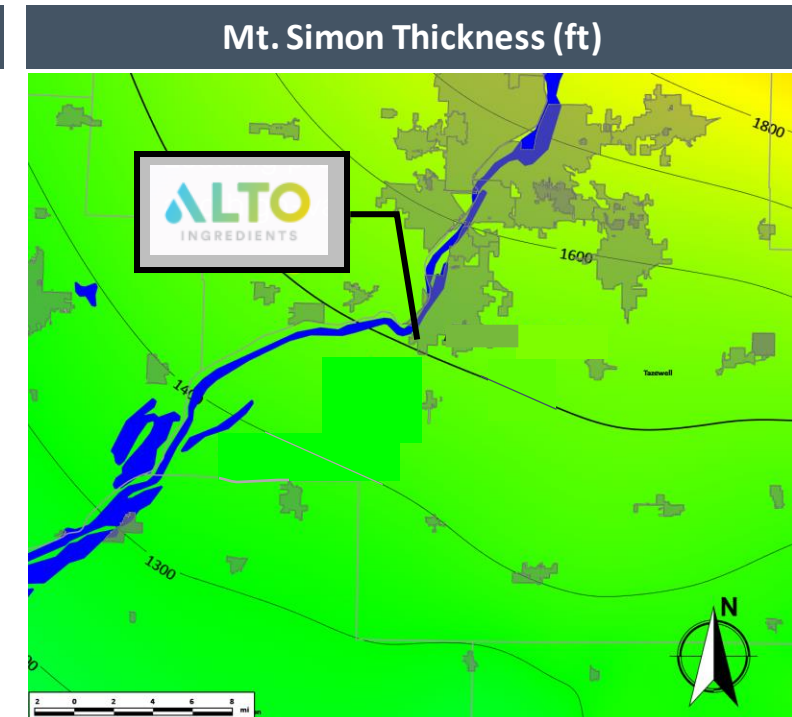
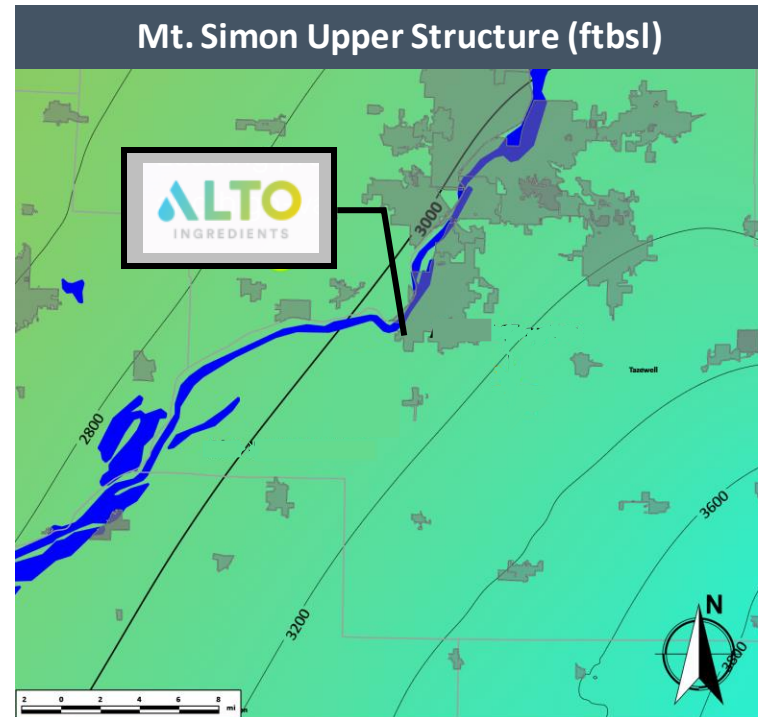
## Well Test Data:

- Regional well test data to calibrate geologic model

## Seismic Data:

- 2D seismic lines near facility will be used to confirm regional mapping

## Regional Mapping



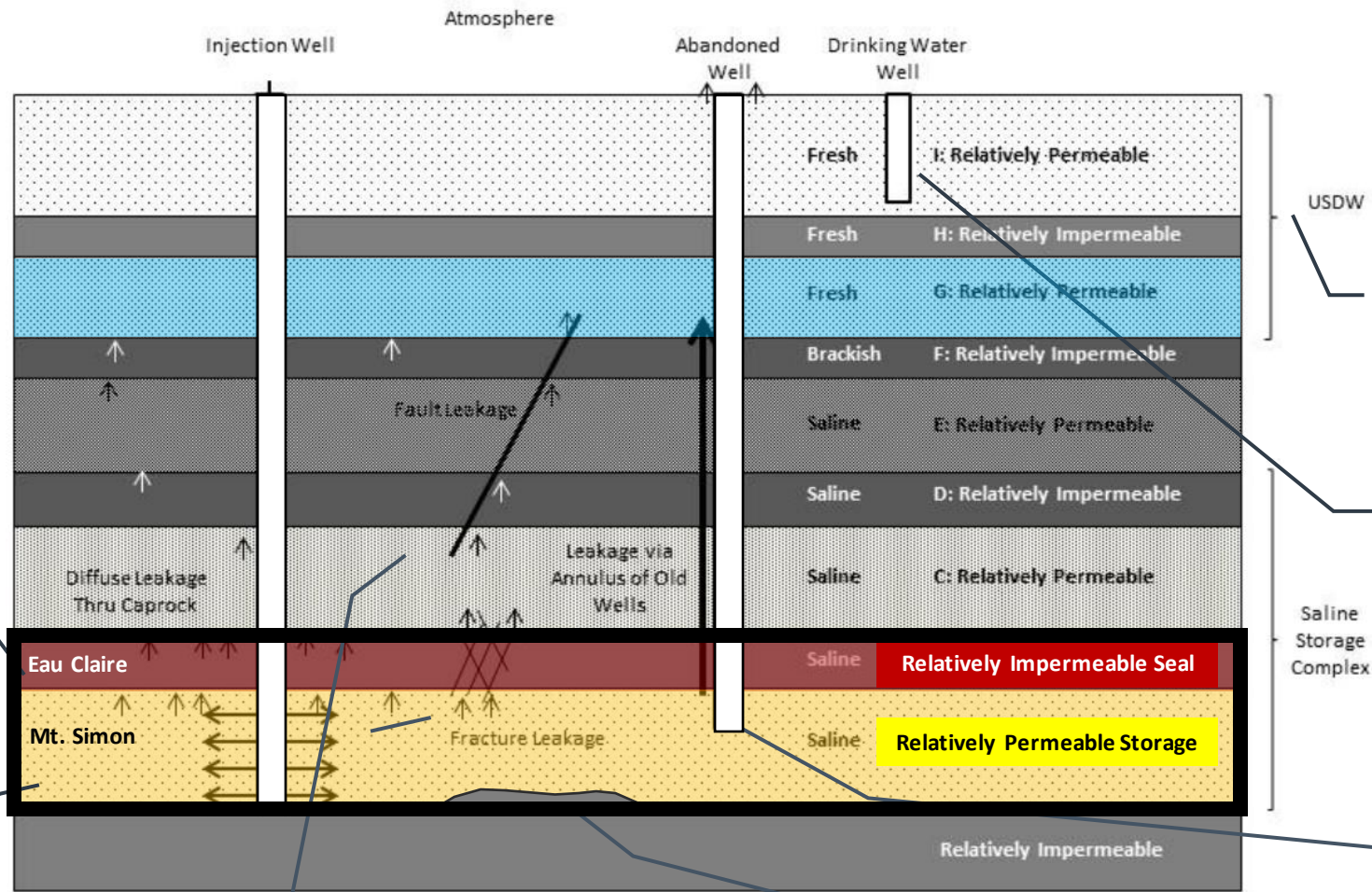
Continued refinement to determine optimal locations  
2D seismic data to improve estimation of reservoir thickness



# Objectives of the Technical Study



- ☑ Containment
- ☑ Capacity
- ☑ Injectivity



**Evaluation of seal properties** (thickness, porosity, permeability, depth)

**Evaluation of storage properties** (thickness, porosity, permeability)

Identify presence of faults / fractures to be avoided

Identify presence of basement highs to be avoided

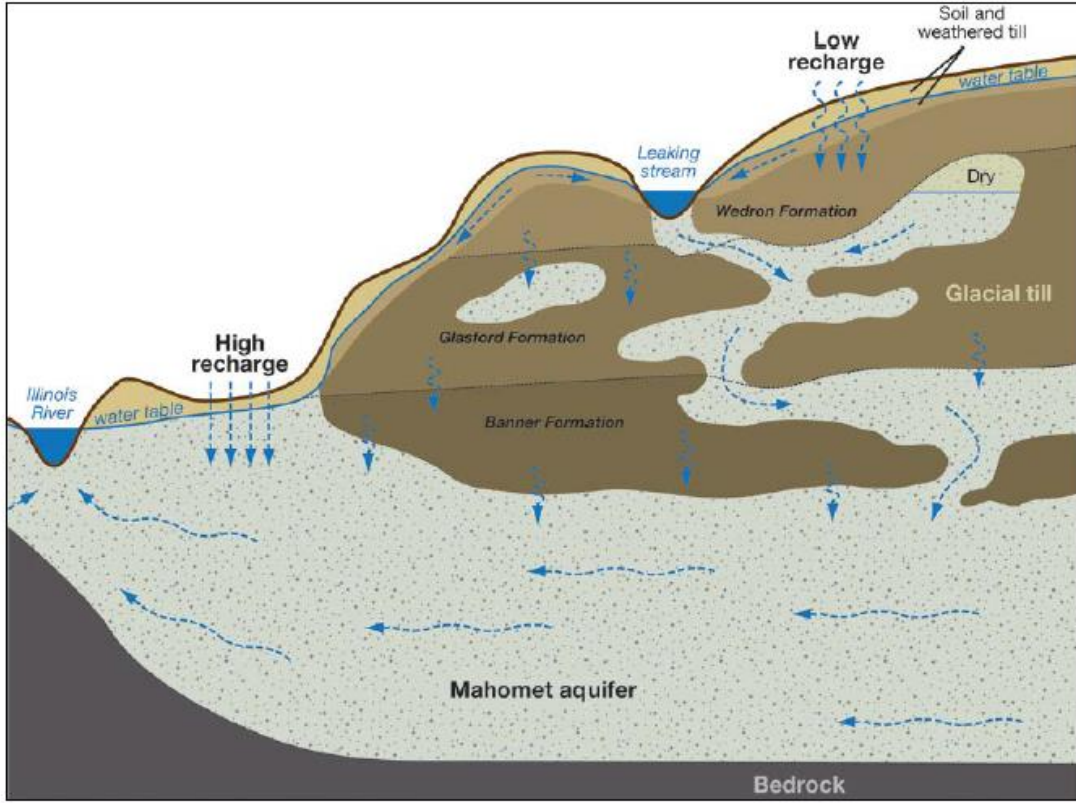
Determine the deepest USDW (primary purpose of a Class VI permit is to ensure non-endangerment of USDWs)

Identify all water wells in the area of review

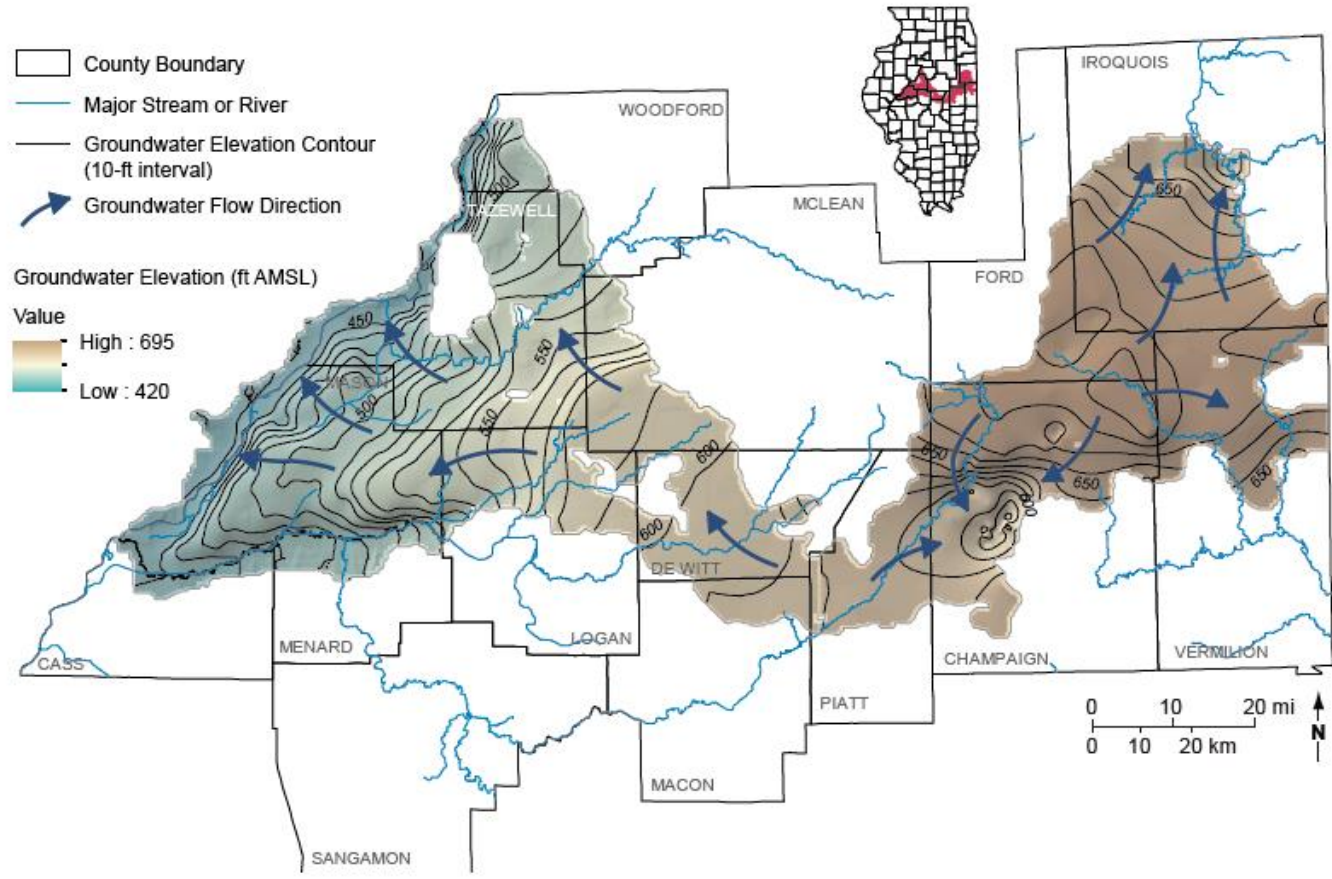
Existing deep wells nearby that could be a conduit for CO<sub>2</sub> to be avoided



# Surface and Bedrock Impacts to Aquifer



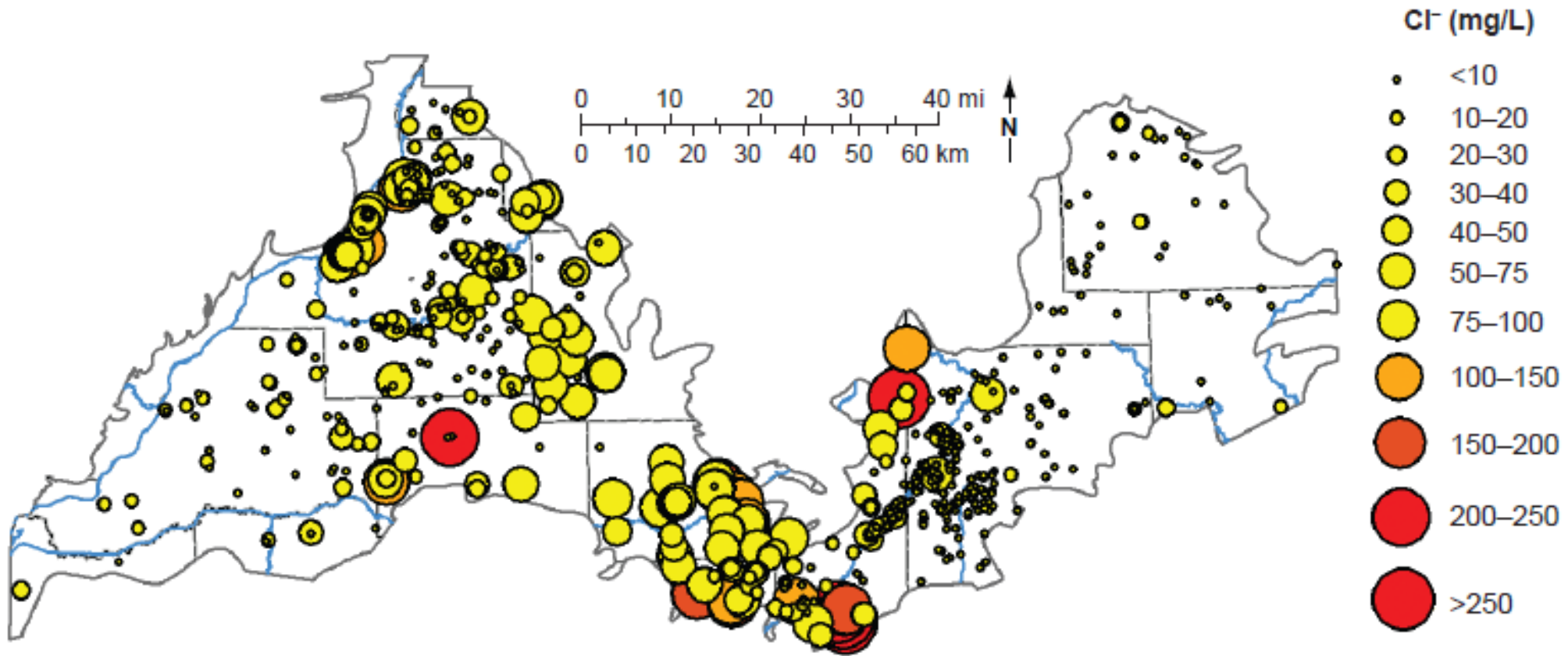
- County Boundary
  - Major Stream or River
  - Groundwater Elevation Contour (10-ft interval)
  - Groundwater Flow Direction
- Groundwater Elevation (ft AMSL)
- Value
- High : 695
  - Low : 420



Source: Roadcap, G.S., H.V. Knapp, H.A. Wehrmann, and D.R. Larson, 2011, Meeting east-central Illinois water needs to 2050: Potential impacts on the Mahomet aquifer and surface reservoirs: Illinois State Water Survey, Contract Report 2011-08, 179 p., <https://www.isws.illinois.edu/pubdoc/CR/ISWSCR2011-08.pdf>.



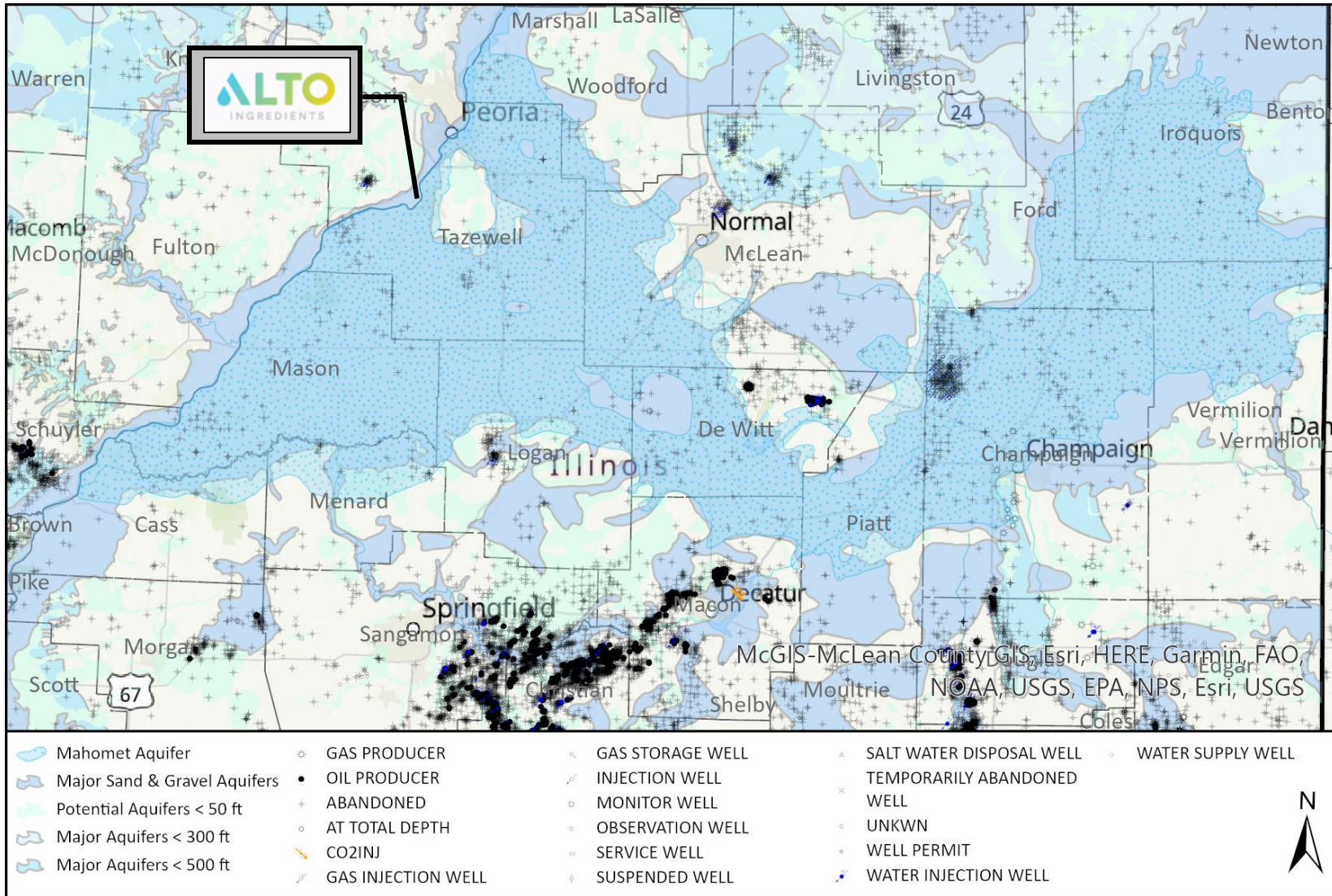
# Aquifer Monitoring Network



Source: Kelly, W.R., S.V. Panno, and K. Hackley, 2012, The sources, distribution, and trends of chloride in the waters of Illinois: Illinois State Water Survey, Bulletin B-74, 59 p., <http://www.isws.illinois.edu/pubdoc/B/ISWSB-74.pdf>.



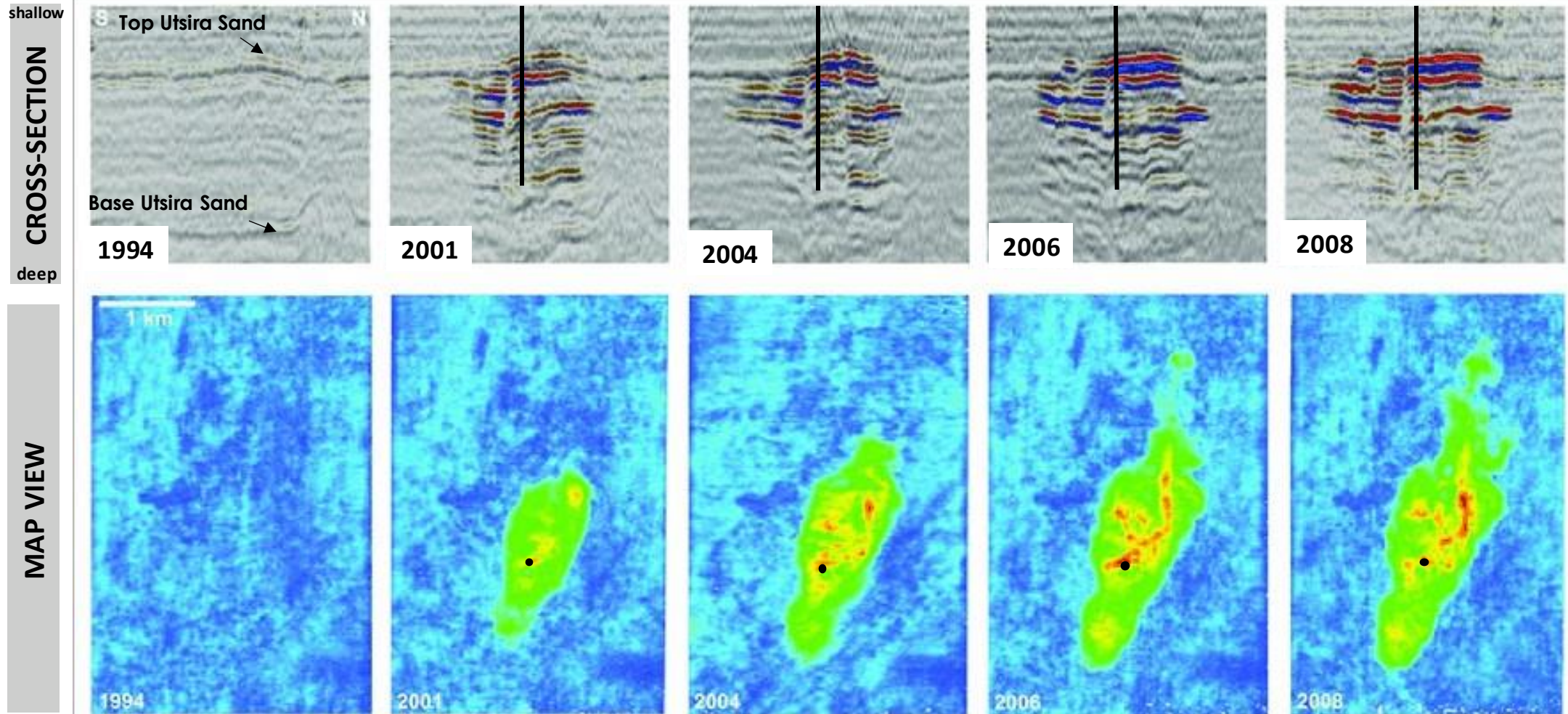
# Deep Wells in Area



# CO<sub>2</sub> Monitoring with 3D Seismic



Seismic images showing baseline to plume development (lateral and vertical) at the Sleipner Project in Norway. Injection rate of ~1 million tons per year.



Images courtesy of Statoil's Sleipner Project





# Well Casing Construction

Wellhead of ADM CCS#1 located in Decatur, IL. The well construction is similar to what is proposed for Alto project.



- 20" Surface casing set below drinking water sources and cemented to surface
- 13-3/8" Intermediate casing set below St Peter Sandstone (Lowermost USDW) and cemented to surface
- 7" Production casing set below the Lower Mt. Simon injection zone (made of corrosion resistant material where contacted by CO2) and cemented to surface
- 4-1/2" Internally coated tubing run inside the production casing and is the conduit for the injected CO2 from the surface to the injection interval

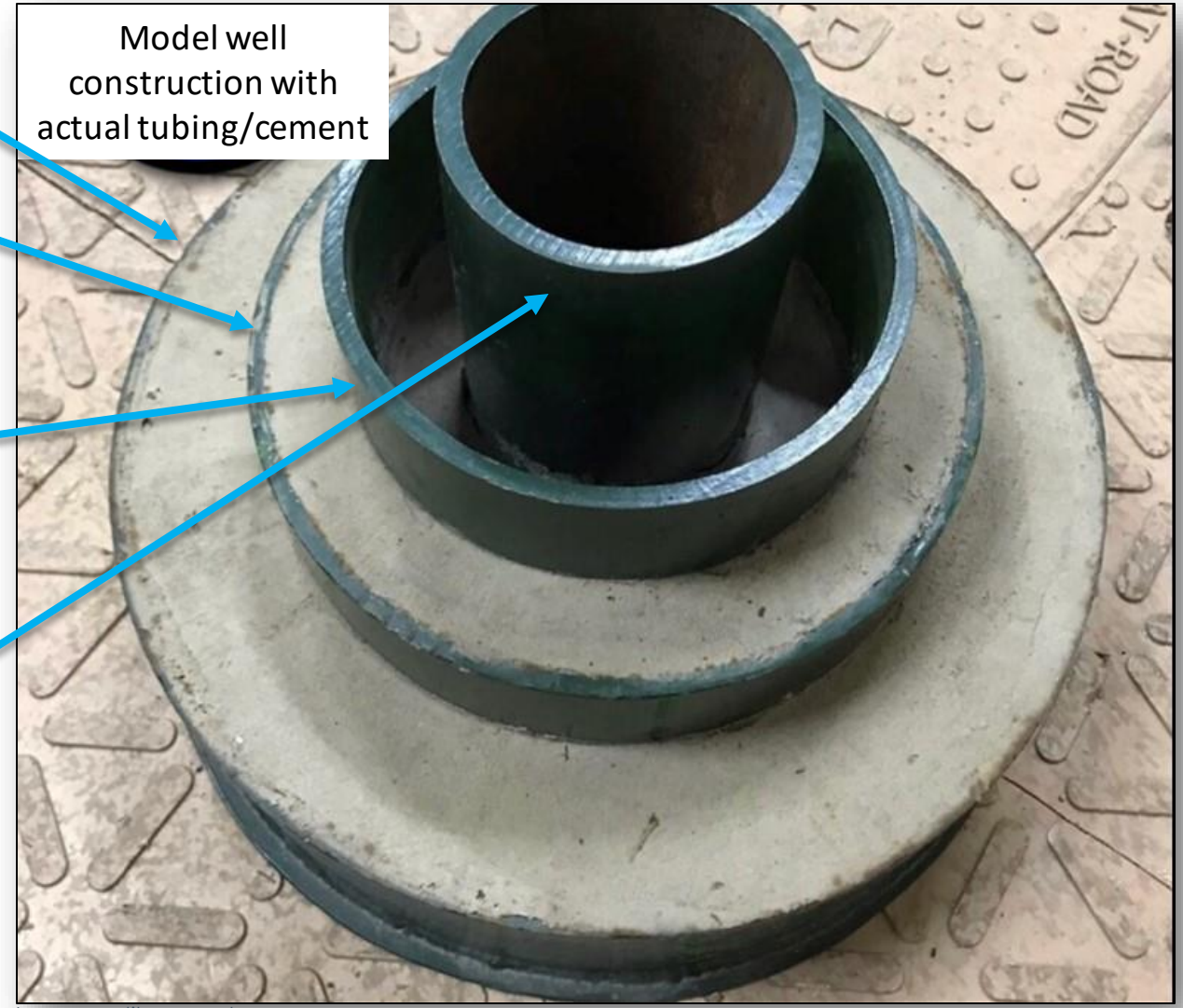


Image credit: energystrong.com



# Financial Assurance and Emergency Response

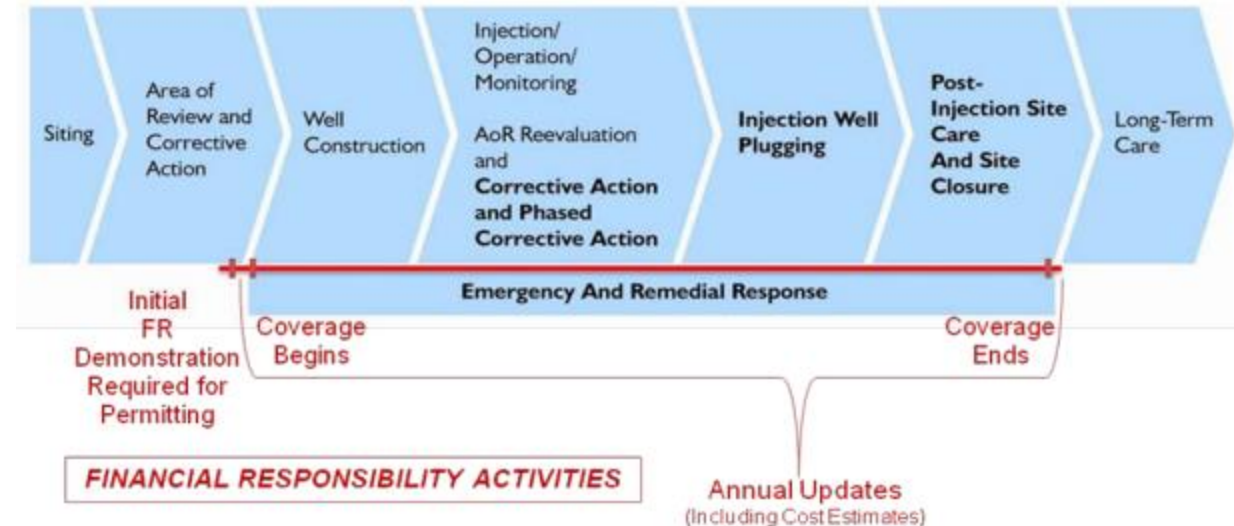
Vault and Alto are committed to working with and supporting local EMS officials  
Continued Stakeholder and Community Engagement ensures a successful, safe project

**Financial Assurance** - operators must demonstrate they have met the financial responsibility requirements prior to the approval of a Class VI permit

- The operator must use a qualifying financial instrument that covers the cost of corrective action, injection well plugging, post-injection site care and site closure, and emergency and remedial response
- Specific to this project, not a general fund

**Emergency and Remedial Response Plan (ERRP)** – operators must prepare a plan that describes the actions that will be taken to address movement of any fluids that could endanger a USDW

- If there is any evidence of endangerment the operator must:
  1. Immediately cease injection
  2. Take all steps to identify and characterize the release
  3. Notify the EPA Director within 24 hours
  4. Implement the approved ERRP



**VAULT 44.01**

# Questions?



# Understanding the Big Picture: Sequestration Does Not Happen in a Vacuum

Land Use Policy Needs to Support Public Health and Safety,  
Property Rights and More

Susan Adams and Tracy Fox  
Central Illinois Healthy Community Alliance  
Coalition to Stop CO2 Pipelines

# Things We Do Not Know

- Where sequestered CO<sub>2</sub> will go over time
- How CO<sub>2</sub> will change physically or chemically over time
- How CO<sub>2</sub> will react over physically / chemically with the rock
- How to control CO<sub>2</sub> once it is released from the bottom of well
- How it might carry toxins from one rock layer into another as it migrates upwards, ultimately into the aquifer.
- How vibrations from injection and seismic activity caused by injection will affect strata above injection
- **We have NO data / measurements on two wells operating at the same time!**

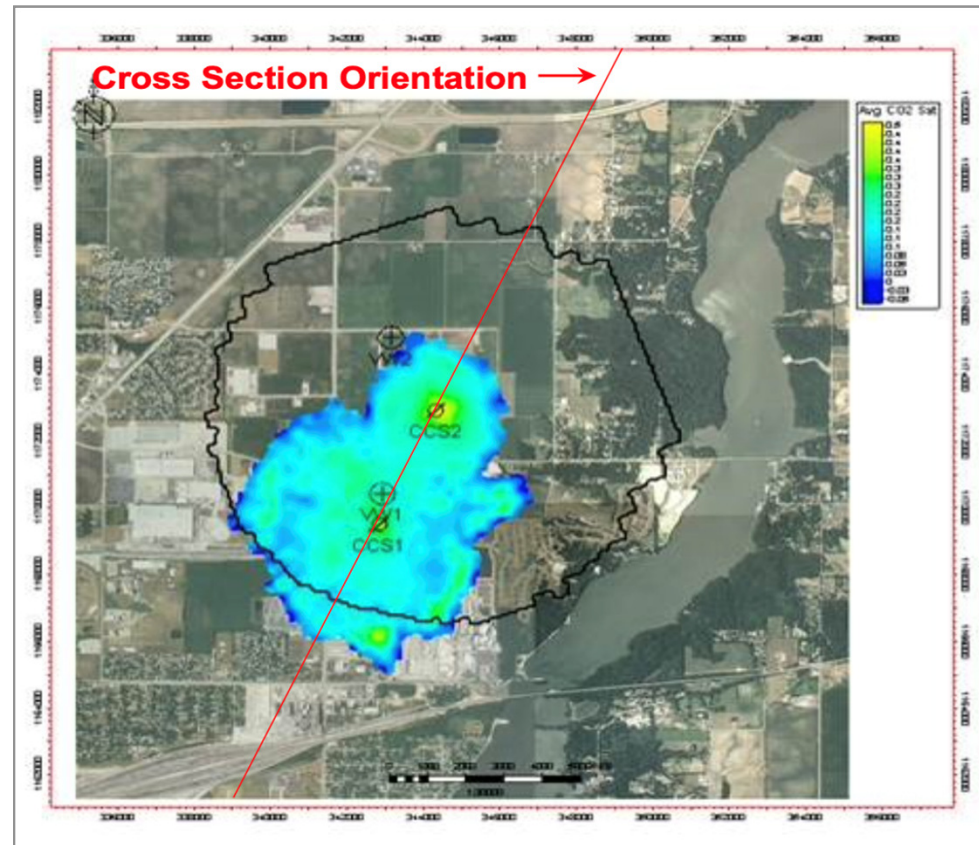
# Has Carbon Storage Worked?

We don't have a lot of history to show success:

- After **27 years**, a CCS project in Norway began to leak and cause concern
- ADM is a small project storing an average of 420,000 tons each year since 2016 (less than 1/2 of what was promised); CO2 **has escaped** AOR
- Projects in Illinois now being reviewed by the U.S. EPA are nearly **100 times the size** of ADM's Decatur project

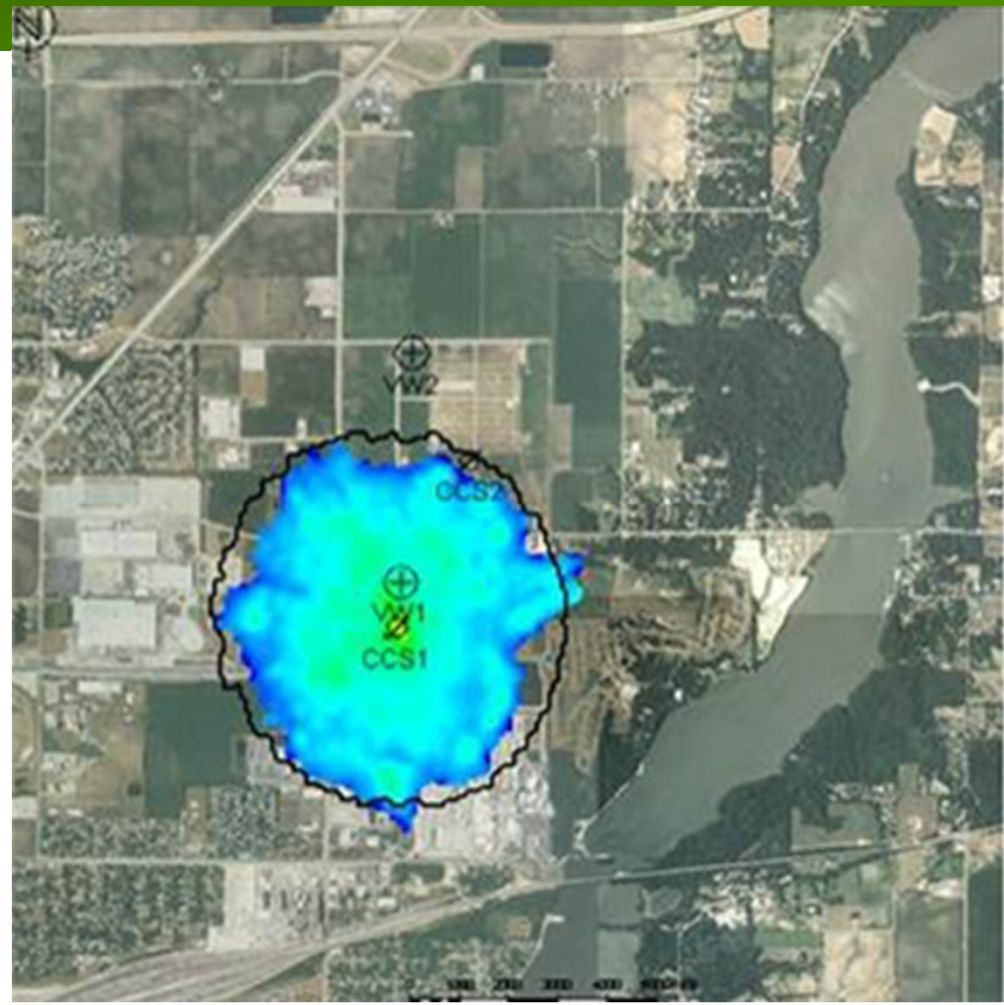
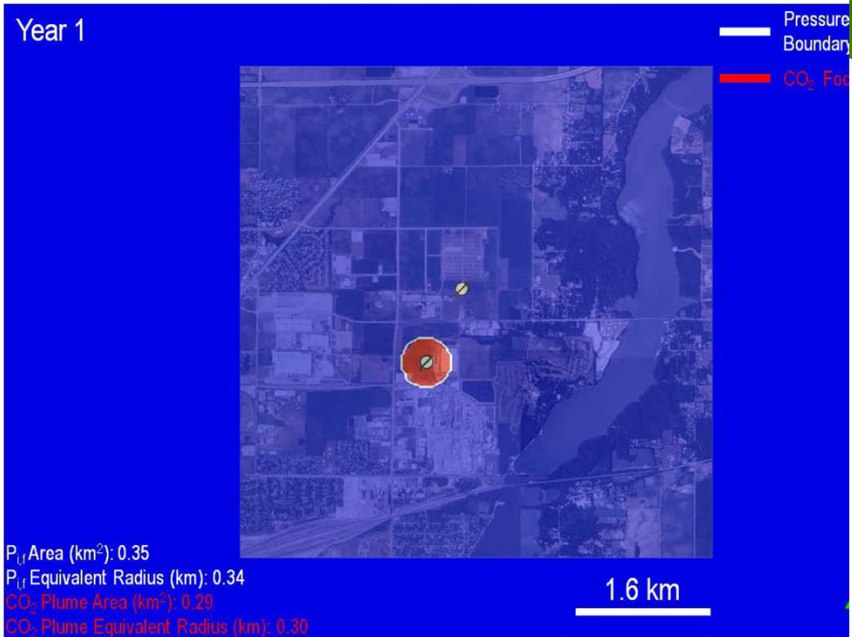
Supercritical CO2 is highly pressurized. It moves both laterally and vertically, putting pressure on weak spots of the containment area

How can we be sure it won't leak? **We can't**



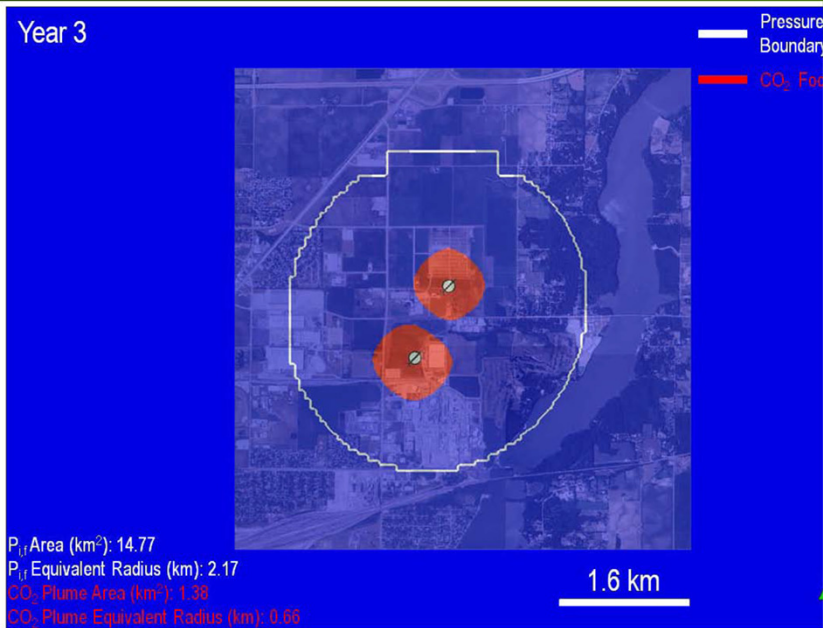
ADM CO<sub>2</sub> Plume, CCS #1 and CCS #2, 2016

Year 1



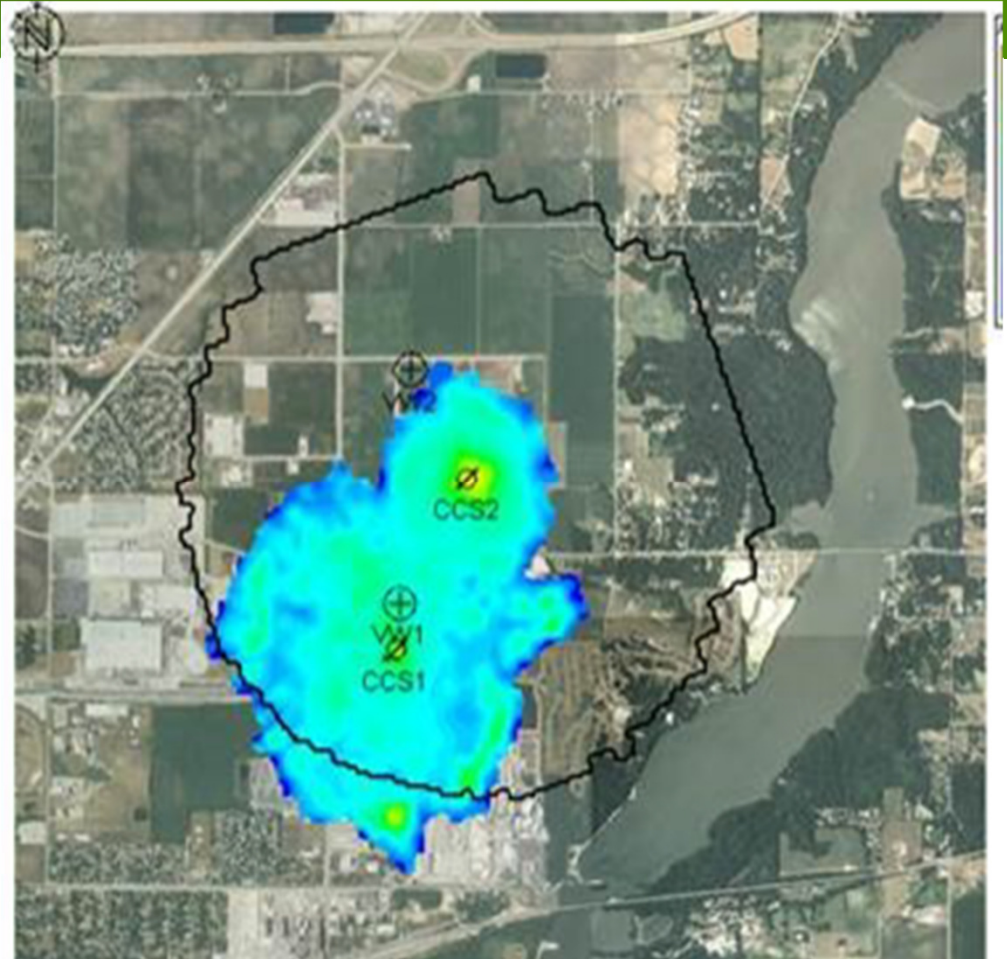
## 2015 Geophysical Modeling CO<sub>2</sub> Plume Position

Year 3



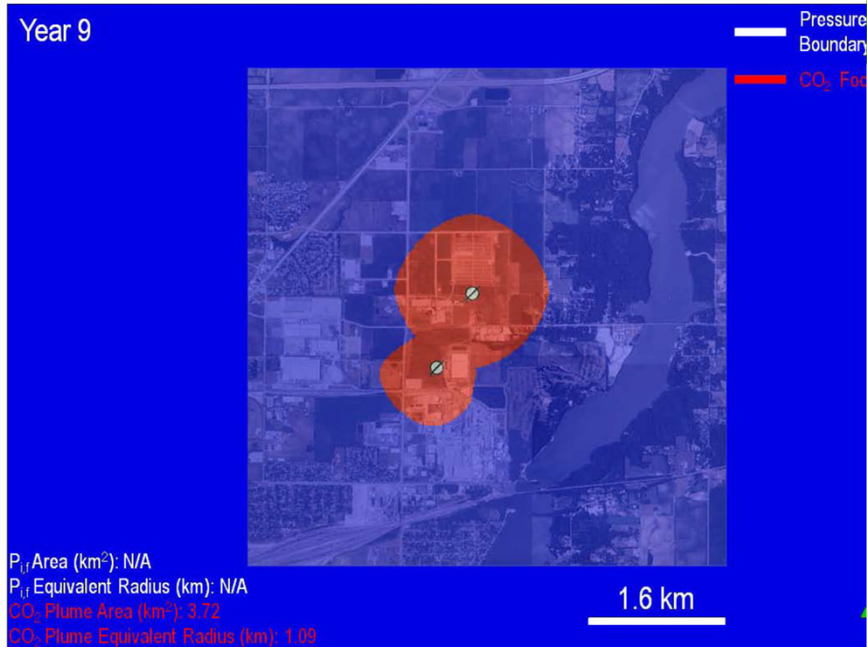
## 2016 Geophysical Modeling CO<sub>2</sub> Plume Position

- Only one well operated at a time

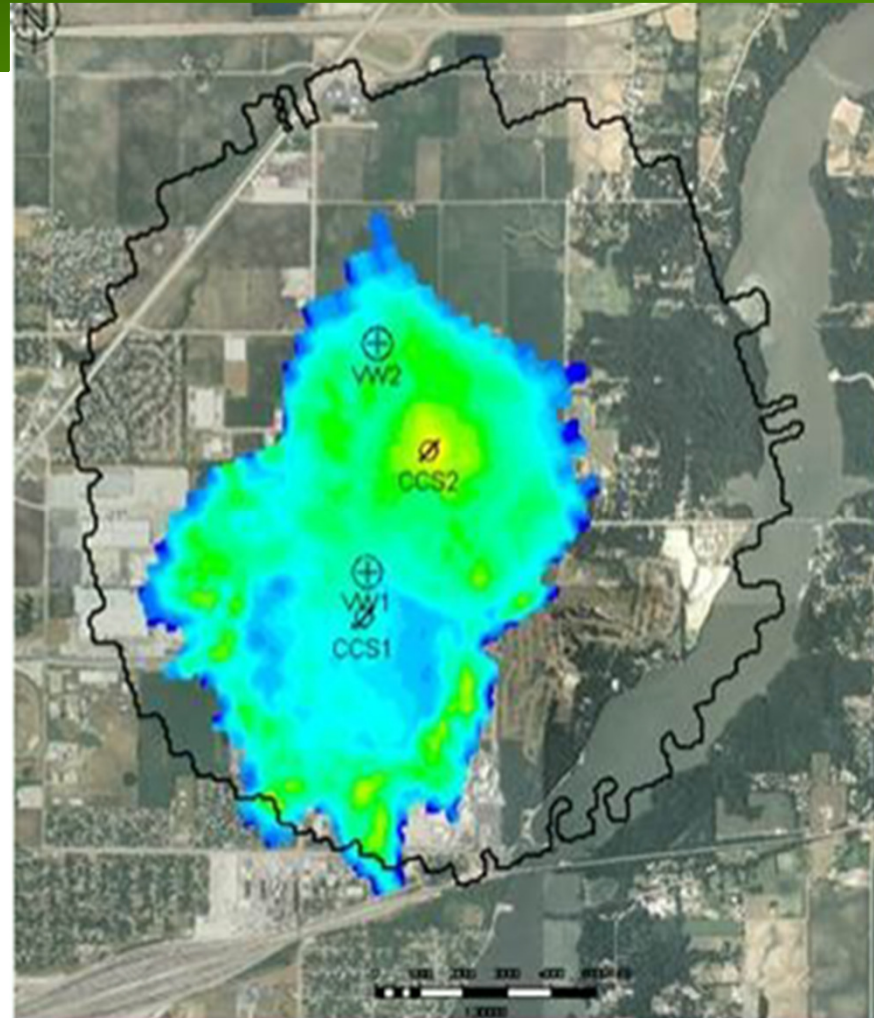




Year 9



2020 Geophysical Modeling  
CO<sub>2</sub> Plume Position



# Has the Mt. Simon Sandstone Proven Secure?

Underground natural gas storage field leaks in the Mt. Simon Saline Aquifer:

- **Ancona gas field** (Livingston County): documented leaks - Methane migrated above the cap rock. Still leaking after over 30 years
- **Troy Grove gas field** (La Salle County): documented leaks - Methane migrated above the cap rock
- **Manlove gas field** (Champaign County):
  - Documented methane leaks in a 1960's test that required moving the storage area
  - Experienced corrosion of injection well in 2015 that contaminated residents' water; replacement water required

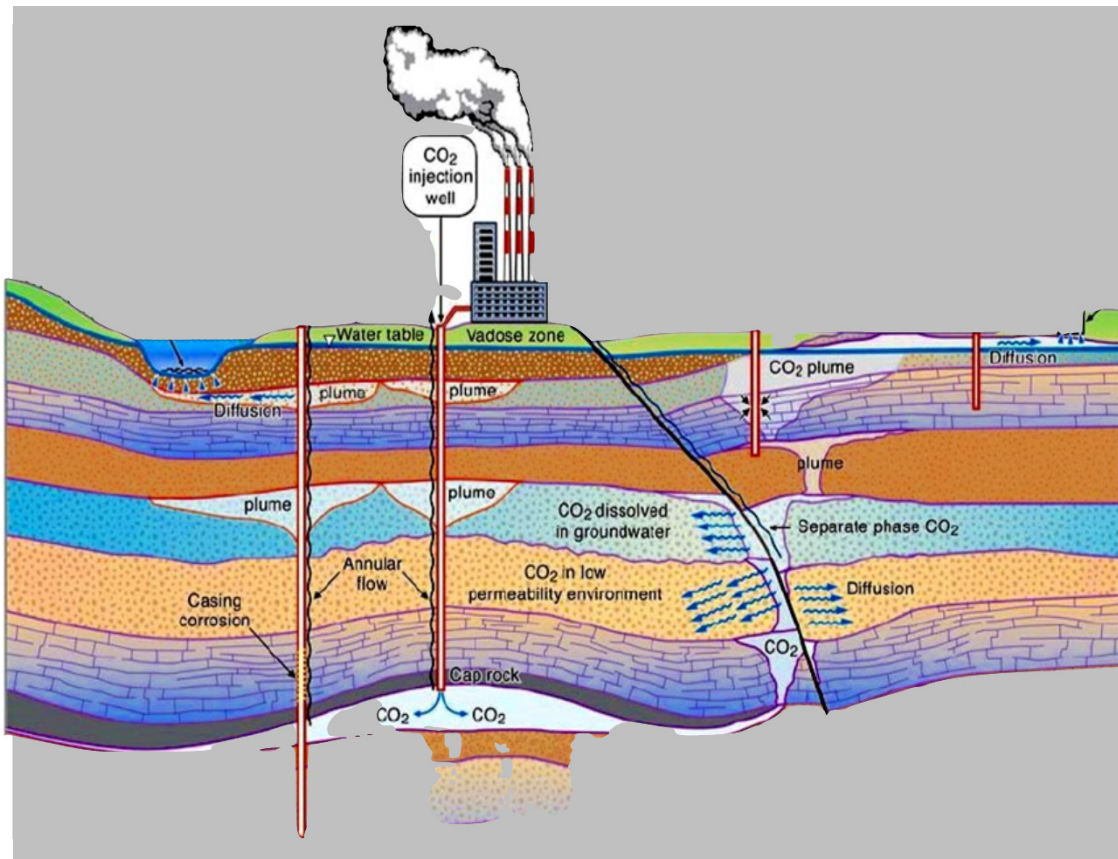
## Clear and Present Danger: The Leak

by: [Mark Maxwell](#), Lyndsay Jones  
Posted: Oct 14, 2020 / 06:34 PM CDT  
Updated: Jul 26, 2021 / 04:39 PM CDT

### *Methane leak permeates rural farmland*

ANCONA, Ill. (WCIA )— Government agencies tasked with safeguarding the environment allowed methane — the same highly-flammable, invisible element that warms homes, ignites stovetops and fuels the power grid — to leak into the sky, bubble in streams and water wells, and kill crops over the course of decades in rural Illinois, a Target 3 investigation has found.

# Where Do Leaks Occur and Do They Matter?



Sequestered CO<sub>2</sub> can leak:

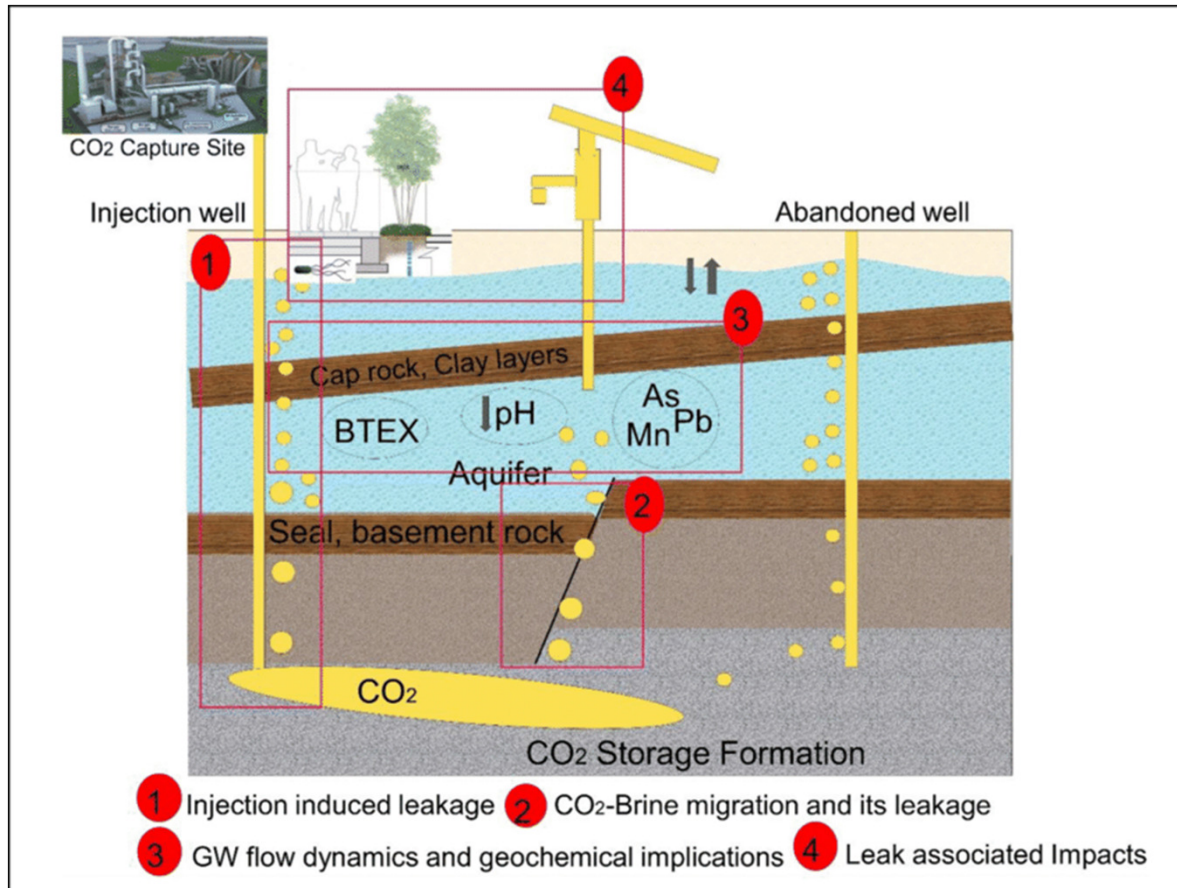
- Supercritical CO<sub>2</sub> is more buoyant than surrounding liquids
- It can escape along injection or abandoned wells or through fractures in the caprock (seal)

Leaking CO<sub>2</sub> can:

- Contaminate aquifers
- Stunt crop growth
- Release CO<sub>2</sub> back into the atmosphere

It can take **1,000 years or more** for CO<sub>2</sub> stored in a saline aquifer to become inert

# How Do Leaks Lead to Water Contamination?



## Water Contamination

CO<sub>2</sub> is not, by itself, a water quality hazard

But, CO<sub>2</sub> gas migrating toward the surface could reach an underground source of drinking water and form carbonic acid

This can cause heavy metals, such as arsenic, to leach out of sand and rock, potentially releasing them in concentrations that would pose a health risk

Reservoir brine can also migrate, increasing salinity and introducing toxic substances

Leakage of CO<sub>2</sub> from geological storage and its impacts on fresh soil-water systems: a review. Gupta and Yadav. April 2020

# What is at Stake?

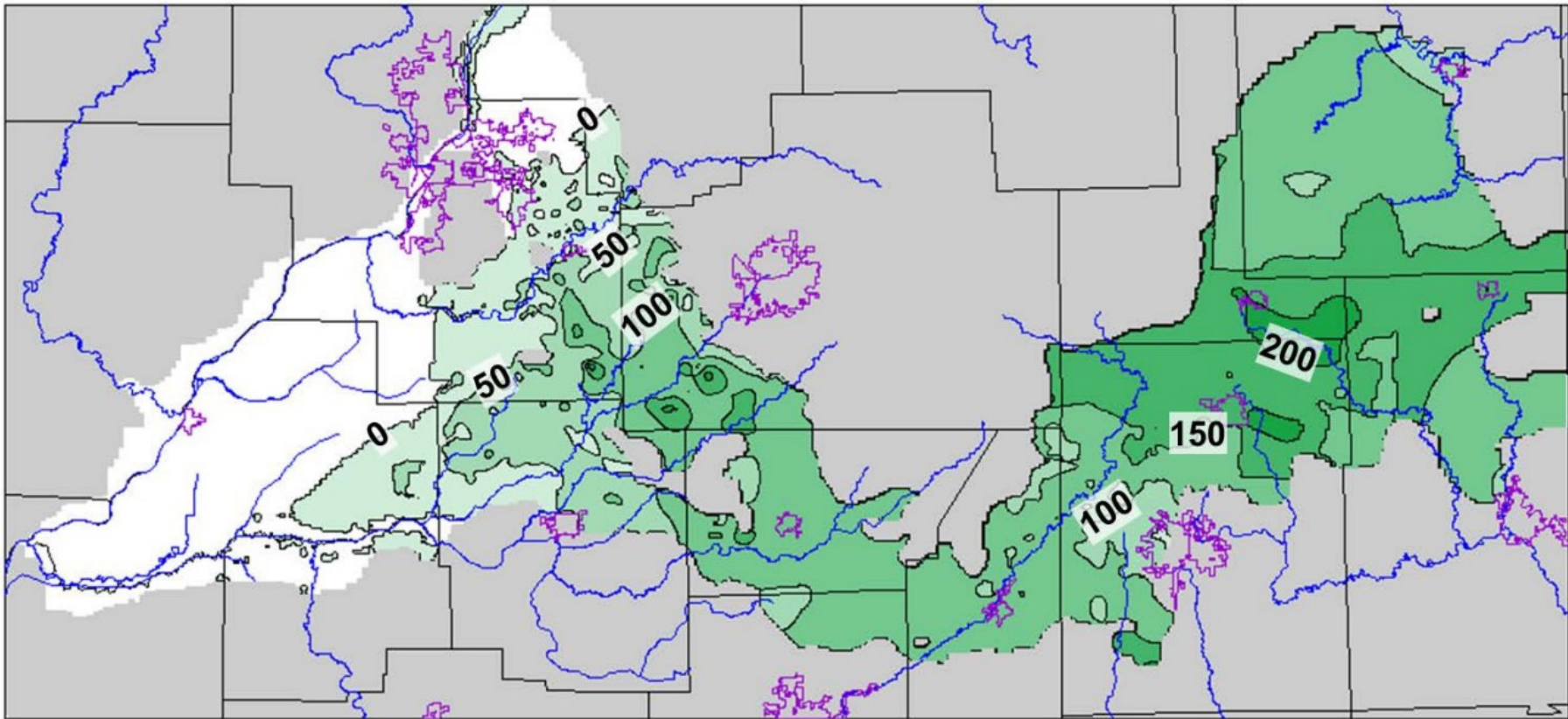
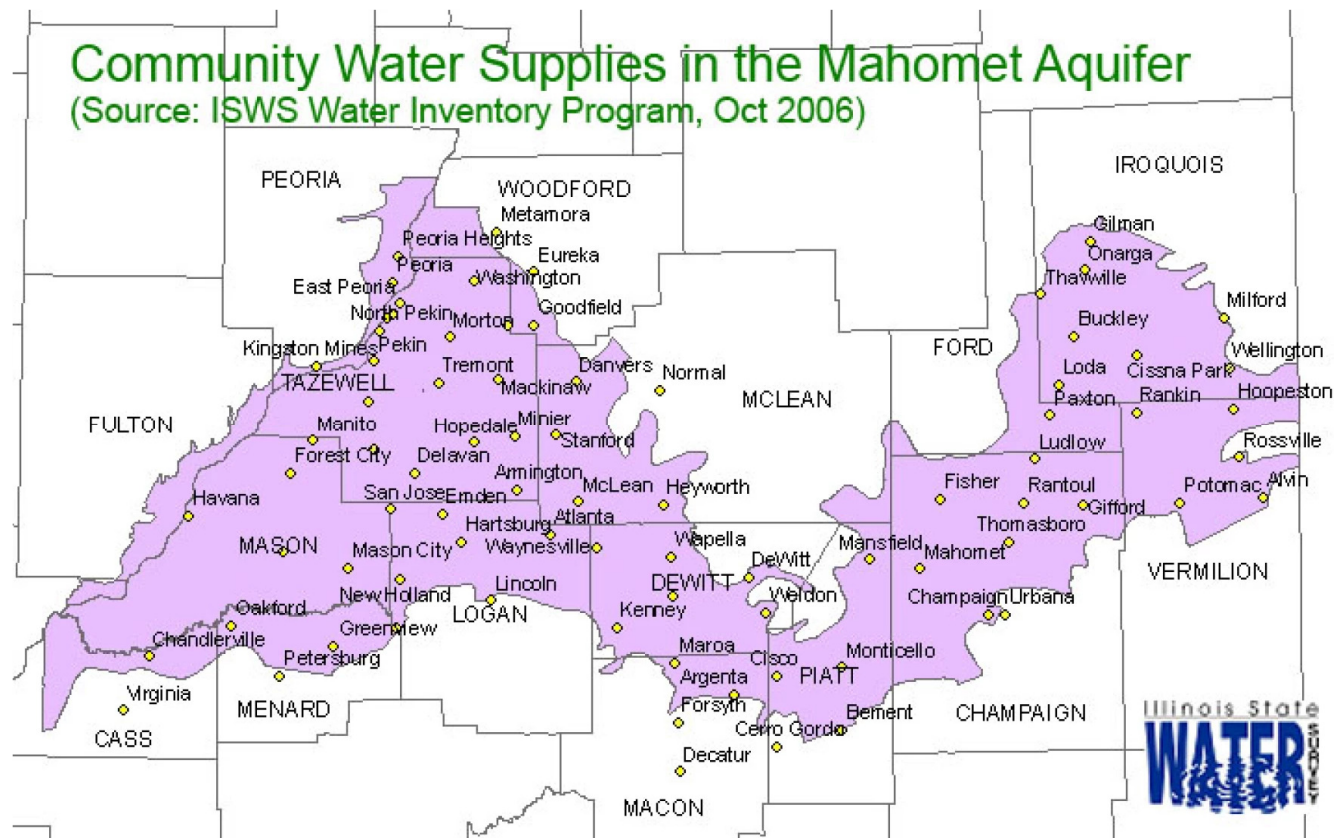


Figure 19. Height of the potentiometric surface of the Mahomet Aquifer above the top of the Mahomet sands. Unconfined areas are not shaded.

# Could Drinking Water be at Risk?



# Are We Risking a Precious Resource?

The screenshot shows a web browser displaying a ScienceDirect article. The browser address bar shows 'sciencedirect.com'. The ScienceDirect logo is in the top left, and 'Journals & Books' is in the top right. Below the logo, there are navigation buttons: 'Access through your institution', 'View Open Manuscript', and 'Purchase'. The article title is 'The water footprint of carbon capture and storage technologies' from 'Renewable and Sustainable Energy Reviews', Volume 138, March 2021, 110511. The authors listed are Lorenzo Rosa, Daniel L. Sanchez, Giulia Realmonte, Dennis Baldocchi, and Paolo D'Odorico. There are links for 'Add to Mendeley', 'Share', and 'Cite'. A 'Referred to by' section shows a corrigendum to the article. The left sidebar contains links for 'Article preview', 'Abstract', 'Introduction', 'Section snippets', 'References (117)', and 'Cited by (65)'.

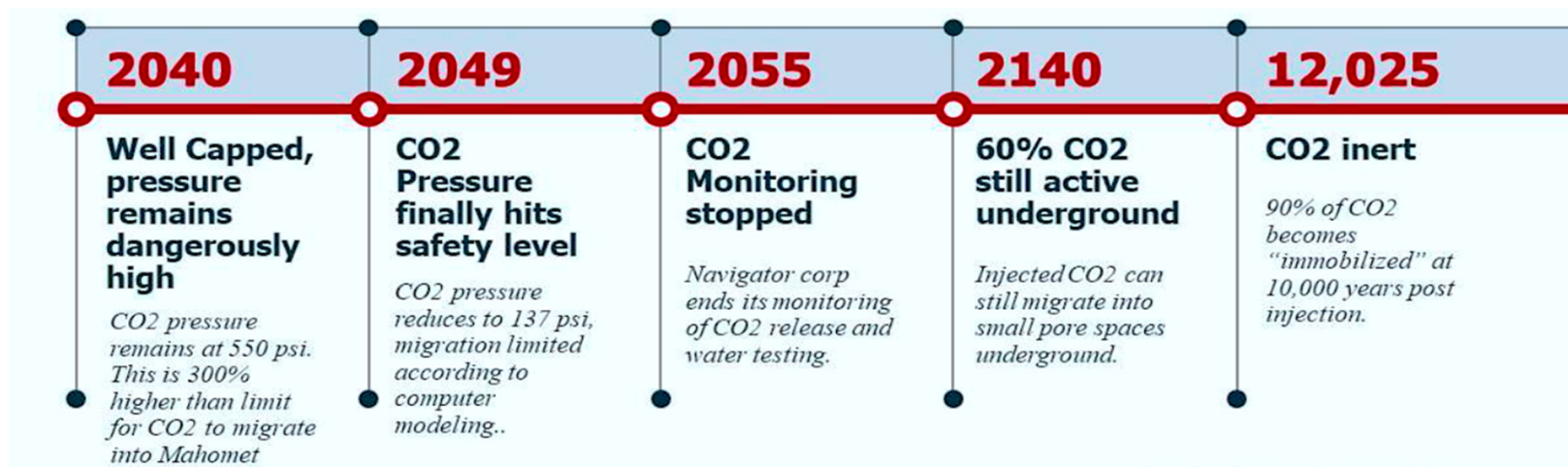
“Large scale deployment of carbon capture and storage could double the water footprint of humanity.”

“Bioenergy with carbon capture and storage is the technology that has the highest water footprint per tonne CO<sub>2</sub> captured.”

“There are already reasons of profound concern about whether the future food, energy, and fiber needs can be met using the limited freshwater resources of the Planet. The projected water requirements from CCS are of paramount concern and should be accounted for in the development of future climate policies.”

# How Long Does Everything Need to Hold?

Sample timeline for CO2 Stability taken from the Navigator proposal:





# Will Nature Cooperate?

Illinois has **two active seismic** areas, both of which can produce significant earthquakes:

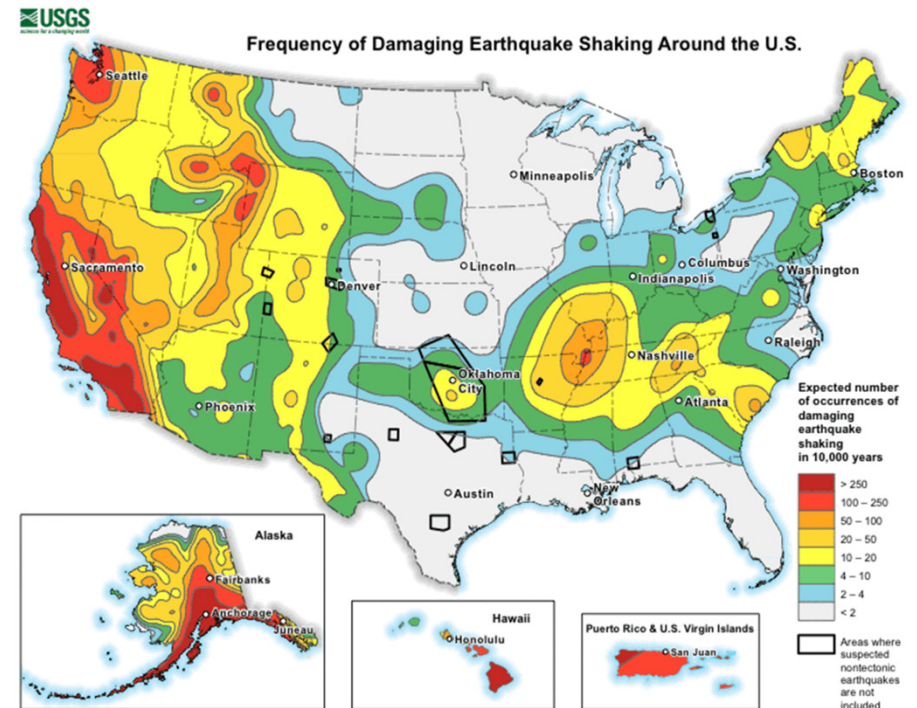
- New Madrid Seismic Zone
- Wabash Valley Seismic Zone

Illinois experienced five earthquakes over 2.5M since September of last year

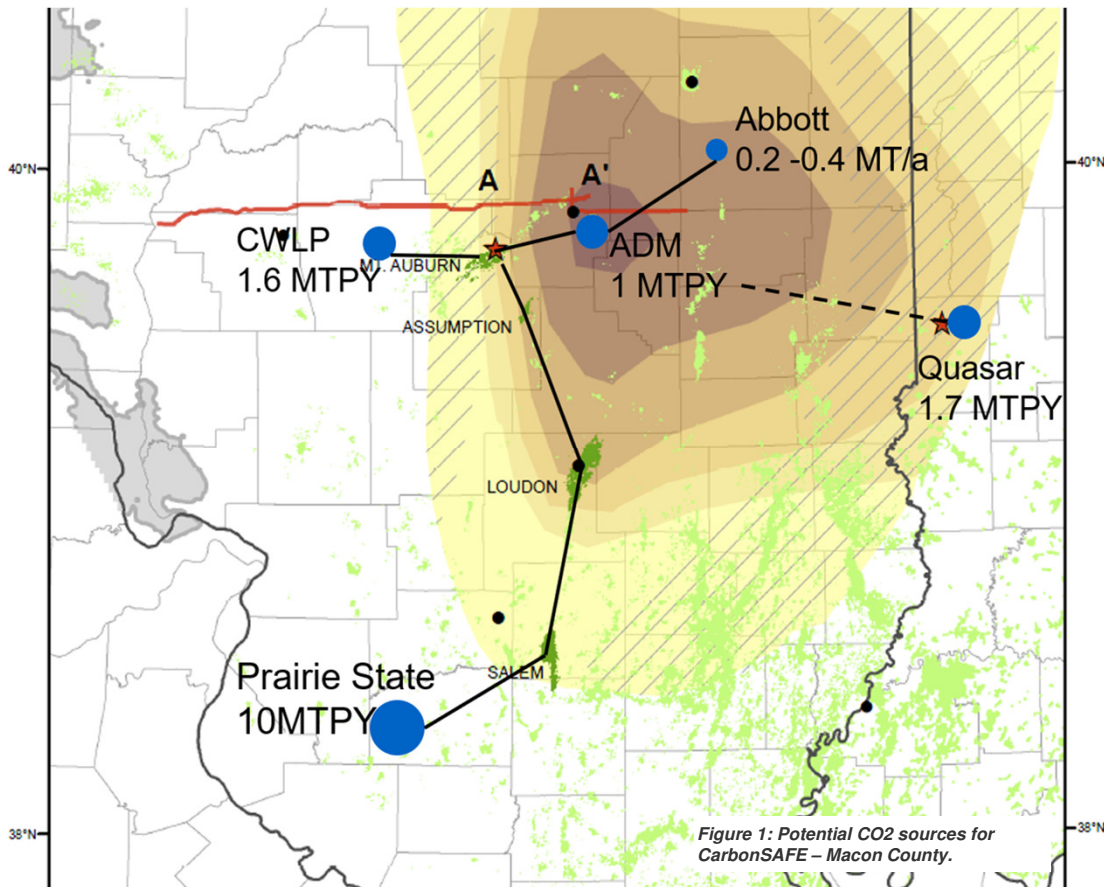
Injection of CO<sub>2</sub> also **can induce** earthquakes

Class VI permitting does not address induced earthquakes

Earthquakes, whether natural or induced, could damage wellbores or fracture rock, creating pathways for CO<sub>2</sub> to escape confinement



# We are All Searching for Answers ...



## CCS Studies Ongoing

The Illinois State Geological Survey at the University of Illinois is working with several partners to determine site suitability for CCS for storing 50MT CO<sub>2</sub> over a 30 year period in the Mt. Simon Sandstone reservoir in Macon and Christian Counties

They say they can predict storage capacity **within ± 30 percent**

Projects under review by the US EPA would store nearly 250 MMT CO<sub>2</sub> over 30 years

How can we know this is safe and without risk?

<https://www.netl.doe.gov/projects/project-information.aspx?k=FE0029381>

# What Does This Mean for Tazewell County?

# Sequestration Has Some Familiar Concerns



## **Above-Ground Equipment**

- Decompression equipment and injection wells
- Site-level monitoring well types (leakage, seismic, water quality, etc.) and locations
- Fencing and security
- Cameras and alarms systems
- Warnings (signs, flags, reflectors, tape)
- Noise levels

# Current Regulations are Piecemeal

- EPA class VI permits for the injection wells don't include scenarios related to pipeline malfunction
- ICC certificates of authority don't consider scenarios related to decompression and injection well malfunctions
- **This is where Land Use policy comes in**, taking a comprehensive approach – looking at adjacent properties, public health and safety, property use and value, etc.

## *Tazewell Special Use Code*

- a. Situated to minimize adverse effects on adjacent properties.*
- b. Not be detrimental to or endanger the public health, safety of the neighboring vicinity.*
- c. Not be injurious to the use and enjoyment of other property in the immediate vicinity.*
- d. Not substantially diminish and impair property value within the neighborhood.*
- e. Ensure adequate utilities, access roads, drainage and other necessary facilities have been or are being provided.*
- f. Minimize traffic congestion and hazard on the public streets.*
- g. If located one-half mile or less from a livestock feeding operation, will not prevent its operation or expansion*
- h. The Special Use is consistent with the existing uses of property within the general area of the property in*

# Sequestration Site Equals More Health & Safety Risk

**Navigator Pipeline Plume Study**  
**Number of Feet From Pipeline by CO2 PPM**  
 ICC Docket 23-0161

CO2 ppm →	105,000 PPM	63,000 PPM	40,000 PPM	30,000 PPM
Pipeline Diameter ↓				
8"	417'		1855'	2753'
16"				3644'
20"	1029'		2920'	4250'

**Death** at levels > 100,000 PPM

**Unconsciousness** at 50-70,000 PPM

**Immediate danger to life and health**, including confusion and impairment, at 40,000 PPM (NIOSH std)

Industrial Short-Term Exposure Limit (STEL) says cannot exceed 15 minutes at 30,000 PPM (OSHA std)

# Sequestration Blocks Many Other Uses

Fierce public opposition and negative perceptions will be a caveat for many investors, limiting

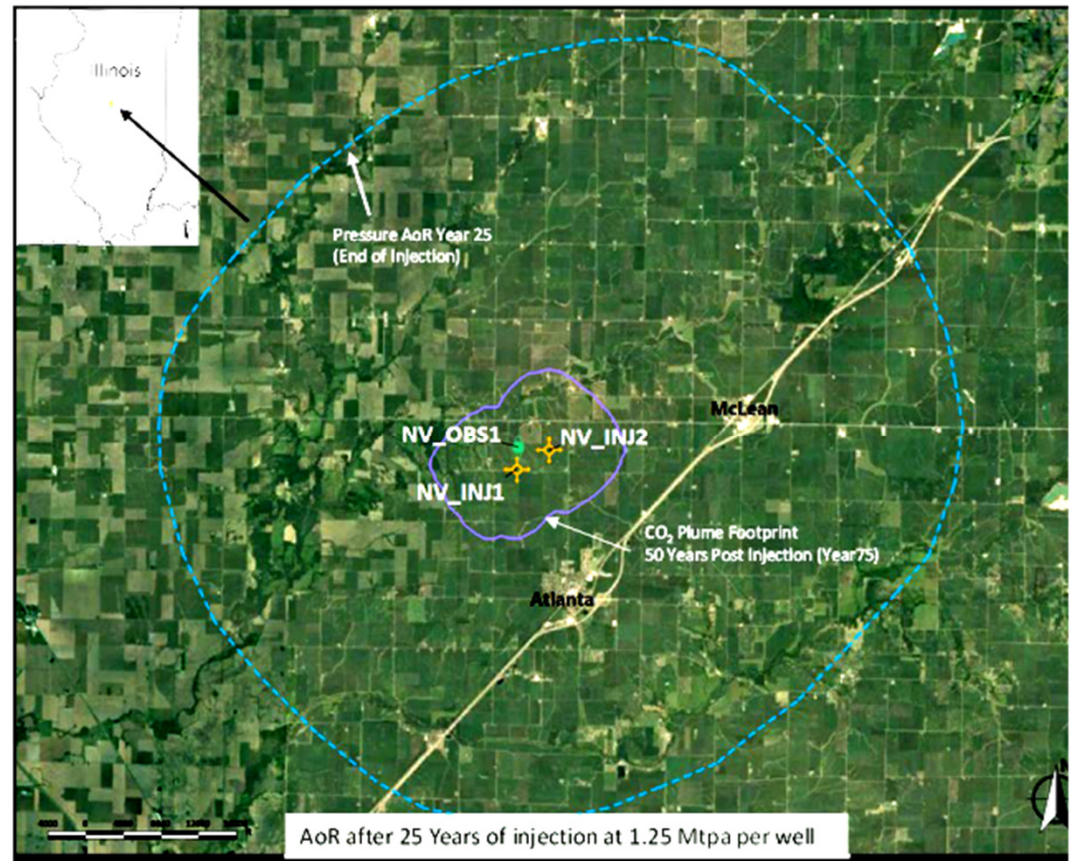
- Future residential development
- Building of schools, churches, restaurants, etc.
- Purchase of land for recreational use

Concerns about ag productivity and water availability will likely discourage

- Specialty crop development
- Inclusion in field trials

# No Protection for Adjacent Property Owners' Rights

- **Only** landowners that receive CO<sub>2</sub> will receive payment
- Injected CO<sub>2</sub> will push brine into neighboring pore space
- There is **NO** compensation for neighboring landowners
- Landowners in the area of review would not be able to lease their pore space for any other purpose or receive future financial gain





# Carbon Schemes Render Property Uninsurable



Dear Mr. and Mrs. Lownik,

Thank you for your liability coverage inquiry into the Navigator CO2 pipeline that is expected to run through your property. There is specific exclusions for liability protection involving the release of any contaminants per the following policy language:

Coverage L (liability) does not apply to:

**Bodily injury or property damage** arising out of the actual, alleged, or threatened presence, discharge, dispersal, seepage, migration, release, escape of, or exposure to contaminants or pollutants at or from any source or location.

We also do not cover:

Any loss, cost, or expense arising out of any request, demand, order, or statutory or regulatory requirement that any insured or others test for, monitor, clean up, remove, contain, treat, detoxify, neutralize, remediate, dispose of, or in any way respond to or assess the effects of contaminants or pollutants;

Any loss, cost, or expense arising out of any claim or suit by or on behalf of a governmental authority of damages because of testing for, monitoring, cleaning up, removing, containing, treating, detoxifying, neutralizing, remediating, disposing of, or in any way responding to or assessing the effects of contaminants or pollutants;

While I am personally not privy to any proposed hold harmless agreements or the contract between the pipeline owners and yourselves; regardless of any agreements in place, there is significant personal liability exposure for yourselves while using your land for farming operations, for your own enjoyment and for your benefit renting the land out for others to do the same.

*For example, if you or your tenants or even someone without permission attempts to dig, plow, trench and pierces the pipeline causing a leak, the resulting damage may be argued to be your responsibility.*

As time passes, nearby landowners may change hands, the pipeline owners and operators may change, future technology may render the pipeline useless or ineffective. All of these factors among others, increase the potential that you may be held personally liable in the future for cleanup, removal and other activities that could cause damage as a result of this pipeline being installed.

As history has proved, any pipeline has a chance to fail, leak and seep resulting in significant damage to life and property. To place this type of risk or burden upon unwilling landowners, like yourselves, is tantamount to placing a risk to your livelihood without your permission.

In summary, having a pipeline running through your property, carrying CO2, a pollutant, subjects you to substantial uninsurable exposure.

Sincerely,

Joe McCollum, CPCU  
State Farm Agent  
712-662-7817

From: [REDACTED]  
Date: Fri, Feb 16, 2024 at 11:46 AM  
Subject: RE: Speech  
To: Sally Lasser <sallylasser917@gmail.com>

ICC Docket No. 23-0708  
SOIL Exhibit 8.01

To whom it may concern,

Sunday, 11/13/2023, Ms, Lasser reached out to me with concerns regarding the CO2 sequestration and pipelines proposed for her land and the surrounding area.

Her concerns were on if she would be insurable if this were to take place on her property. I reached out to my UW team, and went over her concerns.

Based on their response, this is a risk they would not want to take on, or would make her property ineligible to have continued coverage.

I passed that info along to Ms. Lasser she could present to you with some confidence that this would make her property, uninsurable with her current carrier, and couldn't speak for other carriers.

Kind regards,



**#DreamFearlessly**

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# Recommendations

1. Put a moratorium on all carbon capture, pipelines and sequestration until the dust settles
2. Don't be pushed into establishing some arbitrary setback. The setbacks issue is being addressed by the Illinois legislature right now. The updated PHMSA regulations may open the door to science-based setbacks depending on what type of modeling they require as part of the new regulations expected in the fall.
3. Stick to your tried and true zoning approach:
  - A. Evaluate using the basic special use permit criteria – especially public health and safety considerations and impact on adjacent properties
  - B. Create a comprehensive checklist of documents and disclosures
  - C. Develop a Landowner Consent Form along the lines of the one you already use so participating landowners have another view of what's at stake