



# LAPIS

PROJECT BIG RIVER – SPRING 2026 UPDATE

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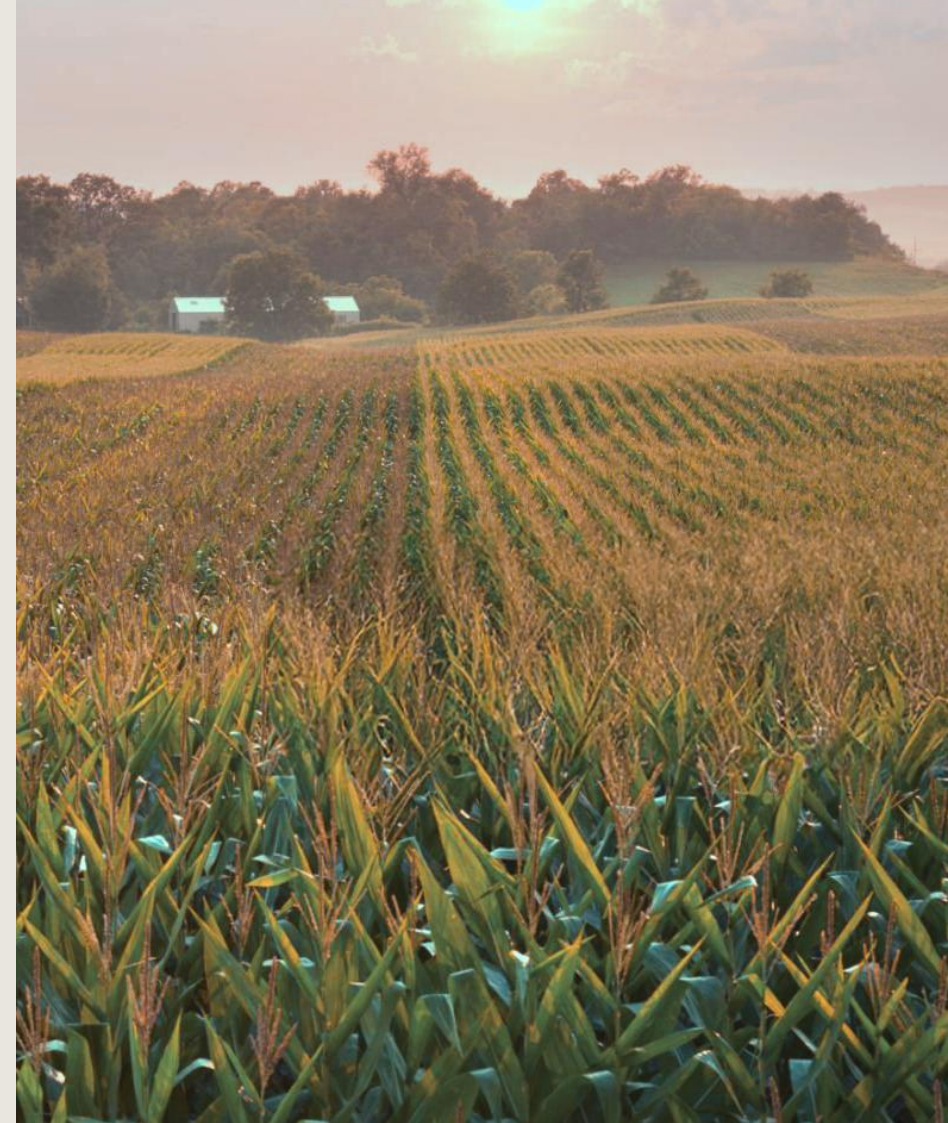
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# ABOUT LAPIS AND PROJECT BIG RIVER

# BIG RIVER RESOURCES AND GALVA



## GALVA: PRE-BIG RIVER

In 1854, Galva was founded along the Burlington railroad to connect the region's agricultural economy with broader markets.

Still, local farmers had to coordinate shipping and find buyers, eating away at profits.



## GALVA: WITH BIG RIVER

Big River Resources entered Galva in 2009, creating a steady market for local farmers and a critical source of income for Galva and Henry County.

Today, the plant is one of the area's largest industrial employers and Galva's single largest industrial taxpayer.



## GALVA: WITH BIG RIVER + CCS

Big River is taking steps to stay competitive in the ethanol industry by introducing carbon capture and sequestration. Plants that adopt CCS can access new markets, protect jobs, and continue serving farmers + communities. This fosters continued investment in the future of Galva.

## BIG RIVER RESOURCES: GALVA ECONOMIC IMPACT

LARGEST TAXPAYER

in Galva

45 MILLION BUSHELS

of corn processed per year

100% LOCALLY GROWN

in a 60-mile radius



## WHAT WE DO

Lapis develops, constructs, and operates Carbon Capture, Utilization, and Storage (CCUS) projects, providing solutions for emitters looking to decarbonize industrial operations. Our technical expertise allows Lapis to utilize a dual approach to CCUS project development:

- ▶ Identifying strategic sites for sequestration
- ▶ Providing custom carbon solutions tailored to emitters' needs

**CAPTURE**  
CO<sub>2</sub> capture solutions customized to each industry partner

**TRANSPORT**  
Safe movement of compressed CO<sub>2</sub> to storage sites or utilization partners

**UTILIZE**  
Utilization services to provide CO<sub>2</sub> to food and beverage industry partners

**STORE**  
Permanent CO<sub>2</sub> storage, monitoring, and site closure in line with Class VI EPA standards

# ABOUT PROJECT BIG RIVER

Lapis is working with Big River Resources to sequester more than 725,000 metric tons of carbon dioxide (CO<sub>2</sub>) per year near the company's Galva, Illinois ethanol plant. CO<sub>2</sub> will come from the company's Galva plant, and from its West Burlington, Iowa plant via truck.

Deploying carbon capture technology enables Big River Resources to gain more value, which in turn facilitates the company's long-term growth, protects jobs, and promotes a strong local economy.

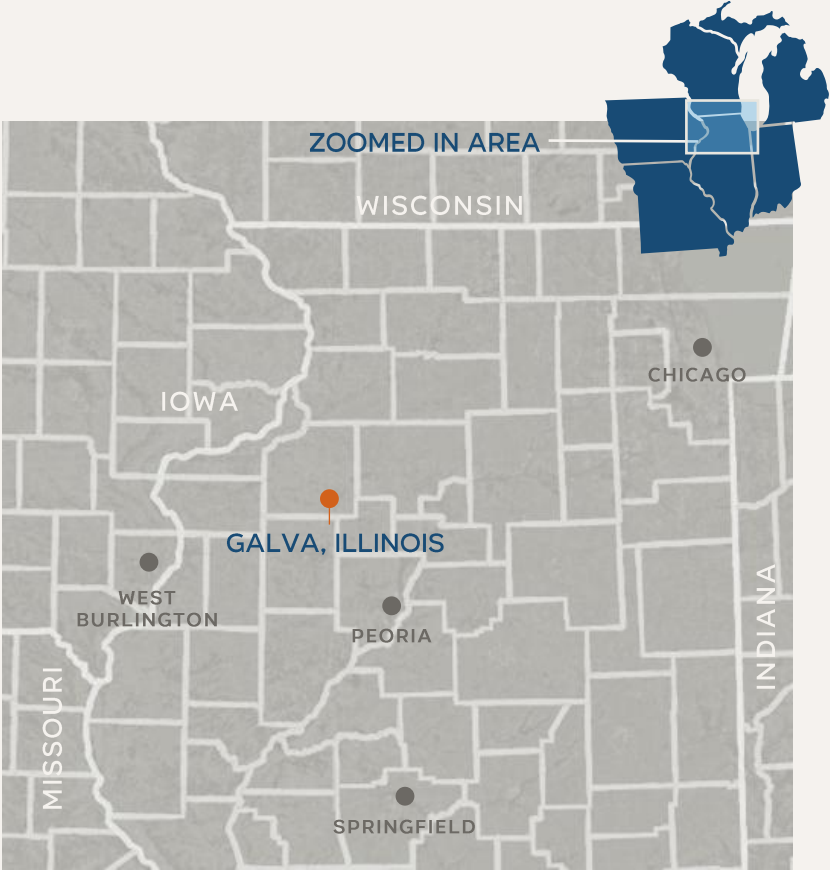
PARTNER  
BIG RIVER RESOURCES

SERVICE  
CAPTURE, TRANSPORTATION, AND STORAGE

VOLUME  
725,000+ METRIC TONS OF CO<sub>2</sub> PER YEAR\*

CLASS VI STATUS  
SUBMITTED

PROJECT TYPE  
NEAR-PLANT, MULTI-LANDOWNER SOLUTION



2024

Project development agreement signed

2025

Drilled stratigraphic test well to gather site-specific data

Q1 2026

Class VI submission

2027

Final Investment Decision expected

2028

First injection target

\* This represents our contracted volumes as of February 2026; our Class VI permit is for 1.2 million metric tons per year to enable potential future Big River Resources expansion.

# PROJECT DIFFERENTIATORS AND FOOTPRINT

## ▶ LANDOWNER SUPPORT

Our team took more than a year to meet with and gain the trust and support of local landowners before submitting a permit to inject.

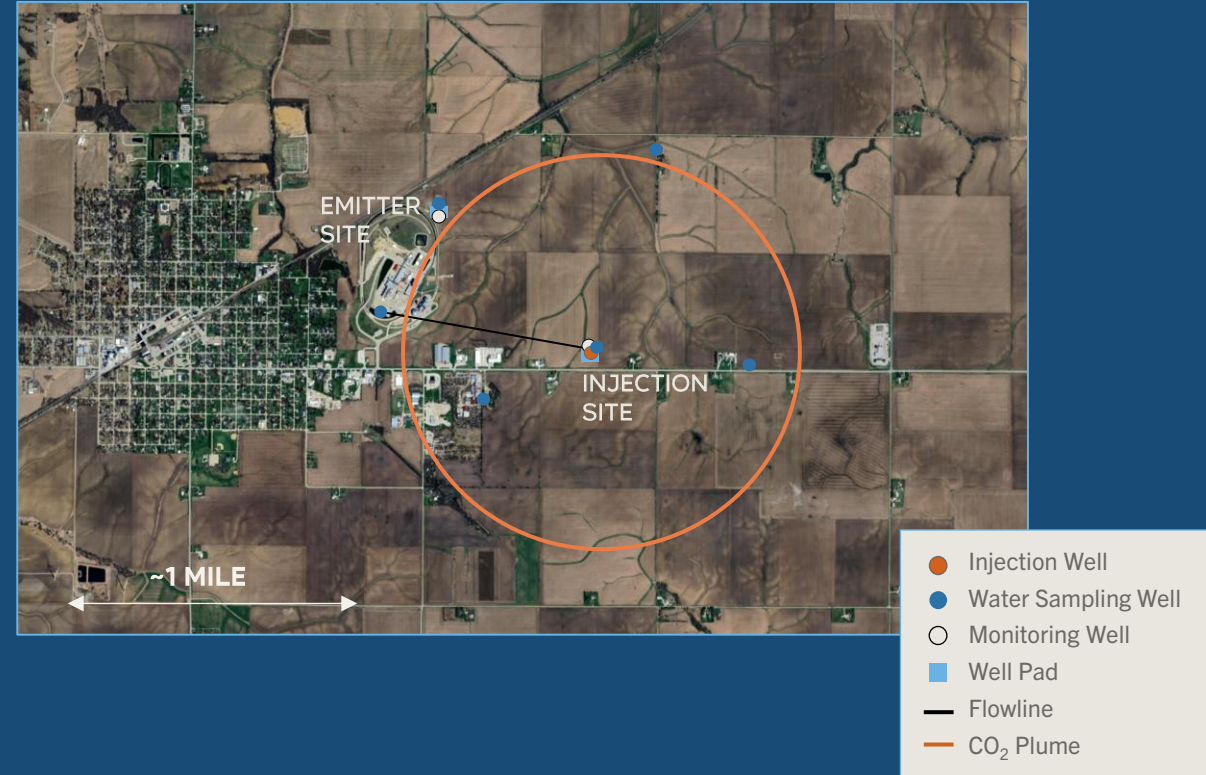
## ▶ A MORE COMPETITIVE BIG RIVER

Carbon capture and storage gives Big River Resources the opportunity to gain *more value* for its ethanol. This keeps Big River competitive, and in turn, allows the company to support jobs and continue to invest in Galva.

## ▶ MINIMAL PIPELINE

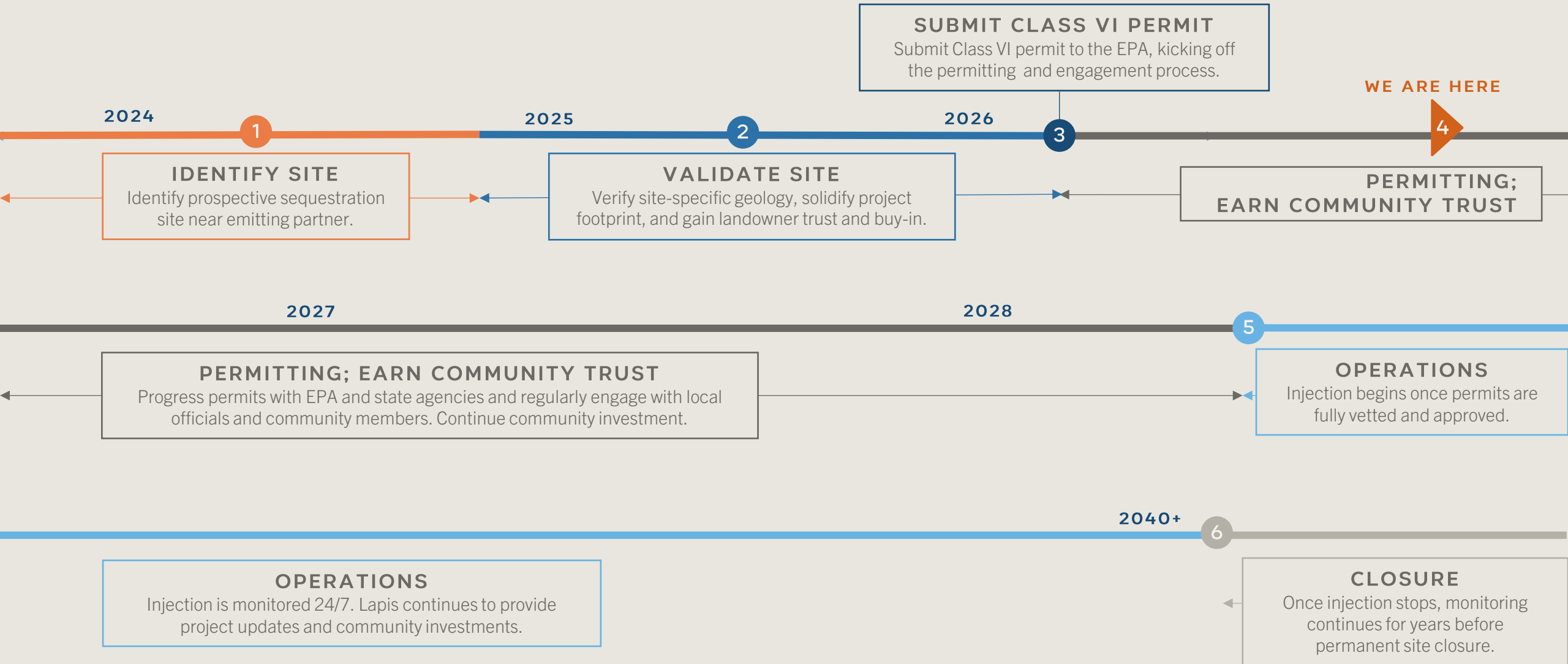
Our project is designed to minimize pipeline length, including by receiving CO<sub>2</sub> from Big River's West Burlington plant by truck. This CO<sub>2</sub> and the CO<sub>2</sub> from Big River Galva will travel from the plant to the injection site through a flowline that is less than one mile. The flowline will be installed using Horizontal Directional Drilling (HDD), a technique that limits land disruption.

## APPROXIMATE PROJECT AREA



# PROJECT BIG RIVER TIMELINE

Standing up a CCS project is a lengthy process and includes engagement on multiple fronts. We anticipate injection will begin in 2028.

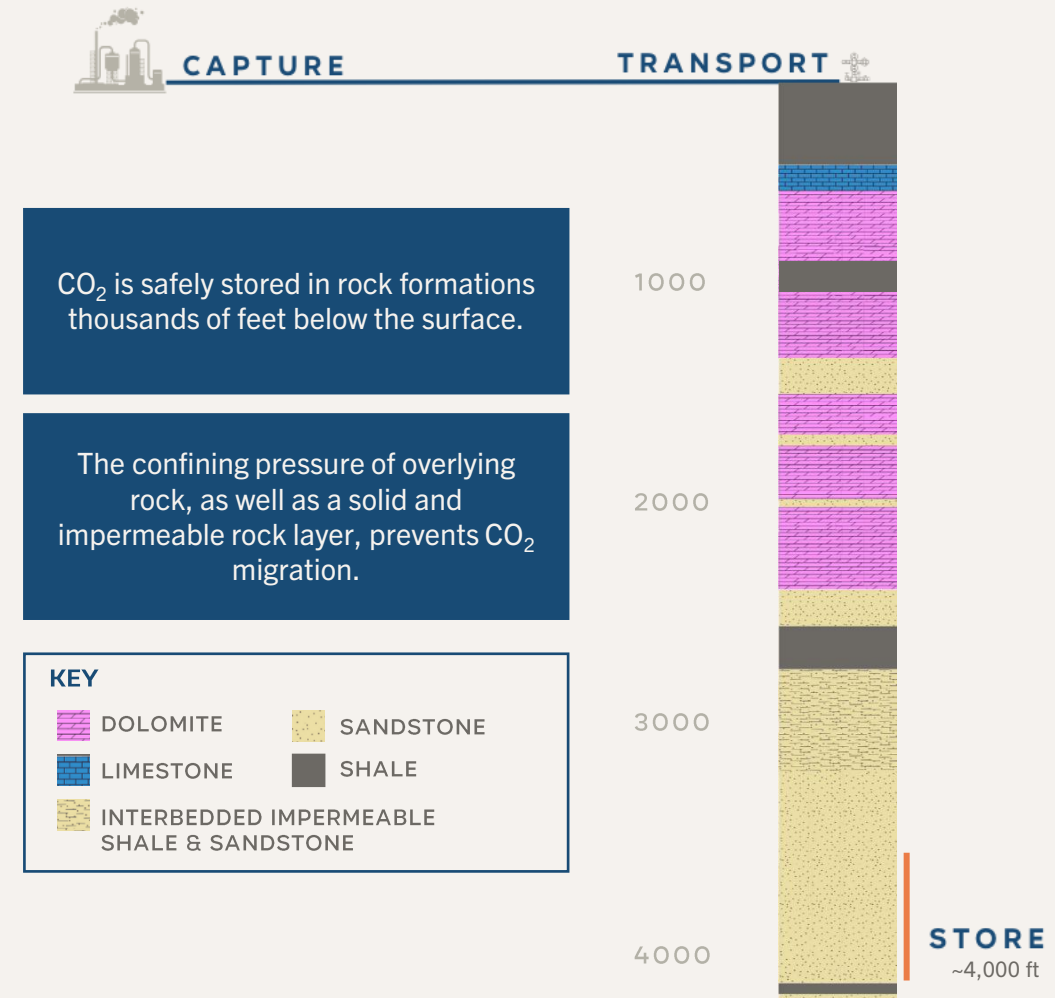


# ABOUT CCS

# WHAT IS CCS?

Carbon Capture and Storage (CCS) is the process of separating then permanently and safely storing CO<sub>2</sub>.

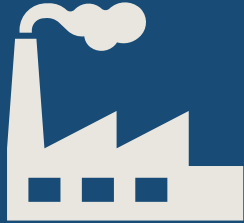
- 1 CAPTURE**  
Separate CO<sub>2</sub> from other gases produced at large industrial facilities.
- 2 TRANSPORT**  
Compress and transport CO<sub>2</sub> to a suitable site for geological storage.
- 3 OPERATE**  
Inject and rigorously monitor injection, CO<sub>2</sub> movement, seismic activity, and water quality in accordance with EPA and industry standards.
- 4 SAFE, PERMANENT STORAGE**  
CO<sub>2</sub> is stored deep underground in sandstone rock formations thousands of feet below the surface. The site is monitored 24/7 throughout operations and for years post-operations per EPA standards.



Note: This is a simplified illustration.

# THE CARBON CAPTURE PROCESS

1



During the ethanol production process, carbon dioxide is separated. Its temperature is adjusted and water is removed.

2



Once captured, CO<sub>2</sub> is compressed to a higher pressure.

3



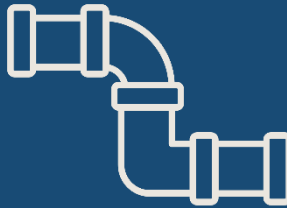
All remaining water is removed from CO<sub>2</sub> to make sure it's extremely dry. Dry CO<sub>2</sub> helps prevent potential corrosion.

4



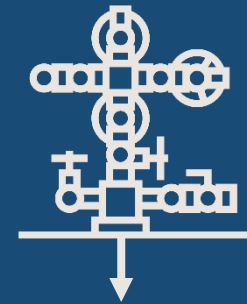
CO<sub>2</sub> undergoes additional compression to reach “supercritical phase”—this allows it to move more like a liquid. It's now ready to be transported for permanent, safe storage.

5



CO<sub>2</sub> from Big River's West Burlington plant will be moved by truck to the Galva plant. CO<sub>2</sub> from both facilities will then be transported through an underground flowline to a Class VI well where it will be injected underground.

6



CO<sub>2</sub> is injected thousands of feet below ground, where it's prevented from moving upwards by impermeable shale. Over time, CO<sub>2</sub> stops moving.

# PROTECTIVE TOP SEALS AND INJECTION ZONES



## SHALES: SEAL

Shales protect Underground Sources of Drinking Water (USDW) from CO<sub>2</sub> migration. These rocks are impermeable—CO<sub>2</sub> cannot move through them.



## SANDSTONES: INJECTION ZONE

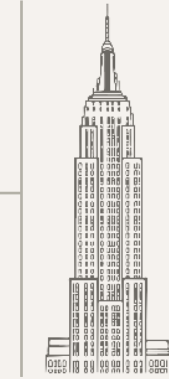
Sandstone is a highly porous rock—imagine a sponge—with tiny gaps between sand grains filled with saline (non-potable water, i.e., not safe for drinking). During injection, CO<sub>2</sub> displaces this salty water and enters the sandstone.



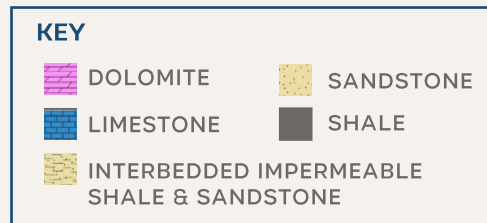
## CO<sub>2</sub> STORAGE ZONE

For Project Big River, we're targeting an injection zone that is more than 3,000 feet below the surface. CO<sub>2</sub> is stored at a depth that's similar to stacking more than two Empire State Buildings below the ground.

EMPIRE STATE BUILDING  
1,454 FT.



1000



2000

3000

4000

STORE  
~4,000 ft

# CCS: A TESTED TECHNOLOGY

## CAPTURE

- Capture technology **BEGAN IN THE 1930S**.
- At least **160 MILLION METRIC TONS OF CO<sub>2</sub>** are captured **EVERY YEAR** for use in industries such as food, beverage, and fertilizers.
- CCS is **HEAVILY REGULATED** by the EPA.

## TRANSPORT

- There are **5,300+ MILES OF CO<sub>2</sub> PIPELINES** in the U.S.
- In the last 50 years, pipelines have transported **OVER 500 MILLION** metric tons of CO<sub>2</sub>, with no related fatalities.
- **TRUCKING** is another form of transportation, with thousands of trucks carrying CO<sub>2</sub> across the country every day.

## STORE

- Since 1996, **MORE THAN 380 MILLION METRIC TONS** of CO<sub>2</sub> have been safely and permanently stored using CCS.
- The U.S. has the **LARGEST NUMBER OF CCS PROJECTS IN DEVELOPMENT** in the world.
- CCS operators must employ **ROBUST, CONTINUOUS MONITORING** programs.

- ▶ SOURCE: GLOBAL CCS INSTITUTE
- ▶ SOURCE: CLEAN AIR TASK FORCE
- ▶ SOURCE: CARBON ACTION ALLIANCE

# CLASS VI PERMITTING

Class VI permits are governed by the EPA and required to inject CO<sub>2</sub> underground; Illinois also has its own regulatory framework, one of the leading U.S. states to do so.

CLASS VI WELLS ARE SUBJECT TO A RIGOROUS PERMITTING PROCESS.

Class VI wells—the type of well needed to inject CO<sub>2</sub> underground for safe, permanent storage—are overseen by the U.S. EPA and designed to protect Underground Sources of Drinking Water (USDW).

Class VI wells must meet rigorous standards and take years to obtain. Once the Class VI permit undergoes extensive review, the EPA will issue a draft permit, then open the permit for public comment before granting a permit to construct, followed by a permit to inject.

ILLINOIS INTRODUCED THE SAFE CCS ACT IN 2024, MAKING IT THE LEADER IN STATE CCS REGULATIONS.

The SAFE CCS Act establishes clear requirements related to:

- Underground pore space ownership
- Landowner consent
- The establishment of a Trust Fund to cover costs related to CCS monitoring, remediation, and compensation
- CO<sub>2</sub> pipelines
- Banning the use of CO<sub>2</sub> for enhanced oil recovery

## OUR CLASS VI STATUS

We submitted our Class VI permit application to the EPA in early 2026. We plan to start injection in 2028.

# MONITORING

Class VI wells must have **comprehensive, real-time monitoring** in place **before injection begins**. We plan to monitor through four primary mechanisms:

## 1 SEISMIC MONITORING

24/7, real-time seismic monitoring using remotely controlled seismic devices will monitor CO<sub>2</sub> movement and seismic activity underground.

## 3 IN- AND ABOVE-ZONE MONITORING

We monitor CO<sub>2</sub> pressure and potential upward movement through monitoring wells installed in the plume area.

## 2 PRESSURE MONITORING

Gauges on injection wells allow us to detect pressure changes – which indicate potential leaks – within the wells in real-time.

## 4 WATER WELLS

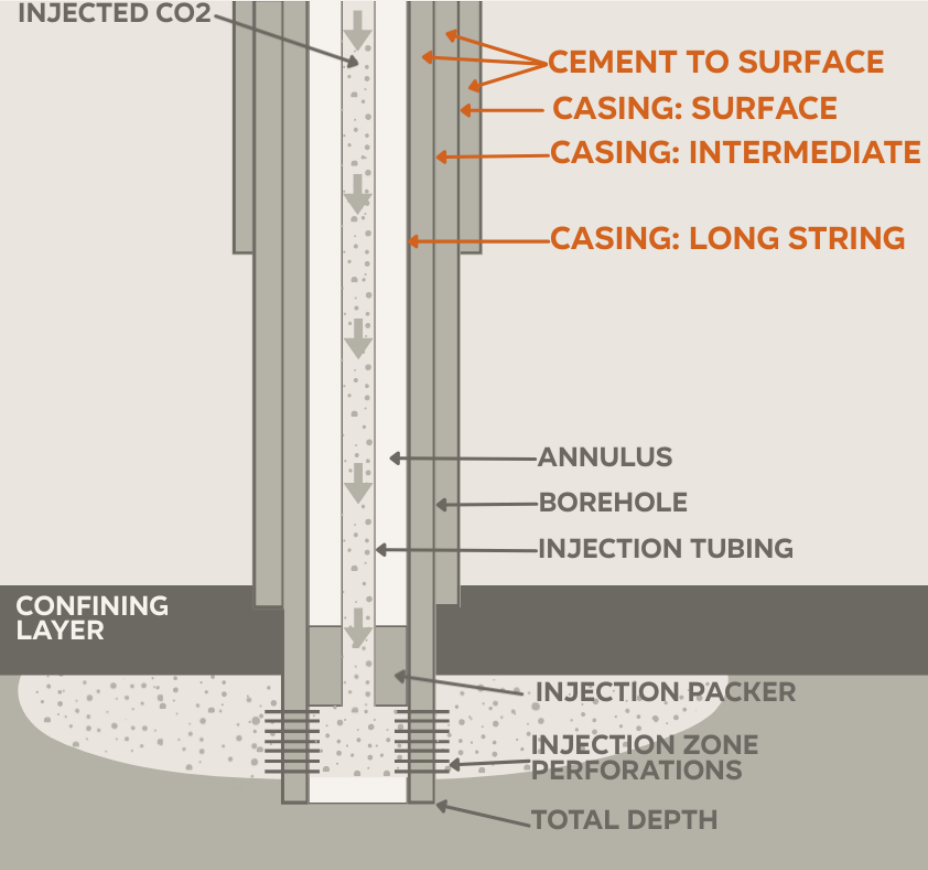
Multiple water wells will be installed to continuously monitor water quality and ensure we protect Underground Sources of Drinking Water.

Our monitoring program will be thorough, ongoing, and iterative in response to CO<sub>2</sub> movement.

# WELL SPECIFICATIONS: CO<sub>2</sub> INJECTION VS. OIL AND GAS

CCS wells are designed to exceptionally high standards—more so than a typical oil and gas well.

## CCS CO<sub>2</sub> INJECTION WELL

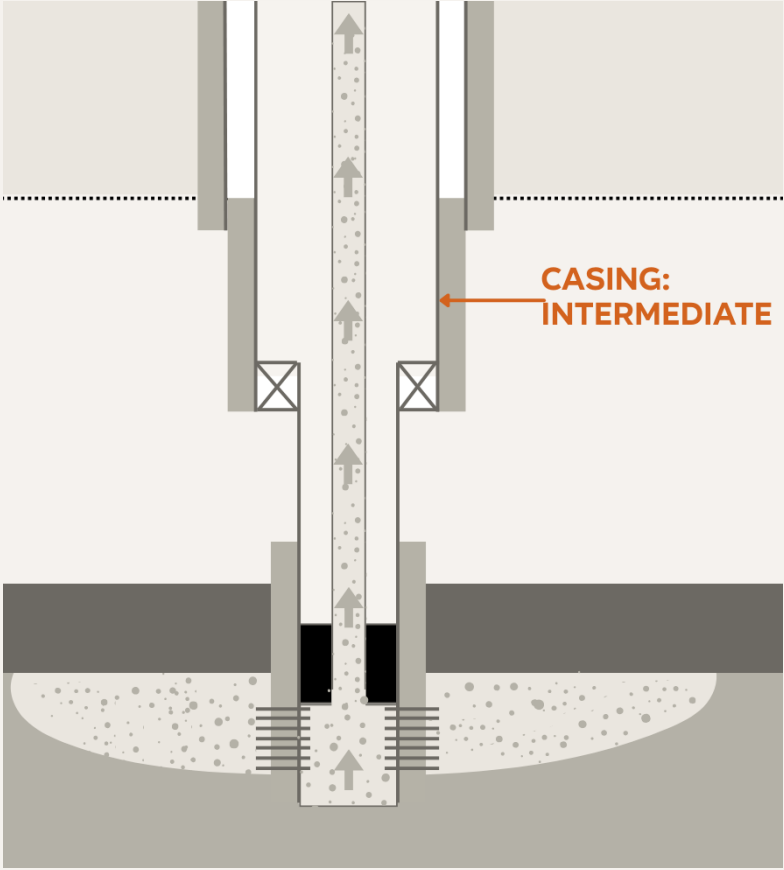


4-8X COST OF A REGULAR OIL AND GAS WELL

- All casing strings extend to surface
- All casing strings are cemented to surface

- Use of corrosion resistant alloy over injection interval
- Use of highly corrosive resistant cement over entirety of well bore surface vs. Portland cement and regular steel casing in an oil and gas well

## TYPICAL OIL AND GAS WELL



# CO<sub>2</sub> TRUCKING

# CO<sub>2</sub> TRUCKING FUNDAMENTALS

## WHY TRUCKING?

We're trucking CO<sub>2</sub> in response to community and landowner feedback to avoid constructing a lengthy pipeline.

CO<sub>2</sub> trucking uses a well-established, safe supply chain already operating across the Midwest using standardized equipment and procedures. Through this supply chain, CO<sub>2</sub> is delivered for food and beverage use (such as breweries, bottlers, and processors). Our project applies the same proven practices.

Trucking helps us meet the needs of Big River while also addressing community concerns. Many CCS projects pursue pipelines to aggregate multiple plants or move much larger volumes. While CO<sub>2</sub> pipelines have an excellent safety record, trucking is a practical alternative.

## TRUCKING SAFETY

CO<sub>2</sub> is transported as a cryogenic (cold) liquid in specialized tanker trucks commonly used in the industrial gas industry. Transport providers must comply with U.S. Department of Transportation hazardous materials regulations, including vehicle standards and driver training.

CO<sub>2</sub> is non-flammable and non-toxic. Compared to many other chemicals routinely transported on public roads, it does not pose fire or significant human health risks. Safety planning therefore focuses on monitoring, ventilation, and coordination with local emergency responders—standard practices already used today.

The project will require its trucking partner to maintain robust safety and emergency response protocols, coordinated with local first responders and transportation agencies.

# CO<sub>2</sub> TRUCKING SAFETY

## CO<sub>2</sub> PROPERTIES

- CO<sub>2</sub> is not toxic, corrosive, or flammable. It disperses quickly, has no visible impacts, and is unlikely to impact people or wildlife.
- CO<sub>2</sub> releases pose a concern only when released at high volumes and in specific, low-lying areas where it can collect.

## EXAMPLE CO<sub>2</sub> TRUCK



Source: CryoGas

# PROJECT BIG RIVER CO<sub>2</sub> TRUCKING PLANS

Our Galva CO<sub>2</sub> storage site supports two Big River Resources ethanol plants: Galva, IL and West Burlington, IA. Volumes from West Burlington will be trucked to Galva.

1



## CO<sub>2</sub> LOADED IN WEST BURLINGTON

CO<sub>2</sub> from Big River Resources' West Burlington ethanol plant is loaded in liquid form into cryogenic tanker trucks at very low temperatures and ready to transport.

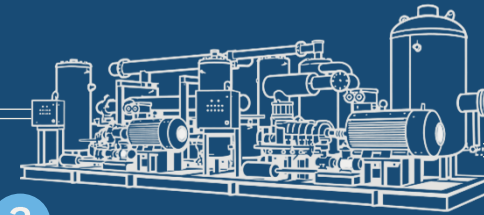
2



## CO<sub>2</sub> OFFLOADED IN GALVA

Upon arrival at Big River's Galva facility, CO<sub>2</sub> is offloaded into on-site storage tanks.

3



## CO<sub>2</sub> HEATED AND PRESSURIZED

Liquid CO<sub>2</sub> from West Burlington is heated and pressurized to similar specifications as the captured CO<sub>2</sub> from the Galva facility.

4

## CO<sub>2</sub> FROM GALVA AND WEST BURLINGTON COMBINED AND TRANSPORTED

CO<sub>2</sub> is transported to the injection site less than a mile from the Galva plant through an underground flowline.



5



## CO<sub>2</sub> SEQUESTERED

CO<sub>2</sub> is injected, then permanently and safely stored thousands of feet underground.

# COMMUNITY BENEFITS AND ENGAGEMENT

# EARNING & MAINTAINING COMMUNITY TRUST

At Lapis, we know that we must *earn* the trust of the communities where we operate. We have in-house team members who work with local communities to provide in-person opportunities to learn about Lapis and CCS and identify community priorities for social investment.

## COMMUNITY INVESTMENT

We invest in the people, organizations, and causes that make Galva a vibrant, thriving community. We focus our giving on emergency response, education, and local economic development.

*In early 2026 we made two \$10,000 donations to local organizations making a difference in Galva and Henry County:*

- **Levitt AMP Galva Music Series**
- **Freedom House**



*We recently donated \$10,000 to the Levitt AMP Galva Music Series to continue to bring live music (and thousands of spectators) to Galva this summer.*

## LOCAL ENGAGEMENT

We build trust by conducting in-person meetings and information sessions with community members.

Our community outreach approach includes:

- Briefings to City and County officials
- CCS information sessions with community members
- Small group meetings

# CONTACT US

## CONTACT INFO

We will update this deck regularly with relevant information and answers to community member questions. If you have questions or want more information, please reach out:

Email: [projectbigriver@lapiscarbonolutions.com](mailto:projectbigriver@lapiscarbonolutions.com)

Facebook: [Project Big River – Lapis Carbon Solutions + Big River Resources](#)

## MEET WITH OUR TEAM

We're planning regular in-person information sessions at Big River Resources' Galva plant so you can meet our team and get questions answered. [Send us an email if you're interested.](#)

Upcoming visit plans: June 1-2, June 15-16, July 13-14



*Pictured above: Galva Volunteer Fire Department, which Lapis has supported since 2024.*

# Q&A

# SAFETY AND EMERGENCY RESPONSE FAQ

## DO YOU HAVE EMERGENCY RESPONSE PLANS?

Yes. We have already developed emergency response plans tailored to Galva and Henry County and are working with the Henry County Office of Emergency Management (OEM) to further refine these plans, which include risk scenarios, response timelines, and notification plans for local authorities and for the public. We will conduct emergency response drills to test these plans before injection begins.

## ARE YOU WORKING WITH LOCAL EMERGENCY RESPONDERS?

Yes. We are working with the Henry County OEM and with the local Galva Volunteer Fire Department.

## IS CO<sub>2</sub> FLAMMABLE/TOXIC?

No. CO<sub>2</sub> is non-flammable, non-toxic, and only poses health concerns when it collects and displaces oxygen. Because Galva is flat, and because of the small amount of CO<sub>2</sub> in our flowline and in trucks offloading CO<sub>2</sub> at Big River Resources, our initial modeling shows CO<sub>2</sub> would not collect and would instead quickly disperse into the air. Once we complete our dispersion modeling for Galva, we will share results publicly and continue to work with emergency responders to develop and implement robust, location-specific plans.

# WHAT HAPPENED IN SATARTIA?

## INCIDENT SUMMARY

Near Satartia, Mississippi, a Denbury-owned pipeline ruptured after days of heavy rainfall that in turn caused landslides and shifting soil. Satartia is low-lying and downhill of the rupture site, causing CO<sub>2</sub> to collect and dissipate more slowly than is normal, in turn impacting health and vehicle functioning. While there were no related fatalities, the incident caused hospitalizations and evacuations. Lapis has no connection to the incident.

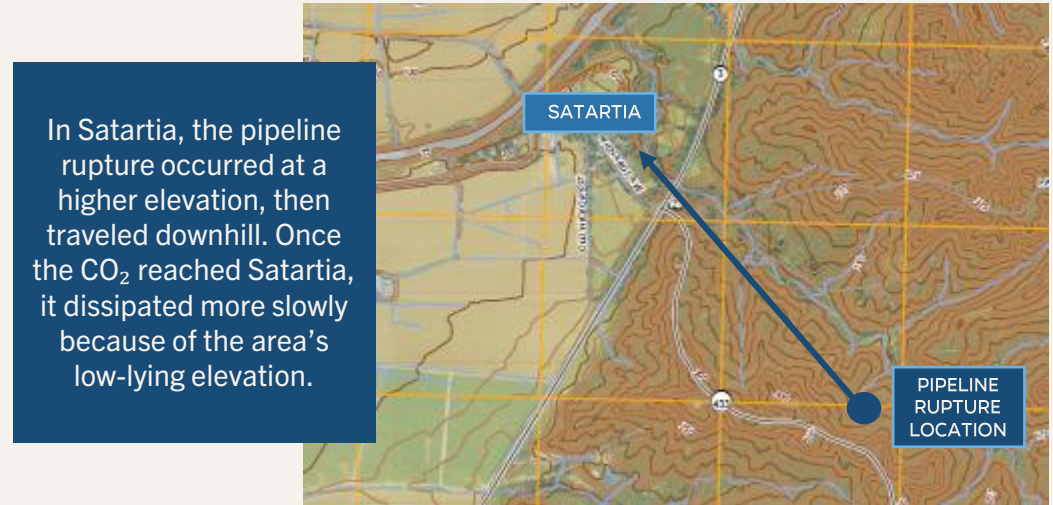
## OUR RESPONSE

It's our standard practice to conduct dispersion modeling before we begin operations. This modeling allows us to predict where CO<sub>2</sub> might travel in a variety of conditions, allowing us to create customized emergency response and notification plans. Once we complete our modeling for Galva, we will share results publicly and continue to work with emergency responders to develop and implement robust, location-specific plans.

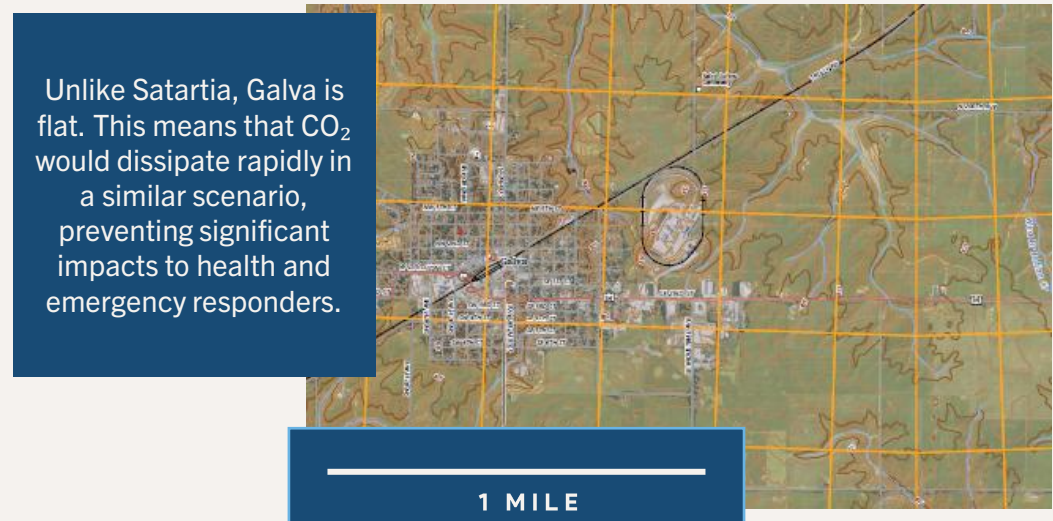
## GALVA FLOWLINE SAFETY

We will have real-time, 24/7 monitoring to detect pressure changes, which would indicate a potential issue. We will also routinely and rigorously inspect our flowline to spot potential issues before they occur. To prevent corrosion, we will also ensure that the CO<sub>2</sub> is *very, very dry* and use corrosion-resistant materials.

### SATARTIA



### GALVA



# WHAT HAPPENED WITH ADM'S CLASS VI WELL IN DECATUR?

In 2023 and 2024, ADM discovered leaks at its Decatur, Illinois CO<sub>2</sub> injection site.

## INCIDENT SUMMARY

The leak at ADM's Decatur CCS project stemmed from a mechanical failure in a monitoring well, not a problem with the geologic seal or storage formation. The storage site—and the monitoring program—performed as intended, and there were no impacts to Underground Sources of Drinking Water (USDW) or public health.

## OUR RESPONSE

We followed the ADM Decatur issue and EPA investigation closely to ensure we captured any lessons learned. After reviewing both EPA's findings and ADM's response, we confirmed that our own design and monitoring practices already align with—and in several areas exceed—current regulatory and industry standards.

## WELL DESIGN AND MATERIALS

ADM's Class VI wells were built prior to EPA's updated guidance on metallurgy and used Chromium-13 steel. All Lapis injection and monitoring wells are designed and constructed using the Chromium-25 alloy, providing superior corrosion resistance and long-term well integrity.

## MONITORING

Lapis will use a robust monitoring program with multiple dedicated monitoring wells—one for the injection zone and one for above the injection zone—to track pressure, temperature, and plume movement in real time. This continuous monitoring enables early detection of any irregularities, as well as swift action.

## WHAT IF LAPIS HAS A SIMILAR ISSUE?

Lapis' operating philosophy is grounded in transparency, safety, and community engagement. In the unlikely event of an issue, we would immediately activate emergency response protocols, coordinate closely with regulators, and communicate openly with local communities to ensure trust and accountability.

# HOW WILL YOU PROTECT OUR WATER?

## GALVA DRINKING WATER SOURCE

In Galva, drinking water comes from aquifers that are thousands of feet above where we plan to inject CO<sub>2</sub>.

## WELL DESIGN

Class VI wells are *specifically* designed to protect Underground Sources of Drinking Water (USDW). These wells are permitted and overseen by the U.S. EPA.

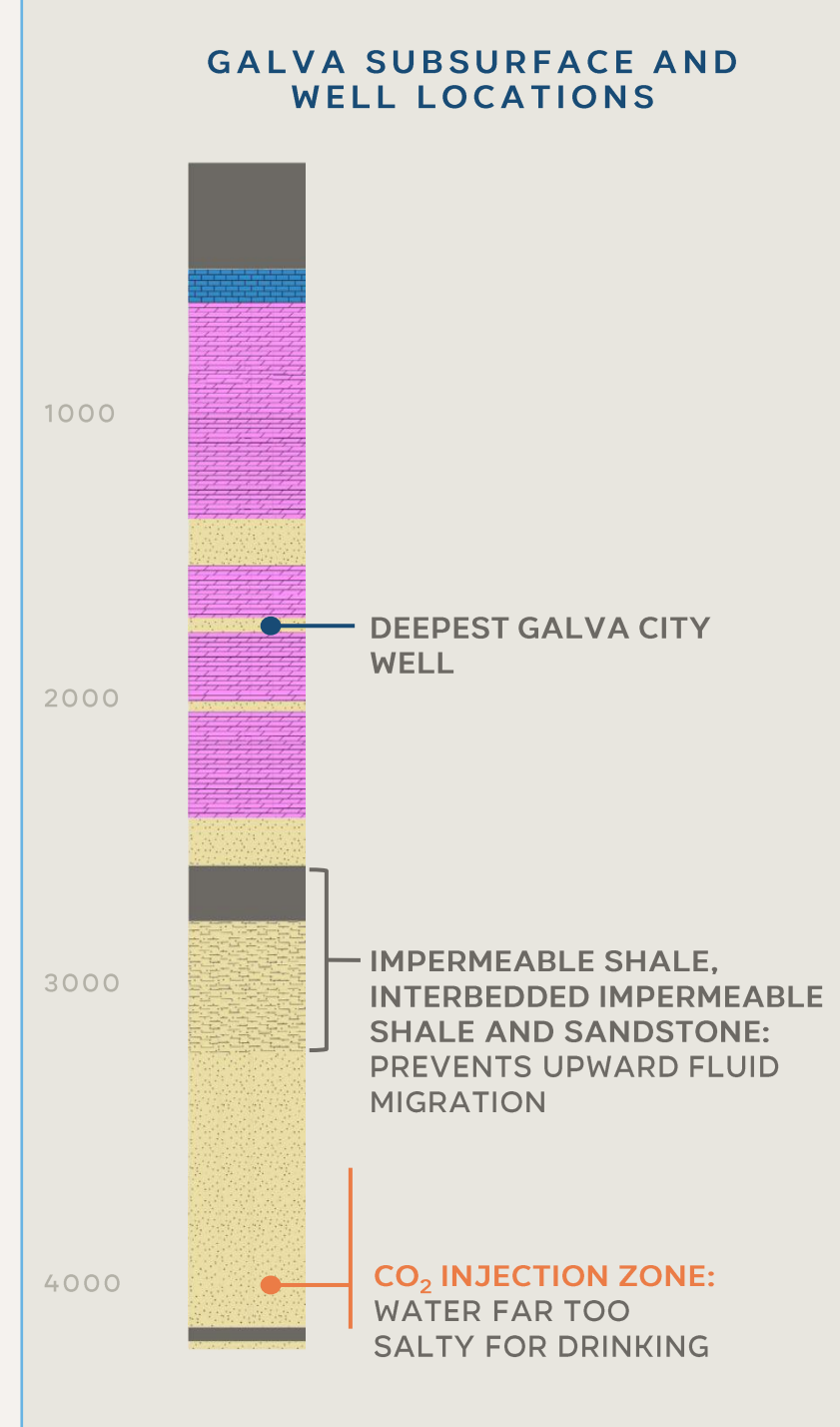
All Class VI permit applications must include rigorous sampling and analysis demonstrating an impermeable layer of shale or other rock types, which acts as a seal that fluid cannot move through. Wells themselves are built with corrosion-resistant materials to further protect drinking water. Lastly, we must have a robust water monitoring program in place before injection begins.

## MONITORING AND SAMPLING

We plan to sample water from six locations in and around the plume (the underground area where CO<sub>2</sub> is projected to move), as well as continuously monitor the first permeable zone above where we plan to inject, to check for early signs of leakage. If CO<sub>2</sub> is found in an unauthorized zone, we will stop injection, investigate, and remedy the issue.

Our water monitoring approach is comprehensive and aligned with best practices. We chose six water well locations (shown in the diagram on page 7) to obtain samples from across the plume, with a location bias towards the town of Galva, at a variety of depths. Water wells are positioned to monitor all sides of the injection well, ensuring we monitor baseline conditions and detect any potential changes in groundwater quality.

LAPIS



# CAN YOU PROVIDE MORE SUBSURFACE INFORMATION?

## IS THERE A FAULT NEARBY?

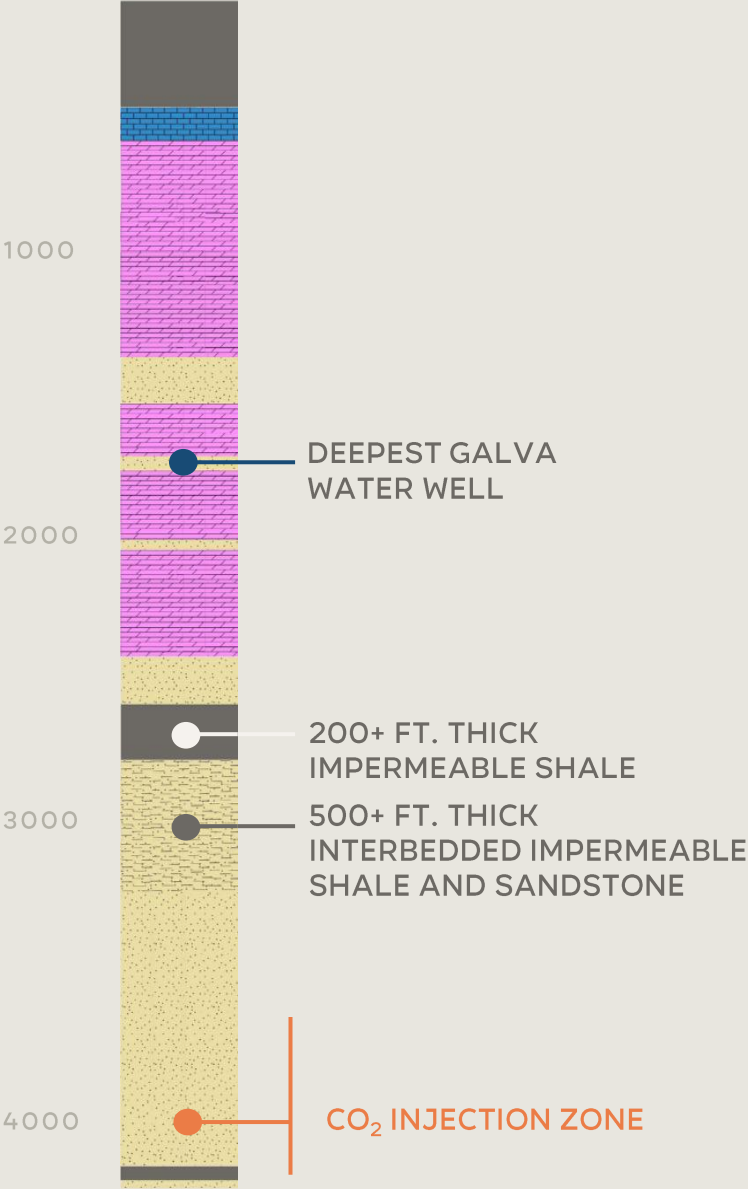
No. There are no faults in the project area. We confirmed this when we conducted our own proprietary seismic survey of the area in 2025.

The nearest known fault zone is the Sandwich Fault zone, which lies more than 50 miles to the Northeast of our project. There is a monocline—a fold in the earth’s layers, rather than a fault—about 40 miles to the Northeast.

## HOW THICK IS YOUR THICKEST LAYER OF SHALE?

To safely and permanently store CO<sub>2</sub> underground, you must demonstrate a confining zone consisting of impermeable rock through which fluid cannot travel. Our confining zone is comprised of more than ~500-feet of impermeable shale, impermeable sandstone, and sandstone. Just above our confining zone is another ~200-foot layer of impermeable shale.

GALVA SUBSURFACE



## WHAT ARE THE SOUND IMPACTS FOR NEIGHBORS?

We do not anticipate our compressors will meaningfully increase ambient noise beyond that of Big River Resources' current operations. Our compressors are powered by electric motors, an intentional choice to reduce emissions and ambient noise. We will hire a third-party to conduct a noise study on our compression equipment and share the results when available.

## WHAT FINANCIAL/LIABILITY PROTECTIONS DO YOU HAVE IN PLACE?

Class VI permits require us to have financial protections in place before injection begins. We must demonstrate that we can cover all potential costs related to well plugging and abandonment, post-injection site care and closure, and emergency and remedial response in the event of an issue.

## HOW LONG WILL THE PROJECT LAST? WILL YOU LEAVE ONCE INJECTION STOPS?

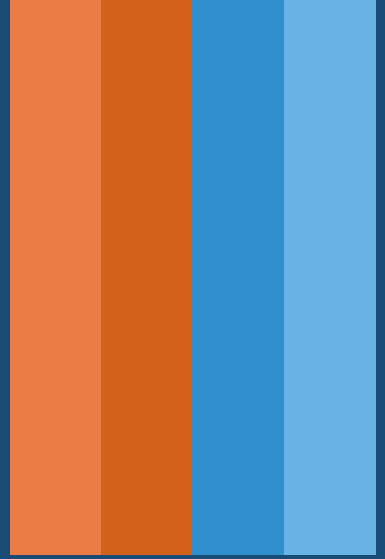
Our current contract is for 12 years of injection, with the option to extend to 20 years. Regardless of how long injection lasts, we will monitor the site following injection for 10 years at a minimum. To completely close the site, we must demonstrate negligible underground CO<sub>2</sub> movement to the EPA.

## WHAT HAPPENS IF YOU SELL OR EXIT THE PROJECT?

Class VI permits require you to have financial protections in place *before injection begins* to cover the costs of post-injection site care and permanent well abandonment. This means that the financial liability for closing and properly remediating the site would already be covered—taxpayers are not responsible for these costs.

# SUMMARY OF CHANGES

- Pages 10 and 12: Adjusted key to clarify impermeable properties of rock; added line showing CO<sub>2</sub> injection zone.
- Page 20: Changed “compressed” to “pressurized”; changed caption to clarify “liquid CO<sub>2</sub>” and “similar” vs. “same” specifications.
- Page 22: Added new page with more detail about recent community investments.
- Page 23: Added Facebook page link, as well as information about community meetings.
- Pages 24-30: Added Q&A section with recently asked questions from community members.



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CARBON SOLUTIONS

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