

Summary of Carbon Storage Project Public Information Meeting and Open House, Hawesville, Kentucky, October 28, 2010

Topical Report

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An Evaluation of the Carbon Sequestration Potential of the Cambro-Ordovician
Strata of the Illinois and Michigan Basins

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Task 3.9: Summary of Carbon Storage Project Public Information Meeting and Open House, Hawesville, Kentucky, October 28, 2010

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Abstract

The Kentucky Geological Survey (KGS) completed a second phase of carbon dioxide (CO₂) injection and seismic imaging in the Knox Group, a Cambrian-Ordovician dolomite and sandstone sequence in September 2010. This work completed 2 years of activity at the KGS No. 1 Marvin Blan well in Hancock County, Kentucky. The well was drilled in 2009 by a consortium of State and industry partners (Kentucky Consortium for Carbon Storage). An initial phase of CO₂ injection occurred immediately after completion of the well in 2009. The second phase of injection and seismic work was completed in September 2010 as part of a U.S. DOE-funded project, after which the Blan well was plugged and abandoned.

Following completion of research at the Blan well, a final public meeting and open house was held in Hancock County on October 28, 2010. This meeting followed one public meeting held prior to drilling of the well, and two on-site visits during drilling (one for news media, and one for school teachers). The goal of the final public meeting was to present the results of the project to the public, answer questions, and address any concerns. Despite diligent efforts to publicize the final meeting, it was poorly attended by the general public. Several local county officials and members of the news media attended, but only one person from the general public showed up. We attribute the lack of interest in the results of the project to several factors. First, the project went as planned, with no problems or incidents that affected the local residents. The fact that KGS fulfilled the promises it made at the beginning of the project satisfied residents, and they felt no need to attend the meeting. Second, Hancock County is largely rural, and the technical details of carbon sequestration were not of interest to many people. The county officials attending were an exception; they clearly realized the importance of the project in future economic development for the county.

Recommended best practices resulting from this public meeting are:

- Start outreach and communications early, and continue through completion of the project
- Follow through on initial plans and promises: Do what you said you were going to do
- Keep the outreach process open and transparent

Table of Contents

Executive Summary	p. 4
Objectives	p. 5
Introduction and Background	p. 5
Planning, Organization, and Publicity	p. 5
Meeting Location and Date	p. 5
Pre-Meeting Publicity	p. 6
Meeting Agenda	p. 6
Results and Discussion	p. 8
Attendance	p. 8
Key Issues Raised	p. 8
Results and Impact	p. 8
Conclusions	p. 9
Lessons Learned and Best Practices	p. 9
Appendix: Photographs and Press Coverage	p. 11

Executive Summary

The Kentucky Geological Survey and industry partners drilled an 8,126-ft-deep carbon storage research well in Hancock County, Kentucky, in 2009. Two phases of injection tests in the Knox Group carbonates and Gunter Sandstone were completed, including both brine and carbon dioxide injection. The second phase of injection was completed in September 2010 as part of U.S. DOE Cooperative Agreement DE-FE0002068, *An Evaluation of the Carbon Sequestration Potential of the Cambro-Ordovician Strata of the Illinois and Michigan Basins*. Subtask 3.9 of this project was an open house at the conclusion of the project to present results to the public and stakeholders. The open house meeting was held on the evening of October 28, 2010, in Hawesville, Kentucky, at the Hancock County Career Center. Information presented included summaries of the project results by geologists and exhibits of rock core and log data from the well.

Although public attendance at the open house was low, key county government officials were present to hear the results and ask questions about the 2-year-long project. The low turnout was attributed to general satisfaction with how the project was conducted and the lack of problems that affected the public. Specific conclusions and best practices resulting from the open house are:

1. Start outreach and communications early, and continue throughout the project
2. Do what you said you were going to do
3. Keep the research and outreach process open and transparent
4. Emphasize the economic impacts, which are the primary concern to local officials and residents; mitigating climate change is of secondary importance
5. Emphasize both the broader regional impact of the research and the local site-specific benefits (such as site reclamation, road repairs, and improvements to the benefit of the landowner and community)

Objectives

A public meeting and open house was held in Hawesville (Hancock County), Kentucky, on October 28, 2010. The goals of this meeting were twofold. First, we wanted to provide an overview and progress report on the regional Knox and St. Peter carbon sequestration research project funded by U.S. DOE under the geological characterization program. The second goal was to communicate to the local community the results of the 2-year-long carbon sequestration research project conducted by the Kentucky Geological Survey in Hancock County.

Introduction and Background

A public meeting and open house was held in Hawesville (Hancock County), Kentucky, on October 28, 2010. Because much of the public meeting focused on the KGS work in Hancock County, a short history of the KGS project is provided as background. In 2007, State funding was provided to the Kentucky Geological Survey to conduct carbon sequestration demonstration projects in eastern and western Kentucky. An industry-university consortium was formed, the Kentucky Consortium for Carbon Storage (KYCCS) to attract additional industry funding to match the State funds. Strong support from industry dictated that the first demonstration project be done in western Kentucky. Based on regional geology and the project budget, access to a drill site was obtained in Hancock County. After an EPA Underground Injection Control permit was obtained, the Blan No. 1 well was drilled to 8,126 ft into Precambrian sedimentary rocks. As predicted from seismic data, the Mount Simon Sandstone was absent at this location. Several porous and permeable zones in the Knox were used for injection tests with brine and CO₂ in the summer of 2009. A temporary plug was set in the well pending DOE funding for a second phase of testing. After receiving additional funding from DOE, phase 2 tests were designed during the summer of 2010, and conducted in September 2010. Time-lapse vertical seismic profiles were also acquired prior to and following CO₂ injection. This work completed the planned research at the Blan well, and it was plugged at the end of September 2010.

Prior to the Hancock County project, KGS received a limited amount of opposition from local residents. County government and officials were supportive of the project, but one or two landowners near the site voiced opposition with KGS and the EPA during our UIC permitting process. The landowner's concerns were deemed unfounded by both EPA and KGS, and they did not impede our progress. We did have some concern that this opposition would be raised again during the open house, but the parties did not attend the meeting.

Planning, Organization, and Publicity

Meeting Location and Date

The meeting was held in Hawesville, Kentucky, the county seat of Hancock County, where the injection test project was located. This location was chosen to allow local residents and government officials to attend and hear the results of the project. This fulfilled our promise to the local community to return when the project was complete to present the results. We considered holding the meeting in Owensboro, Kentucky, a larger city about 25 miles to the west, but decided it was more important to keep the meeting in Hancock County.

The meeting was held at 6 p.m. on October 28, 2010, a Thursday evening. The day and time were chosen to allow people to attend after work and avoid evening activities typically scheduled earlier in the week. The meeting was held in the Hancock County Career Center, a local community employment facility with a training room large enough to accommodate 50 to 60 people for the meeting.

Pre-Meeting Publicity

Prior to the meeting we publicized the event through a variety of media. Announcements were broadcast or published in the following:

- *Hancock County Clarion* newspaper: Weekly paper ran front-page story on meeting on Oct. 21, 2010, a full week prior to the meeting (copy provided in appendix)
- *Owensboro Messenger-Enquirer* ran a story on Oct. 28, the day of the meeting (text included in appendix).
- Electronic announcements were posted to the KGS Web site and to the Kentucky Geologists listserv e-mail distribution.
- E-mail announcements were sent to all project partners and colleagues.

The meeting was at 6 p.m., so refreshments were provided to encourage more attendees to attend, but the dinner hour timing may have hurt attendance.

Meeting Agenda

The meeting agenda is provided below. The meeting started with refreshments, followed by a time to talk to the Survey staff and view core from the Blan well, posters, and seismic data. Presentations were then made by the principal investigator of the DOE project, Hannes Leetaru (Illinois State Geological Survey) and two KGS researchers, Rick Bowersox and Dave Williams. An interactive demonstration was set up that allowed people to inject air into a core of porous sandstone submerged in water, and contrast it to trying to inject air into a nonporous limestone seal sample. This demonstration was developed by the Midwest Regional Carbon Sequestration Partnership, and has proven very popular at previous KGS outreach events. Various news media were informed of the meeting, and several showed up to cover the event. Presentations were followed by a discussion period. The entire meeting lasted about 90 minutes.

Carbon Sequestration Public Information Meeting

Hancock County Career Center

Hawesville, Kentucky

October 28, 2010

CO₂ Storage Potential of the Cambrian and Ordovician Strata In the Illinois and Michigan Basins

Funding from:

U.S. Department of Energy, National Energy Technology Laboratory

Commonwealth of Kentucky, Energy and Environment Cabinet

Western Kentucky Carbon Storage Foundation

Illinois Department of Commerce and Economic Opportunity

Research by:

Kentucky Geological Survey, University of Kentucky

Sandia Technologies

ConocoPhillips, Peabody Energy, and E.ON US

Illinois State Geological Survey, University of Illinois

Indiana Geological Survey, Indiana University

Western Michigan University

Meeting Agenda

- 6:00 p.m. Exhibits, core samples, posters, and refreshments
- 6:15 p.m. Welcome and introductions, Dave Harris and Jerry Weisenfluh, KGS
- 6:25 p.m. Overview and results of the Hancock County injection well: Rick Bowersox, KGS
- 6:50 p.m. Monitoring work and well-site reclamation: Dave Williams, Glynn Beck, KGS
- 7:00 p.m. DOE Regional Knox and St. Peter Study: Hannes Leetaru, Illinois State Geological Survey
- 7:25 p.m. Discussion and questions

Internet Resources

Kentucky Consortium for Carbon Storage:	www.kyccs.org
Knox and St. Peter Sandstone CO ₂ Project:	www.knoxstp.org
Midwest Geological Sequestration Consortium:	www.sequestration.org
Kentucky Geological Survey:	www.uky.edu/kgs
Illinois State Geological Survey:	www.isgs.uiuc.edu
Indiana Geological Survey:	igs.indiana.edu
U.S. DOE Carbon Sequestration:	www.fossil.energy.gov/programs/sequestration

Results and Discussion

Attendance

Based on meetings held prior to and during drilling, and the interest in the project in the local community, we expected an attendance of 40 to 50 people. Attendance fell far below expectations, with a total of 19 people. Of this total, 10 were affiliated with geological surveys involved in the research, and nine were local officials, media, or from the local community. Despite the low turnout, several key local government officials attended, and were actively involved in discussions. The attendees can be broken down into the following groups:

Local county government officials (county judge-executive, magistrates):	4
Director, Hancock County Industrial Foundation:	1
General Public:	1
News Media:	3
Research team members:	
Kentucky Geological Survey	8
Illinois State Geological Survey	1
Indiana Geological Survey	1
	Total 19

Numerous KGS staff with various areas of expertise attended to answer questions and facilitate discussion. This proved to be a valuable addition to the formal presentations.

Key Issues Raised

The county judge-executive and magistrates were interested in the presentations, and were satisfied with the way the research and site reclamation and road repairs were done. They were primarily interested in the potential financial impact this research project may have in the future. They wanted to know if having completed this project put Hancock County ahead of other areas in attracting new industry. Other questions concerned the potential for commercial sequestration in Hancock County: how many wells like the Blan well would be needed in a commercial storage field, and what is the worst that could happen if a commercial storage field is developed. County officials also asked if there was an opportunity for the county to run a CO₂ storage facility as a service to local businesses (similar to a landfill).

Results and Impact

This meeting saw low turnout from the general public, but strong interest and attendance from local government officials. We feel adequate advance notice was given, since media and government officials were there. In a small town, largely rural area, local newspaper announcements seemed to be the most effective medium for communication.

The point was made that the initial KGS project had become part of the larger regional DOE-funded Knox/St. Peter project, which helped to emphasize the broader importance of the Hancock County project.

Results and impact of the meeting are best discussed in terms of the two different groups in attendance: government and general public.

Local Government Officials: Our outreach efforts with the local county government began early in the project, as a site was still being selected. They were kept informed during the 2-year project with a total of six meetings:

- An informal discussion with local officials at a restaurant to present the project idea
- A public meeting at the Hancock County Career Center
- A public meeting in conjunction with a scheduled meeting of the Hancock County Fiscal Court
- A media day with drill-site tour during the drilling phase
- A teacher's day with drill-site tour during the drilling phase
- Final project presentations and DOE project summary at the Hancock County Career Center

KGS kept all promises made to the county officials, including repairs to county roads affected by the project, and covering the county occupation tax incurred by all the out-of-state contractors. This was an important factor in building their confidence in us. We saw a decline in attendance at each of the meetings after the first one. It was particularly interesting that the county officials who attended the meeting seemed much more at ease with what we were doing with each successive meeting (including the site tour). By this meeting, their questions were more educated (a credit to our continued outreach efforts), and they were making observations and asking about the future and about implications of the research. The fact that the local officials and the director of the industrial development foundation recognized the importance of this research to the future of affordable electricity for a major local employer (an aluminum smelter) indicated they are more interested in this work than they originally realized.

Local Resident: We had no local Hancock County residents attend the meeting (other than news media and county officials). Even Mr. Blan, owner of the land where the well was drilled, did not attend. The one person from the general public was from Owensboro, and worked for a pipeline company, and seemed interested in possible new business opportunities resulting from carbon capture and storage.

It was apparent to us that the low turnout was because of the lack of problems during the project, the fact that promises were kept, and because we kept people informed along the way. The fact that the local population was happy with our project resulted in their feeling no need to attend the meeting. They are not interested in the technical details so much as whether there was a major disaster. Beyond the county economic interests represented by the officials that attended, it is hard to get people to care what we did in the absence of some disaster.

Conclusions

Lessons Learned and Best Practices

1. Start outreach and communications early, and continue throughout the project.
2. Do what you said you were going to do.
3. Keep the research and outreach process open and transparent.
4. Economic impacts are the primary concern to local officials and residents; mitigating climate change is of secondary importance.

5. Emphasize both the broader regional impact of the research and the local site-specific benefits (such as site reclamation, road repairs, and improvements to the site and community).
6. Advance notice and free food does not guarantee a good turnout for a public meeting, but ignoring 1, 2, and 3 above will. Poor attendance is often tacit approval that you have done a good job.

Appendix

Photographs and Press Coverage for Hancock County open house

Meeting photos by Mike Lynch, Kentucky Geological Survey



Hannes Leetaru, Illinois State Geological Survey, provided an overview of carbon capture and storage research, and issues in the Illinois Basin.



Rick Bowersox (top photo) and Jerry Weisenfluh (bottom photo), both with the Kentucky Geological Survey, presented results of research at the Hancock County deep well at the open house.



Kentucky Geological Survey staff discussed cores from the KGS No. 1 Blan well that were on display at the open house.

Public to hear results of deep well tests

The Kentucky Geological Survey will hold a public meeting at the Hancock County Career Center, 1605 U.S. Highway 60 in Hawesville on the evening of Thursday, October 28. The meeting will start at 6:00 p.m. Central Time.

The topic of the meeting will be the research well drilled in the southeastern part of the county for testing the capacity of this region's deep geology to permanently store carbon dioxide from sources such as coal-fired power plants. KGS researchers will discuss what was done during the project, which is now complete, and what was learned from the research.

They will also discuss the work done to meet federal and state requirements for closing and sealing the well, which was drilled to a depth of over 8,100 feet. The Geological Survey is also arranging for the full reclamation of the project site and the repaving of Sweet Road, which leads to the site.

The public is invited to the meeting to hear this presentation and to ask any questions they have about the project and the restoration of the site and road.

More information can be obtained by contacting Mike Lynch at the Kentucky Geological Survey, (859) 323-0561, or mike.lynch@uky.edu.

Premeeting announcement published in the *Hancock County Clarion* newspaper, Oct. 21, 2010.

Meeting to discuss CO₂ test planned for tonight in Hancock

Thursday, October 28, 2010 4:02 AM

(Source: *Owensboro Messenger-Inquirer*) By Beth Wilberding, Messenger-Inquirer, Owensboro, Ky.

Oct. 28--Officials from the Kentucky Geological Survey will discuss the results of a carbon dioxide storage test that began in Hancock County more than a year ago at a public meeting at 6 tonight in Hawesville. The meeting will be at the Hancock County Career Center on U.S. 60. The test well was drilled on a farm in southeastern Hancock County, and researchers are studying whether coal-burning plants or other plants that emit carbon dioxide could store their emissions underground. A second round of testing at the site was completed about a month ago. The well has been sealed.

Officials got more focused data in its second round of testing, said Rick Bowersox, a senior research geologist for the Kentucky Geological Survey. "Testing was successful," he said. "We had no trouble injecting it into the formation. All the water went where it was supposed to. All the (carbon dioxide) went where it was supposed to." Researchers pumped 323 tons of carbon dioxide with a water injection into the well in August 2009. At that time, Dave Williams, co-principal investigator for the project, said he was pleased with how the first round of testing went.

Officials tested to see if CO₂ could be stored in several different layers of earth. It was injected into an 8,126-foot deep well. The only layer of rock that was found to be viable for the storage was the Knox Group dolomite formation, which is found at depths between 3,800 feet and 7,400 feet. The second round of testing began this summer after officials received a federal grant. The University of Illinois and several of its partners, including the Kentucky Geological Survey, received a \$4.8 million U.S. Department of Energy grant last year from the American Recovery and Reinvestment Act. Researches received better pressure data in the second round of testing because they focused on a very limited test interval, Bowersox said. It gave researchers an idea of what kind of pressure could be injected into the rock, Bowersox said. "The rock is full of water, so you have to overcome the weight of that to inject into it," he said. The geological survey has abandoned the well, and it has been sealed beyond Environmental Protection Agency requirements. The EPA mandates that a well be sealed about 3,660 feet below the surface, and the geological survey has sealed it there and at just above 5,030 feet, Bowersox said.

Researchers are also waiting for the results of a 3-D seismic survey done at the site. Data from the tests will be used in a larger study funded by the Department of Energy that includes the Illinois, Michigan and Indiana geological surveys.

To learn more about the project, visit www.kyccs.org and click on "WKy Deep Test Subproject."
Beth Wilberding, 691-7307, bwilberding@messenger-inquirer.com

Text of open house announcement published in the *Owensboro Messenger-Enquirer* the day of the meeting, Oct. 28, 2010.

*****ALL FOR ADC 400
4098 05-13-11 57P 21T
DAVID WILLIAMS **C008
1401 CORPORATE CT
HENDERSON KY 42420-4480

Hancock Clarion

VOLUME 117—NUMBER 44 • HAWESVILLE, KENTUCKY

8,000 foot deep well project completed in southern Hancock County

By **Ralph Dickerson**

Officials with the deep-well Carbon Storage Project, located on the Marvin and Brenda Blan property off of Sweet Road, held a public meeting last Thursday, October 28, to discuss the results of the test. Officials deemed the test a success, and said it proves the viability of injecting Carbon Dioxide (CO₂) into the ground as a way to combat global warming. Officials held the meeting at the Hancock County Development Complex at 6 p.m.

Roughly two years ago, of-

ficials from the Kentucky Geological Survey chose Hancock County, and the Blan farm in the southern part, due to its unique geography. The rock formations scientists wanted to test sit close enough to the surface to make them accessible, but deep enough to serve as a possible storage medium.

The testing occurred in two phases: one test last year, and another test this September. Officials bored a well shaft over 8,000 feet into the ground on the Blan farm to reach the first rock formation.

Originally, the project sought to study the feasibility of using the Mount Simon Sandstone layer as a storage area for the CO₂. This particular formation exists 8,126 feet underground.

"While we got good information, the initial testing did not work out quite as well as we wanted," Rick Bowersox, a geologist with the Kentucky Geological Survey said.

Plans called for the injection of roughly 1,500 tons of commercial grade CO₂ into the Mount Simon layer. After drilling the well, scientists in-

jected CO₂ under extremely high pressure into the ground. The extremely high pressure caused the gas to compress into a liquid, and to shrink to a size 250 times smaller than at normal atmospheric pressure. This contraction allowed the CO₂ to shoot through the pores of the rock chosen as the test storage medium.

The formation took only 323 tons. After injecting the CO₂, the geologists capped the well and started to monitor it to ensure it did not leak CO₂.

See **DEEP WELL** on page 2

Article published in the *Hancock County Clarion* on Nov. 11, 2010 after the open-house, summarizing the meeting.

Deep well project test for CO² storage completed

Continued from page 1

The geologists studied the Knox formation from the first test. The geologists pointed them in the direction of testing a rock formation known as the Knox group. This formation con-

tains dolomite and highly porous sandstone, and does not sit as deep underground. This particular rock formation starts at roughly 3,600 feet underground, and goes to a depth of nearly 7,400 feet. Scientists injected 367 tons of

CO₂ into the well in September of this year. The test revealed that the Knox formation possessed the needed porosity to allow injection of incredibly large amounts of CO₂.

If plants and utilities inject

CO₂ into the ground, what prevents it from leaking up to the surface and presenting a danger to people? The unique geology surrounding the Knox formation holds the key. "We learned we had excellent seals in the Black River

Limestone and the Maquoketa Shale," Bowersox said. "Any CO₂ injected during a full-scale commercial project would be safely contained in the subsurface and not leak up to the surface." The Black River Lime-

stone and the Maquoketa Shale are two formations that sit above the Knox formation. These two features contain extremely dense rock that does not allow the CO₂ to penetrate them, which effectively blocks the upward migration of the gas.

Why did geologists want to inject CO₂ into the ground? A consensus exists that CO₂ contributes to global warming. Power plants and other smoke stack industries dump millions of tons of CO₂ into the atmosphere each year due to the use of coal. While other energy sources exist, none of them possess the ability to replace coal as a viable energy source. Scientists seek to find ways to reduce or eliminate the amount of CO₂ vented into the atmosphere from coal fired plants and industries.

"The question of carbon management is really important, especially in Kentucky," Jerry Weisenfluh, Associate Director, Kentucky Geological Survey, said. "So much of our electricity is generated by coal."

The test results show that the Western Kentucky Coal Field Region, which includes Hancock County, possesses abundant sites for deep storage wells. The Western Kentucky Coal Field Region sits in a larger formation known as the Illinois Basin, which covers most of Illinois, Southern Indiana and Western Kentucky.

"There is a lot of research that needs to be done on where and how much," Bowersox said.

Not only did the test prove the viability of storing carbon in the ground, it also provided information on the number of storage wells, and acreage, needed by a commercial power plant over the life of the facility. The average power plant possesses a life-span of roughly 50 years.

"We learned from this well that it takes seven to 10 wells to store 100-percent of the CO₂ produced by a power plant over the lifetime of the facility," Bowersox said. "It takes about 3,500 surface acres for the wells."

Bowersox said it takes years to fill each well, and scientists envision a continuous injection method to pump the gas underground. Though the wells exist only as a small hole on the surface, when injected into the Knox formation, the CO₂ spreads over an area of 250-350 acres underground.

Therefore, a facility needs to purchase up to 350 acres per well. The amount of land needed per well does present an obstacle to overcome.

Storing carbon underground presents only one piece of the puzzle in dealing with the issue of global warming. The other step is developing cost efficient ways to capture the CO₂ from flue gases released when burning coal.

According to Brandon Nuttall, a geologist with the Kentucky Geological Survey, scrubber technology does exist to capture the CO₂, but it takes about 25 to 30-percent of the electrical output of a power plant to operate the equipment. Officials refer to this draining of power away from the electric grid a parasitic load.

If utilities retrofit existing facilities with this technology

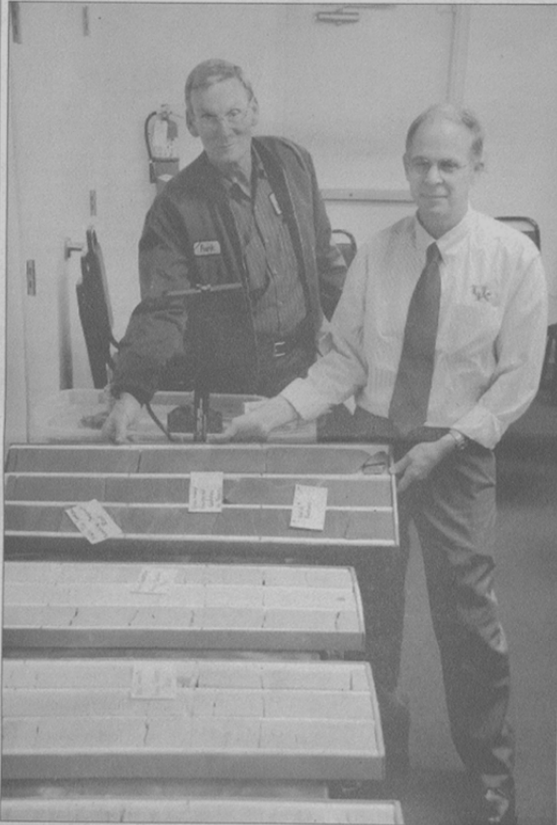


A Random State of Mind

By Malena DeJarnette

Can't You Smell That Smell?

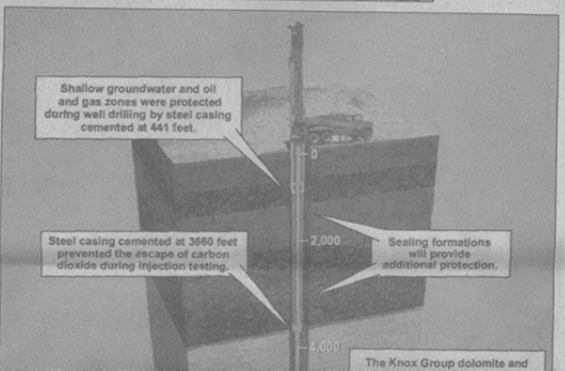
Oh what a stinky week! Pun intended! It actually all started last Thursday, when upon returning from a photo session I got a whiff of an awful stench in our living room. I ashamedly blamed it on baby Bryar. Later to find out, he was not the culprit. Days progressed and the smell kept lingering. At this point, I knew there was a source lying around somewhere. I looked around the room, under the couches, high and low. I was down on my hands and knees sniffing around on the rug, thinking there may be a smelly spot. Nope. But our son Abram sure thought I was acting funny. "Are you like a dog, momma?" he asked. I went the entire weekend cleaning the house from top to bottom. I took off all the couch cushions and washed them, sprayed Lysol on every inch, took out every bit of garbage, and it still stayed put. I eventually narrowed the smell down to one small area in the living room. And then to the couch. And then finally under the couch. I was convinced a dirty diaper had got squished down into the seat cushion and was hanging out underneath. Because that's exactly what it smelled like to me. And my nose is quite keen to that smell, to say the least. I had all kinds of ideas running through my head - like an old milk sippy cup, a yucky spit-up rag; there was a plethora of ideas, all of which mainly blamed the kids. Needless to say, I whipped out the scissors and began tearing the bottom of that couch apart. With the couch propped up on its back, I could see a small, black blurry blob now resting at the bottom. I grab a flashlight, because I am in fear of continuing, and was especially not sticking my hand down there without confirmation. And I am so glad I did. The light shimmered down on a...dead, baby mouse. Definitely the cause of the stench. A million questions raced through my mind. How did it get there? Why was it there? How am I going to get it out of there? Etc. Etc. I continue to rip and cut the entire bottom of the couch off. Trust me moms, this is a "need to" task anyway. I found a good handful of toys under there as well. I then ran to the kitchen and grabbed a set of tongs. There was no way I was touching this thing with my bare hands, or a paper towel where I could actually "feel" it. In the meantime, Abram is saying "cool" and Rowen is saying "I scary" (meaning of course he was scared). I opened the front door and slung the dead rodent out into the woods. Abram peeks back under the couch and says, "another mouse momma, get another mouse." No, there was not another one. But wouldn't that have been a good twist to the story? I hand-vac'd the far out of that couch. Lysol'd the heck out of it...and while doing so I realized that I may have been the murderer of that poor, little baby mouse. Sure, I could have sat on it and flattened it - I guess. But then I remember that same little mouse just a week beforehand, peering back at me from behind the furniture. You certainly don't see adult mice do this; I knew it was an innocent baby. I tried to shoot it with a broom, but didn't have the heart to hit it. I closed my eyes through half of this process. Maybe I hit him...unknowingly, and somehow caused it to later lie. But all in all, what an odd place for it to be. And what an odd thing for me to find. I thoroughly enjoyed waking up to no smell the next morning. However, my day didn't end so sweet. The "Poop Artist" struck again during nap time. I opened the door, and the smell just smacked me



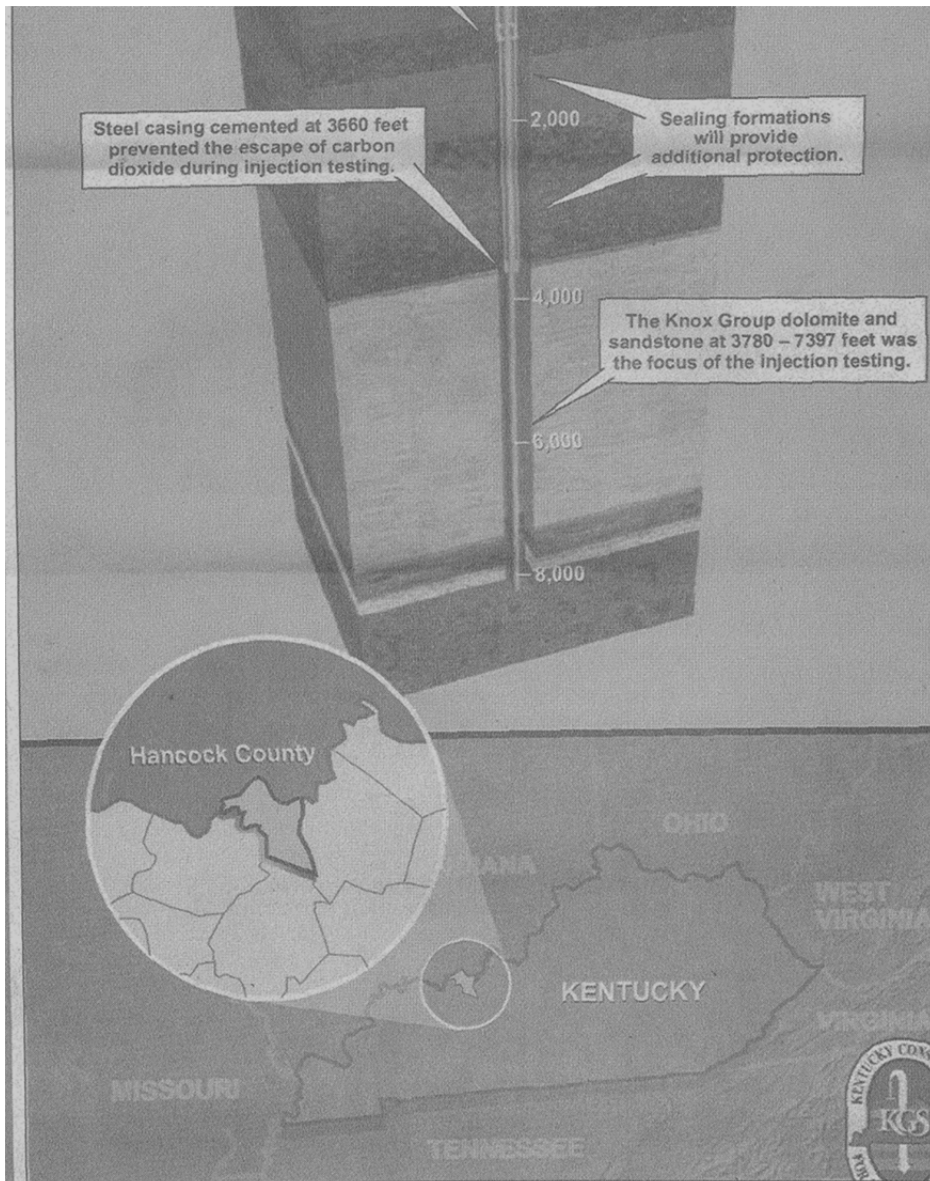
Dr. Jerry Weisenfluh, Associate Director of the Kentucky Geological Survey, right, shows core samples to Hancock County Magistrate Frank Estes. Weisenfluh shows the samples taken at the bottom of the well, which reached over 8,000 feet into the ground. This is the first time anyone has seen core samples from that depth of Hancock County's geology.



Dr. Weisenfluh answers a question from the audience as Hancock County Industrial Foundation Director Mike Baker and Magistrates Wayne Hodskins and Frank Estes look on.



Article published in the Hancock County Clarion on Nov. 11, 2010 after the open-house, summarizing the meeting (continued).



This photo shows a cross section of the formations the project went through, as well as the formation, the Knox Group, that proved successful as a carbon storage medium.

Nuttall, a geologist with the Kentucky Geological Survey, scrubber technology does exist to capture the CO₂, but it takes about 25 to 30-percent of the electrical output of a power plant to operate the equipment. Officials refer to this draining of power away from the electric grid a parasitic load.

If utilities retrofit existing facilities with this technology now, the country needs to increase the number of power plants by the same percentage to generate the same amount of electricity as the current number of facilities produce. Nuttall said the Center for Applied Energy Research at the University of Kentucky seeks to make the technology more efficient.

"They are working to reduce the parasitic load to around 10-percent," Nuttall said.

At this time officials do not envision carbon capture technology to be implemented for several more years. This project provided the information necessary for projects addressing other issues associated with carbon capture and storage to move forward.

Community Blood Drive Nov. 13

Courtney Haycraft will host her senior project, a community blood drive, at Central Baptist Church in Hawesville. The blood drive will be Saturday, November 13th, from 10:00 a.m. to 2:00 p.m. All donations go to Western Kentucky Regional Blood Center.

Article published in the *Hancock County Clarion* on Nov. 11, 2010 after the open-house, summarizing the meeting (continued).