

**WESTERN KENTUCKY SEQUESTRATION SUB-PROJECT
MEETING
August 21, 2008
KGS Well Sample and Core Library, Lexington, KY**

These people were present for the meeting:

KGS Staff

Dave Williams
Dave Harris
Rick Bowersox
Jim Drahovzal
John Kiefer
Mike Lynch

ConocoPhillips

Scott Rennie
Paul Johnson

E.ON US

Roger Medina
Sharon Dodson
Tom DePaull

CAER

Jim Hower

Smith Management

Karen Thompson

Sandia Technologies

Phil Papadeas

Geo Consultants

Ross Miller

TVA

Ed Stephens (via telephone)

Dave Williams opened the meeting with introductions of all attendees. Jim Hower of CAER said CAER Director Rodney Andrews met with the University of Kentucky Board of Trustees recently and that the Board recognized and supported the energy-related research of both CAER and KGS. He also noted the \$1.4 million recently granted to CAER for coal-to-liquids research.

Status of Agreements:

Dave Williams reported that the agreement with the property owner in Hancock County had been executed August 1 and delivered by Rick Bowersox to the owner along with the first payment.

The Data Sharing Agreement with R & B Resources remains pending. Dave Harris said he has a copy of the latest draft, which is being considered by the UK attorneys. The latest changes clarify the specifications on logging, cuttings, analyses, etc. He added there is some concern about the 2010 expiration of the R & B lease on the property and the owner's outlook on an extension. He said the partners will try to complete the project and provide R & B with all the data to help them make a quick, lower-risk decision on possibly drilling for oil and gas. Any decision by R & B to drill nearby for resources should not be a hindrance to this project, since it will go much deeper than the oil and gas. He hopes to have the final agreement within a week.

Status of project tasks:

The agreement with GeoSciences Corporation of Georgetown, KY is still with the UK lawyers; some details still need to be ironed out.

Karen Thompson asked whether it would be easier to accomplish this and other pending tasks by including them in the Sandia Technologies contract tasks. Phil Papadeas responded that Sandia has done these kinds of things for other projects they have managed and agreed it should be explored for this one. The language of the contract, he said, is broad enough to cover these tasks. It was agreed that this approach will be explored.

Rick Bowersox reported the seismic program contract has been awarded to WesternGeco, LLC of Houston, TX. The field work should be done by the end of September. The company has people in the field now. Very little dynamite will be used. Most of the work will be done with a seismic vehicle. It was suggested that the county judge / executive be informed that this is going on. Dave Williams said he'll visit the Judge McCaslin.

Rick Bowersox also reported that Ed Woolery of UK should be finished doing the data processing for his shallow seismic program by the end of August. The field work is completed.

Scott Rennie reported that Paul Heard and Bill Armstrong of ConocoPhillips are looking at several drilling rigs for the project. There was discussion of the type of rig needed, the limited number of drillers who can do this type of project and the process of narrowing the field of drillers. Two drillers being considered are Les Wilson and Pollister, in Michigan.

Dave Williams reported that the survey of the drilling site had been completed by the company chosen for the job.

He plans to meet with a representative of the state Division of Oil and Gas in western Kentucky to work on the state permit requirements and process. He wants to file the permit application by the end of August. Phil Papadeas noted that the drilling plan filed with the state is exactly the same as the one filed with EPA in Atlanta. The state filing fee is expected to be \$300, and a \$10,000 minimum bond is anticipated. A letter of credit from a state bank will most likely be needed for this.

Dave Harris said he had sent a letter in July to the Foundation on the Phase III funding, which has been approved by the Foundation. The Phase III costs amount to ~\$622,000. It's expected that the Phase IV costs will be estimated by the middle of September. Scott Rennie said the drilling costs, which are still being developed, should be known by mid-October.

Phil Papadeas noted that EPA does not have an application fee for filing an application, though a letter of credit for a surety bond will be needed, as with the state permitting process. EPA provided those who attended the August 12 meeting in Atlanta a packet of guidance on financial assurance.

Dave Williams said the second title search for property near the project is not yet completed. The two title searches are going to cost a total of \$6000. Karen Thompson suggested that a call to the county judge/executive might help to move the process along, since the title attorney is the county attorney.

Drilling project status:

On the issue of the Marathon Oil pipeline right of way through the site-owner's property, Dave Williams said the right of way manager for Marathon said an 8-inch protective pad would be needed near the drilling site and a person would have to be on site to monitor the drilling project. Scott Rennie suggested that the partnership should examine the right of way agreement to determine if Marathon can in fact make such requirements.

Rick Bowersox reported on the August 12 meeting at the EPA's Atlanta office. He said EPA asked many questions and also said there would need to be a two-mile area of review, which is more than was expected. Rick showed a map of the site with a two-mile radius, which showed 77 oil and gas wells, most of which are abandoned. Phil Papadeas commented that most of the mapped wells are not of consequence, since the deep-well project is so much deeper than they are. In response to a question, he also noted that EPA did not make any comment about the applicability of its proposed rules on carbon storage to this project. There was discussion that perhaps EPA hopes to learn from this project as part of developing the new rules.

Rick said EPA has proposed one requirement which will pose a problem: the placement of an additional packer in the well casing to mitigate possible leakage. He said this requirement would make testing much more difficult and expensive, as the extra packer would have to be moved regularly. The additional cost could be \$50,000 to \$100,000, according to Phil Papadeas.

There was discussion about the issue and comments that what is currently in the drilling plan is sufficient and actually a more accurate gauge of pressure in the well. It was noted that the fact that this will not be a long-term injection well should be pointed out to the EPA and that leakage security is being achieved by other means.

Scott Rennie said EPA estimated a 90-day time from submittal to approval, under the best-case scenario, so approval might come in January. Phil Papdeas suggested a pre-submission to EPA of the drilling plans before the permit application is submitted. He hopes this will convince EPA that the extra packer is unnecessary. He still hopes to submit the application in mid-September.

He also suggested that EPA representatives be invited to the well site for the carbon dioxide testing phase. He said EPA was complimentary of the outreach which has already been done. Karen Thompson suggested proactively submitting a plan for a public meeting, if it's required during the application process.

Dave Harris asked what should happen if the drilling encounters deep gas. Will it harm the project plan, and would the gas zone have to be cased? Scott Rennie indicated that if it is not a lot of gas, the majority of the planned testing can still be done. But he also suggested a risk analysis and contingency plan be drawn up for this possibility.

Ross Miller said that, in the case that deep gas is encountered, Geo Consultants and R & B might be interested in buying the well. Dave Harris said this scenario had happened in Ohio previously.

On the EPA permitting process, Phil Papadeas said Sandia will begin assembling the application from pieces which come to them from the partners. The application will have five parts:

- Administrative section (describing the well owner)
- Technical section (describing the geology of the project area)
- Reservoir modeling
- Drilling and abandonment plan
- Monitoring program

In answer to a question, Phil indicated that a standard umbrella liability policy of \$2 million is a good idea for the project. Foundation members are comfortable that they are already covered by liability insurance. Dave Harris indicated he will check with UK on coverage for KGS.

The next meeting was scheduled for October 2, 2008, at the same location.

ACTION ITEMS:

KGS:

Dave Harris will continue to check with UK's legal office on the status of the data-sharing agreement with R & B. When he has a final copy from the legal office, it will be submitted to Ross Miller to show to R & B.

Dave Harris and **Dave Williams** will discuss with **Phil Papadeas** possibly turning over the arrangements for contracting for a Phase I environmental review and other tasks to Sandia to get these arrangement done more quickly.

Dave Williams will contact the Hancock county judge / executive to inform him of the expected arrival of seismic trucks and possible use of a very limited amount of dynamite for the seismic program; he will also try to get some help from the judge / executive to get the second title search completed.

Dave Williams will meet with a state Division of Oil and Gas representative to work on the state drilling permit application, targeting early September for submission. He will also determine the bonding requirements for both the state and federal permits.

With ConocoPhillips, examine the right of way agreement between Marathon Oil and the property owner to determine if Marathon Oil can require any steps on our part during the project.

Invite EPA to be at the project site for the carbon dioxide testing phase.

Develop a risk analysis and contingency plan, in conjunction with other partners, for the possibility that deep gas may be encountered during the drilling of the deep hole.

Discuss with UK the possible need for standard \$2 million liability coverage.

Rick Bowersox will disseminate to the partners the processed information from Ed Woolery's shallow seismic work at the site.

ConocoPhillips:

Will work on drilling costs, targeting mid-October to have them completed.

Sandia Technologies:

Before submitting the EPA permit application, send a drilling plan to the EPA to demonstrate that the included pressure monitoring and safety plans are adequate, and the EPA-proposed packer in the casing is unnecessary, redundant, and expensive.

Send in the completed EPA application by mid-September (target date).