

**To: KU, KSU, WSU, FHSU students and faculty and Kansas Geological Survey staff
Team members of the DOE-CO2 projects**

**From: Lynn Watney and Jason Rush, Kansas Geological Survey
Dana Wreath, Berexco, LLC**

RE: Field trip to Berexco Cutter KGS #1 and review meeting for DOE-CO2 contracts

Date: September 7, 2012 UPDATED

Background

The Kansas Geological Survey and Berexco, LLC are hosting a site visit for DOE-NETL Program Manager Brian Dressel from Pittsburgh, PA. You are invited to join us. The site visit is a 4-day event consisting of

- 1) a visit to see the Berexco Cutter KGS #1 in Stevens County that is currently drilling and coring its way to an anticipated Precambrian basement depth of 7500 ft. and
- 2) a review meeting of three active DOE contracts that address carbon storage in Kansas including CO2-EOR and saline aquifer sequestration.

The site visit will run from Monday, September 10 to Thursday the 13th as described in more detail below. Maps to get to the well location, background material related to the selection of the well, and how and how the well is being evaluated are included in an accompanying pdf file.

KU, KSU, WSU, FHSU students and faculty and Kansas Geological Survey staff are welcome to join us on the field trip. If you plan to join us, please inform Lynn Watney (lwatney@kgs.ku.edu). Also, please bring a hard hat and boots if you want to visit the rig floor.

The projects to be addressed in the review meeting as listed below with links to presentations recently made at the annual review meeting in Pittsburgh in August.

DE-FE0002056 -- *Modeling CO2 Sequestration in Saline Aquifer and Depleted Oil Reservoir to Evaluate Regional CO2 Sequestration Potential of Ozark Plateau Aquifer System, South-Central Kansas Including SW Kansas CO2 EOR Initiative – Chester & Morrow*
http://www.kgs.ku.edu/PRS/Ozark/Reports/2012/Watney_DEFE0002056_FY12_Carbon_Storage_Review_8-27-12.pdf
recent report on SW Kansas CO2 Initiative --
http://www.kgs.ku.edu/PRS/Ozark/Reports/2012/GSOC_2012_Dubois.pdf

DE-FE0006821 -- *Small scale field test demonstrating CO2 sequestration in Arbuckle saline aquifer and by CO2-EOR at Wellington field, Sumner County, Kansas*

http://www.kgs.ku.edu/PRS/Ozark/SmallScale/2012/Watney_DE-FE0006821_FY12_Carbon_Storage_Review_8-27-12.pdf

DE-FE-0004556 -- *Prototyping and testing a new volumetric curvature tool for modeling reservoir compartments and leakage pathways in the Arbuckle saline aquifer: reducing uncertainty in CO₂ storage and permanence (horizontal well at Bemis-Shuts)*

http://www.kgs.ku.edu/PRS/Bemis/Reports/Aug_2012_J_Rush_DOE_Bemis.pdf

Schedule DOE Site Visit and Project Review Meeting

Monday, September 10, 2012

Brian Dressel, DOE Program Manager arrives at Wichita Midcontinent airport at 1:30 p.m.

Drive to Dodge City, KS and check-in at Holiday Inn Express for evening.
[Wichita to Dodge City - 154 miles via US 400/US 54 – 2 hrs. 42 minutes by Google](#)
2320 W. Wyatt Earp Street, Dodge City, Kansas 67801

Reservations and front desk: 620-227-5000 – Please make your reservations as early as you can.

Dinner -- 6:30 p.m. Casey's Cowtown Restaurant in Dodge City, KS (503 E Trail St, Dodge City, KS 67801-9011) **Please note, new time to meet for dinner.**

Background presentation 8 p.m. -- on the Berexco Cutter KGS #1 at reserved conference room in the Holiday Inn Express. **Please note new time for presentation.**

http://www.kgs.ku.edu/PRS/Ozark/cutter_kgs_1.html

Tuesday, September 11, 2012

Depart for wellsite from Holiday Inn Express parking lot – 8 a.m. -- Berexco Cutter KGS #1 wellsite is located near 5.7 miles southwest of Satanta, Kansas and is on right side of road off U.S. 56. *See attached pdf file for map. Handout will be provided during the field at wellsite or before.*

[Dodge City to Satanta, via US-56, 60 mi, 1 hr 8 min. by Google](#)

Tour of well site – 9 a.m. to noon. Review drilling, coring, DST, and well testing program. Discuss progress, core handling and recovery, and plans. Description of relationship of this well to the overall project objectives.

Depart wellsite and lunch stop on return trip to Wichita – ~Noon

Lunch stop – ~15 miles from rig back toward Dodge City off Highway 56 in Sublette KS

Cattleman's Café, Sublette KS ph:620-675-8454

110 South Inman Street

Noon Sept. 11th for 15-20 people

Open 10:30 to 10 pm

Depart lunch and return to destinations. Those involved in review return to Wichita -- Satanta, KS to Wichita ~4 hours via US-400 W/US-54 W and US-56 W, Arrive in Wichita ~ 6 p.m.

Check into hotel -- For those returning to Wichita and participating the project review meeting, delegation will stay at **Holiday Inn Express**, 7824 East 32nd Street North, Wichita, Kansas 67226. (Front desk -- 316-634-3900)

~ 7 p.m. -- Dinner TBD

Wednesday, September 12, 2012

Project Review Meeting - Berexco Headquarters, Wichita

Meeting will be hosted by Dana Wreath and BEREXCO, LLC, 2020 N. Bramblewood Street, Wichita, KS 67206, ph. (316) 265-3311. You will need to confirm with Lynn (lwatney@kgs.ku.edu) and Dana Wreath (DWreath@berexco.com) that you will be attending or participating by Go-To-Meeting. If you wish to participate via Go-To-Meeting, use the weblink, phone #, and access code noted below. The web link will allow you to see shared computer screen used to conduct the meeting.

1. Please join my meeting – Kansas DOE-CO2 Meeting
<https://www1.gotomeeting.com/join/731686169>
2. Join the conference call:
Dial +1 (510) 201-0301
Access Code: 731-686-169
Audio PIN: Shown after joining the meeting
Meeting ID: 731-686-169
GoToMeeting®
Online Meetings Made Easy®

For those not presenting, but wish to attend in person and participate in the discussion, please contact Lynn. The room will accommodate 30 people total. You are welcome to join us. We also need a head count for lunch arrangements.

8:00 – 8:15 a.m. – Coffee

8:15 - 8:30 a.m. – Lynn Watney and Dana Wreath, Introductions, schedule, logistics

8:30 – 9:00 -- Jason Rush, KGS, Summary of project to date, DOE technology review, and future plans –

DE-FE-0004556 -- *Prototyping and testing a new volumetric curvature tool for modeling reservoir compartments and leakage pathways in the Arbuckle saline aquifer: reducing uncertainty in CO₂ storage and permanence (horizontal well at Bemis-Shuts)*

http://www.kgs.ku.edu/PRS/Bemis/Reports/Aug_2012_J_Rush_DOE_Bemis.pdf

9:00 to 11:00 – Work being performed under DE-FE0002056 -- Modeling CO₂ Sequestration in Saline Aquifer and Depleted Oil Reservoir to Evaluate Regional CO₂ Sequestration Potential of Ozark Plateau Aquifer System, South-Central Kansas (Including SW Kansas CO₂ EOR Initiative – Chester & Morrow)

9:00 - 9:10 a.m. –Lynn Watney, KGS, Progress and plans for contract DE-FE0002056

9:10 - 9:30 a.m. -- Marty Dubois, IHR, Introduce member of team, summary of progress, and plans for Budget Period 3 for *SW Kansas CO₂ EOR Initiative – Chester & Morrow*

9:30 – 9:50 a.m. -- Dennis Hedke, Hedke-Saenger Geoscience, 1) Review of seismic activities in western Kansas for *CO₂ EOR Initiative*, calibration for field models and regional subsurface mapping, 2) merge of Eubank Field 3D seismic, 3) Wellington PSDM to Petrel geomodel for Arbuckle and Mississippian characterization (*latter topic deferred to Jason's presentation on Petrel model in afternoon session on Wellington and Class VI permit*)

9:50 – 10:10 a.m. – Tom Hansen et al. (Bittersweet subcontract), Review of deliverables, current activities and future plans for regional mapping, type wells (Lynn will review uploading LAS files to Petrel and status of interactive mapper)

10:10-10:30 a.m. – Break

10:30 – 10:50 a.m. – Saugata Datta, Dept. of Geology, Kansas State University, review and plans on brine and rock geochemistry and reaction kinetics at Wellington and Cutter Fields

10:50 – 11:10 a.m. – Jennifer Roberts, Dept. of Geology, The University of Kansas, Review of results of microbial and geochemical studies at Wellington and future plans including Cutter Field test

11:10 – 11:30 – Aryrat Sirazhiev & George Tsoflias, Department of Geology, The University of Kansas, Seismic attribute analysis of the top of the Mississippian

11:30 – 12:30 p.m. – Lunch – will eat in, more details at the start of the meeting

12:30 – 5:00 p.m. -- Review of activities for contract DE-FE0006821 -- *Small scale field test demonstrating CO2 sequestration in Arbuckle saline aquifer and by CO2-EOR at Wellington field, Sumner County, Kansas (including characterization work from DE-FE0003*

12:30 – 1:00 - Lynn Watney, KGS -- Introductions, summary of project activities, current status, update on plans. Review of progress on filing an application for Class VI geosequestration permit to inject 40,000 tons CO2 into lower Arbuckle

1:00 – 1:30: – Tiraz Birdie, Birdie Consulting, status of Class VI permit application

1:30 – 1:50 – Tiraz and Lynn, Regional Hydrogeology & USDW, Regional Geology, Structural Features, Seismic History pertinent to the application

1:50 -5:00 -- Injection zone (lower Arbuckle), seals and baffles in Arbuckle, and caprock for static and dynamic modeling to establish AOR

a) **1:50-2:20 -- John Doveton and Mina Fazelalavi, KGS --** core and log porosity and permeability & quantifying contribution of fractures for the Arbuckle geomodel

b) **2:20 – 2:50 -- Jason Rush, KGS --** Petrel geomodel, integrating seismic, logs, and core analyses –

2:50-3:10 BREAK

c) **3:10 – 3:40 -- Eugene Holubnyak, KGS, and Tiraz Birdie --** Coupled geomechanical and flow modeling; hydrologic modeling

3:40 – 4:10 -- Tiraz, Dana Wreath, Chris Standlee or Danny Allison (Abengoa Biofuels) and Lynn -- MVA and Closure, Financial Assurance requirements, Abengoa CO2 supply

4:10 – 5:00 p.m. – Discussion, Actions Items, and off to dinner for further discussion and wrap-up

6:00 -- Dinner at TBD

September 12

8:30 a.m. –Meet at Berexco's offices and depart for field trip to Abengoa's Colwich Ethanol Plant (tentative plans) or wrap-up

10:00 a.m. -- Arrive at Wichita Midcontinent Airport. Brian's flight departs at 12:00 p.m.