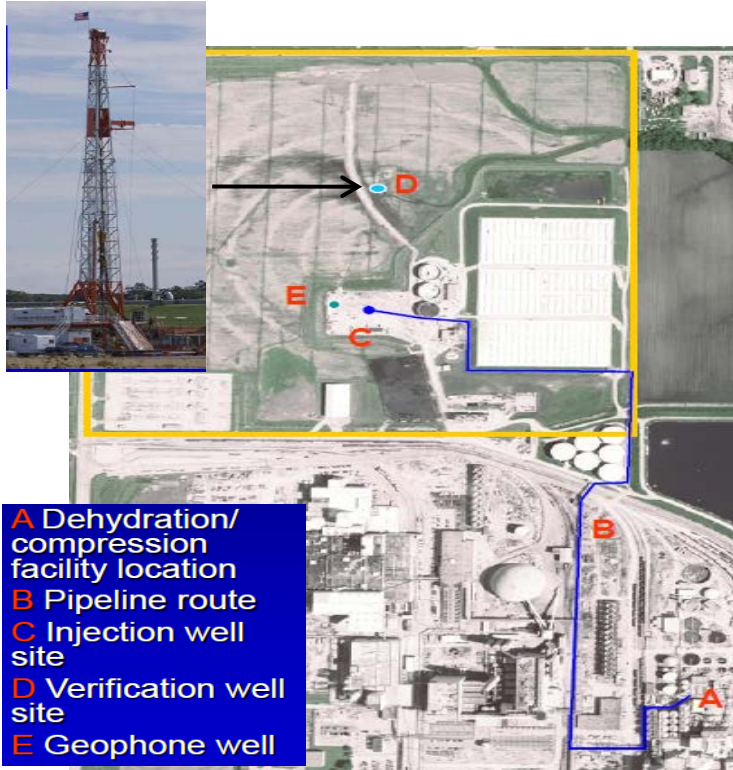




Update on Approved Projects

- Illinois Basin – MGSC Decatur Project
- Illinois Industrial Carbon Capture and Storage Project
- Air Products CO₂ Capture from Hydrogen Facility Project

Midwest Geological Sequestration Consortium *Archer Daniels Midland Project*



- *First large scale (1MMT) saline test on land*
- *1MMT from ethanol fermentation facility*
- *Dehydrated and compressed to 1500 PSI*
- *Injecting 1,000 tonnes per day since Nov 2011*
- *Over 270,000 tonnes injected to date as of Sept 30*
- *Geology*
 - *Storage Formation: Mount Simon Sandstone*
 - *Seal: 500ft of Eau Claire Shale*
- *Designed to meet UIC Class VI requirements*
- *Expect injection of 1 million tonnes Nov 2014*



CO₂ Pipe to Injection Well



Compression Facility

Archer Daniels Midland Company ICCS Area 1

CO₂ Capture from Biofuel Plant

- Decatur, IL
- CO₂ is a by-product (>99% purity) from production of fuel grade ethanol via anaerobic fermentation
- Up to 90% CO₂ capture; dehydration (via tri-ethylene glycol) and compression, ~900,000 Metric TPY CO₂
- Sequestration in Mt. Simon Sandstone saline reservoir (Start: July 2013)
- Total Project: \$208 Million ; DOE Share: \$141 Million (68%)



Key Dates

- Phase 2 Awarded: Jun 15, 2010
- FEED Complete: Apr 2011
- Construction started: May 2011
- Operation phase start: Jul 2013

Status

- NEPA completed
- Construction ~29% complete
- UIC Class VI permit submitted: 7/26/2011
- Received Illinois DNR permit for test well drilling – rig on site

Air Products and Chemicals, Inc. ICCS Area 1

Steam Methane Reforming with CO₂ Capture

- Port Arthur, TX (Hydrogen plant at Valero Refinery)
- 90%+ CO₂ capture (Vacuum Swing Adsorption) from 2 steam-methane reformers (SMRs) yielding ~925,000 tonnes CO₂/year
- ~30 MWe cogeneration unit to supply makeup steam to SMRs and operate VSA and Compression Equipment
- CO₂ to Denbury pipeline for EOR in West Hastings oil field (Start: 2012)
- Total Project: \$431 Million; DOE Share: \$284 Million (66%)



Key Dates

- **Phase 2 Awarded: Jun 15, 2010**
- **FEED Complete: Nov 2010**
- **Construction Start: Aug 2011**
- **Operation Start: Dec 2012**

Status

- **Commercial Agreements, including CO₂ off-take, completed.**
- **Permit By Rule (PBR) and Standard Air Permits Issued by TCEQ: May 2011**
- **Phase 2B authorized by NETL: 6/1/2011**
- **FONSI Issued: 7/8/2011**
- **Lateral pipeline permit issued by US Army Corp of Engineers: 8/17/2011**
- **Construction ~55% complete**