

To Prepare for CO2 Foam EOR with CO2 sequestration on the Norwegian Continental Shelf

Step-wise upscaling to enable CCUS:

**“CO2 Foam EOR Field Pilots
in Texas and Mississippi”**

CO₂ foam field pilot project

OBJECTIVE

Cost-effective “Roadmap for Success” for mobility control CO₂ EOR implementation on Norwegian Continental Shelf through onshore field trials in Texas

WHY TEXAS?

- CO₂ is commercially available
- Foam as mobility control
- Up-scaling; major challenge in oil recovery
- Fraction of costs of off-shore field tests
- Fast results: short inter-well distances
- 30 years experience in Texas on CO₂ EOR
- 4D seismic establishes a field laboratory

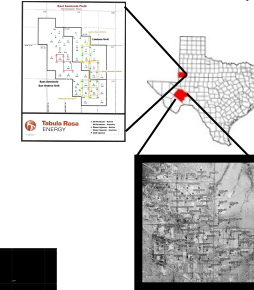
COLLABORATORS

University of Bergen	Total	Stanford
University of Bordeaux	Rice	National IOR
University of Houston	TU Delft	Schlumberger
Statoil	UT Austin	Shell

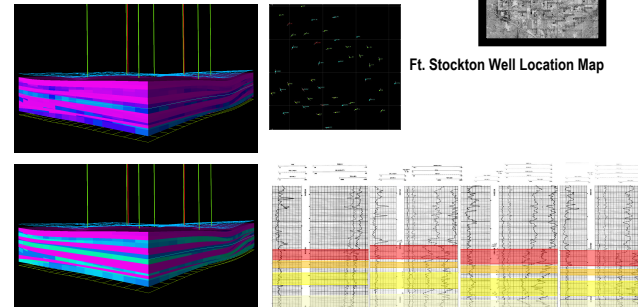
FUNDING

Norwegian Research Council, CLIMIT program
Oil Industry (Shell, Total, Schlumberger, Statoil)
+ local independent operators

East Seminole Well Location Map



Ft. Stockton Well Location Map



STATUS

- Hired 5 PhDs (3 UiB, 1 UiS, 1 Rice)
- Industry/Academic research clusters
- Geological models in Petrel
- Coring of new wells
- History matching waterflooding
- CO₂ injection ongoing
- Optimization of injection rates
- Identifying 5-spot for CO₂-foam
- Surfactant for CO₂ foam found



Other CCUS Activities

NorTex Petroleum Cluster NORTEX PETROLEUM CLUSTER

1st Biennial CO₂ for EOR as CCUS Conference, Houston, USA Nov 19-21, 2013

2nd Biennial CO₂ for EOR as CCUS Conference, Houston, USA Oct. 4-6, 2015

The 2015 CO₂ for EOR as CCUS Conference gathered

120 registered attendees from **43 different organization**

A total of 60 graduate students participated;

20 from Norway and UK and 40 from 9 different universities in the USA (USC, Stanford, CSM, UT, TAMU, Rice, UH, KU and UND).

Website: www.nortexpetroleum.org



Chairman Arne Graue, Mike Moore, Chuck McConnell, Vello Kuuskraa, Steve Melzer and Fred Eames

Petroleum Research School of Norway

(UiB, UiS, NTNU, UiT, UiO, UNIS)

2013 Oneday seminar at the Petroleum Museum, Stavanger Nov 24th

Emphasizing More Sustainability in Upstream

Website: www.wifisweb.org

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