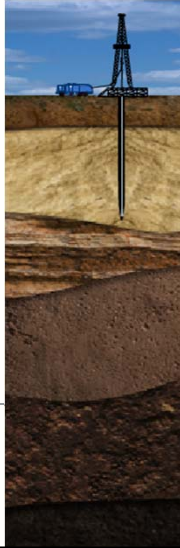


Schlumberger
Carbon Services



From Field Data to Simulation

Wayne Rowe
Western US Program Manager

October 25, 2011

www.slb.com/carbonservices/

Schlumberger
Carbon Services



vienna.net



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Agenda

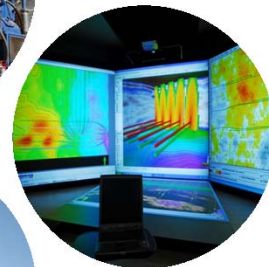


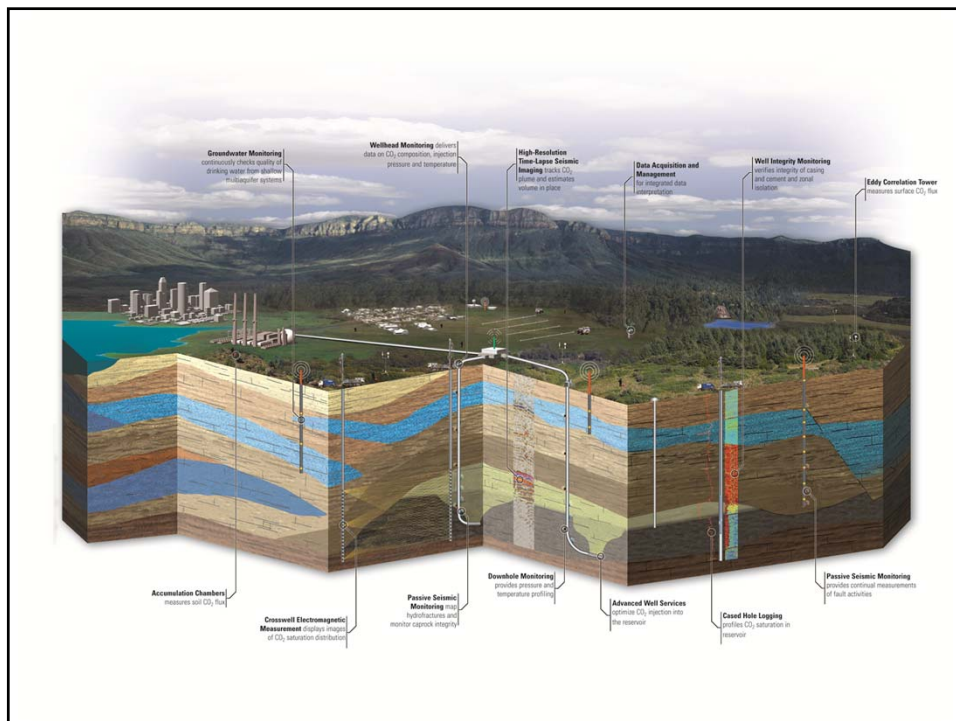
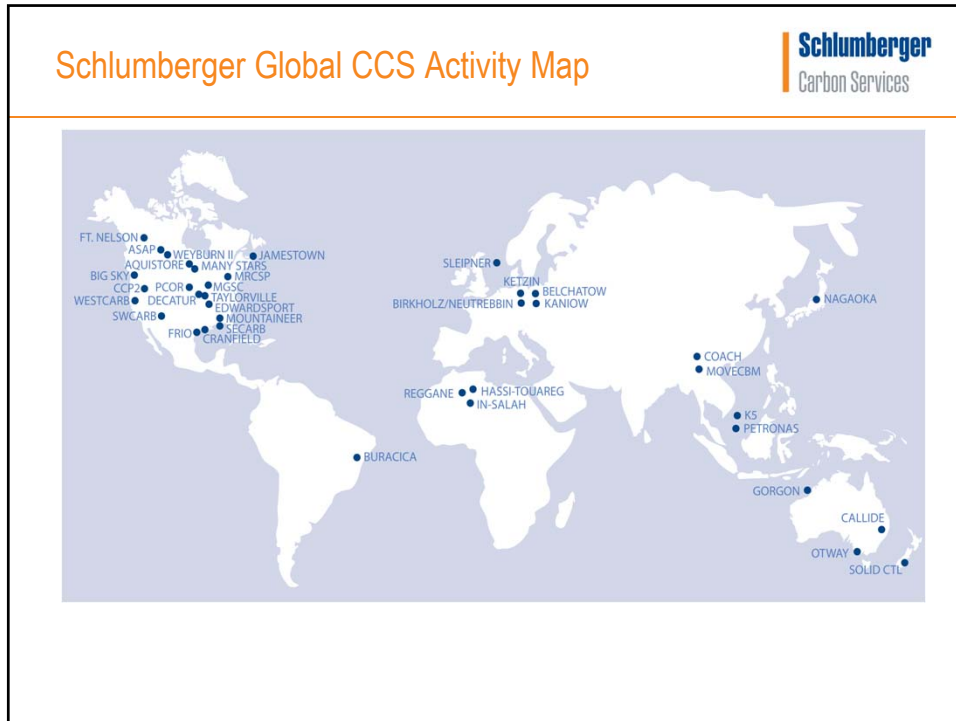
- Schlumberger Carbon Services
- Anatomy of a Sequestration Site
- Types of Measurements
- Simulation

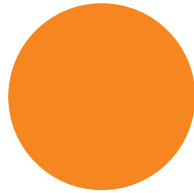
Schlumberger Today



- People:
 - ~108,000
 - 140 Nationalities
 - Working in over 80 countries
- Services:
 - Reservoir characterization
 - Reservoir production
 - Drilling & Measurements
 - Integrated Project Management
- 2010 Financials:
 - \$27.45 billion revenue
 - > \$1 billion on Research & Product Development

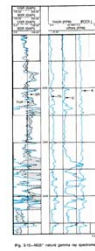
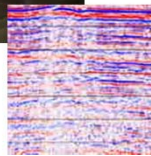
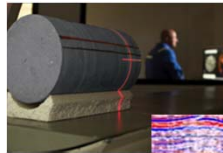






From Field Data.....

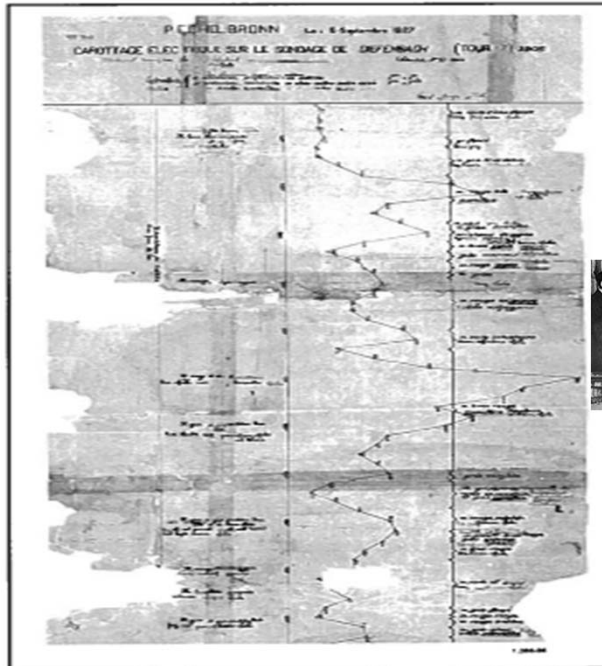
- Cores
- Seismic
- Well Logs



Coring



Seismic Survey



1927
The "first log"

Formation Imaging

Ultrasonic pulse-echo Logging, just like the doctor's office.

--Lower resolution

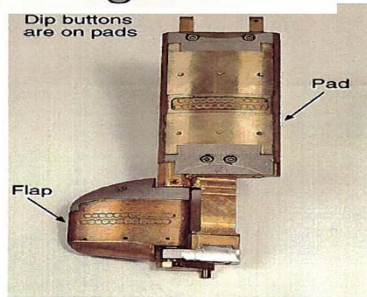
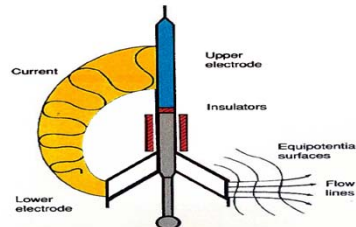
Resistivity Image Logging

--Highest resolution.

--Forced micro current into the formation.

--192 sensors

-- every 1/10th inch



FMI Pad/Flap assembly.

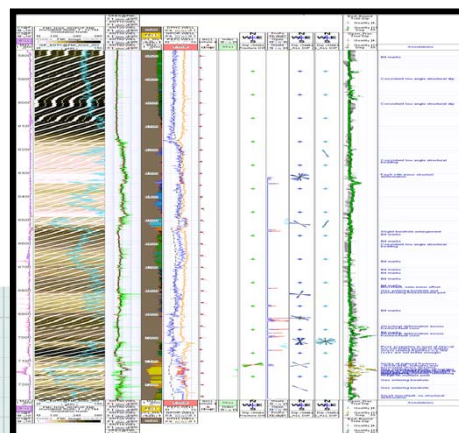
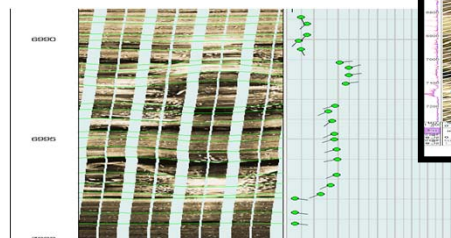
Borehole Imaging

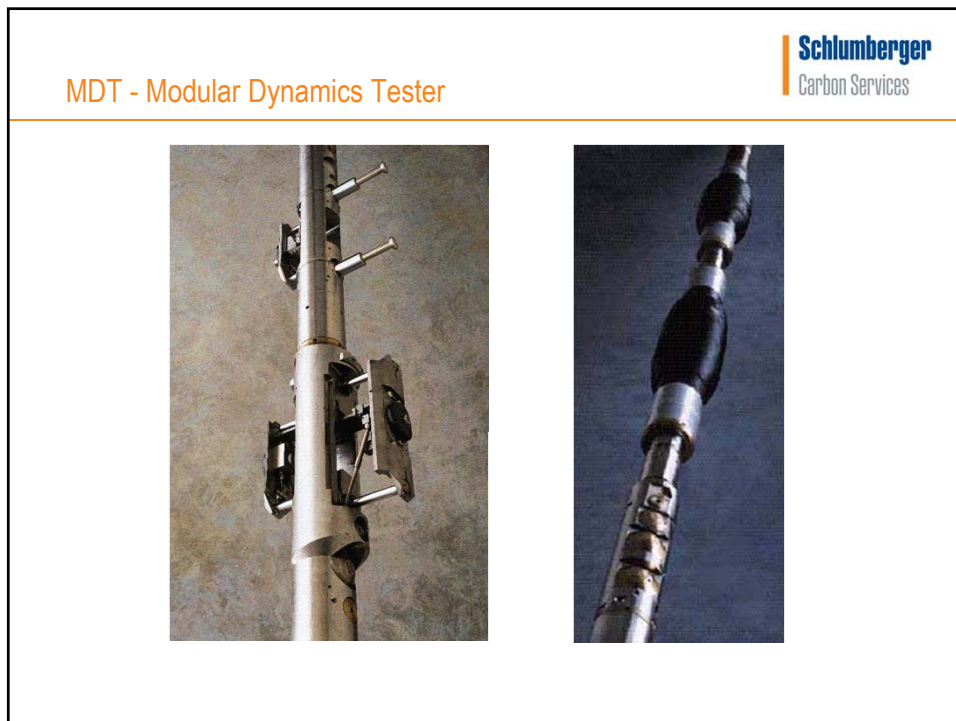
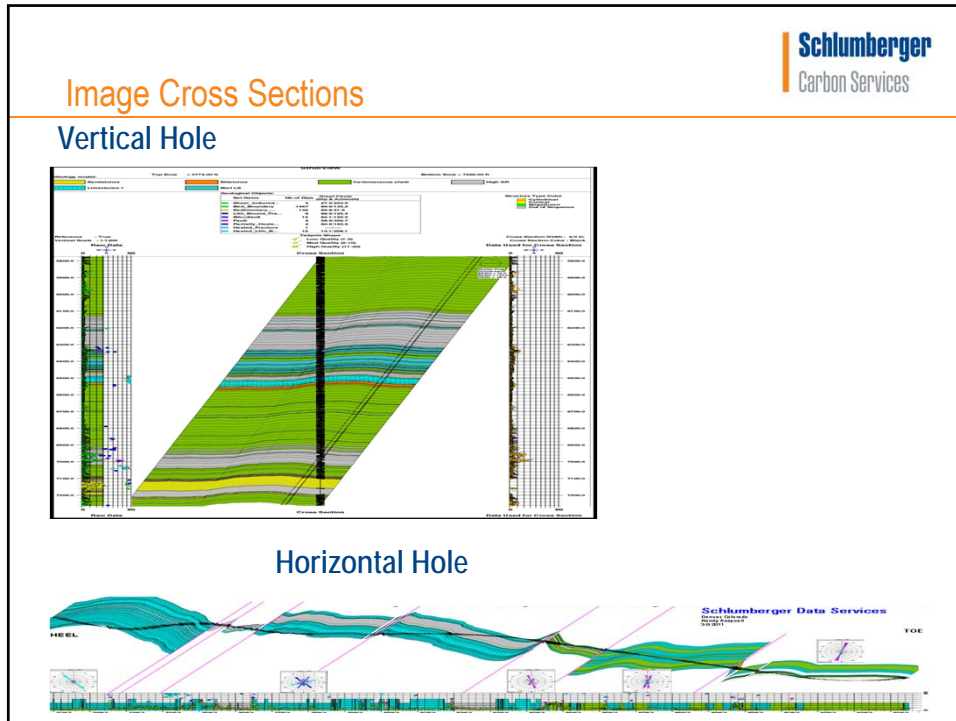
Bedding features are correlated into dip.

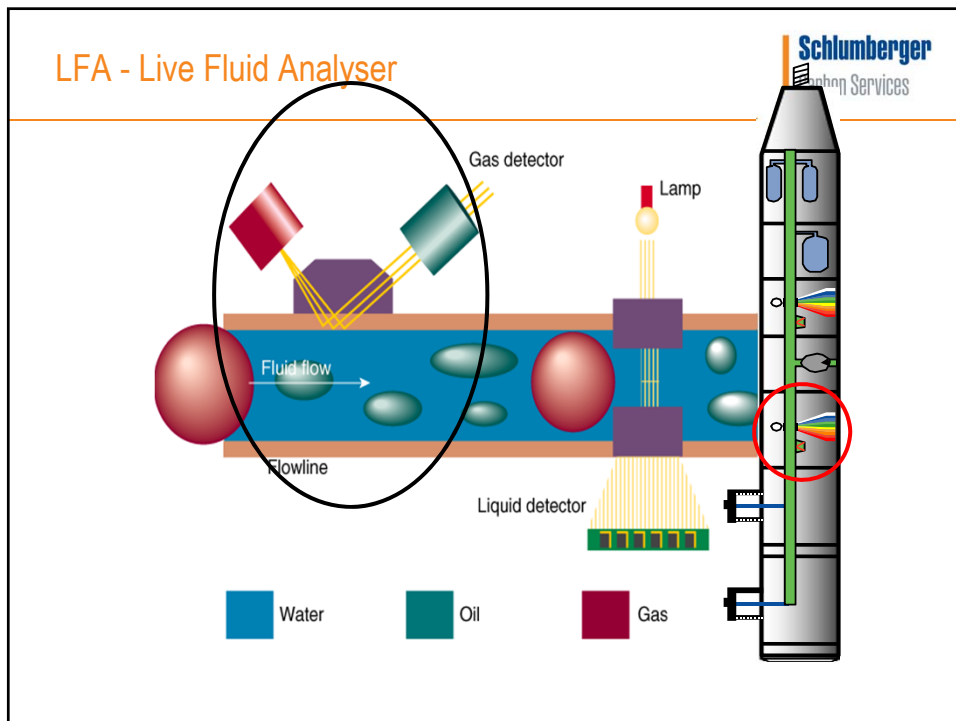
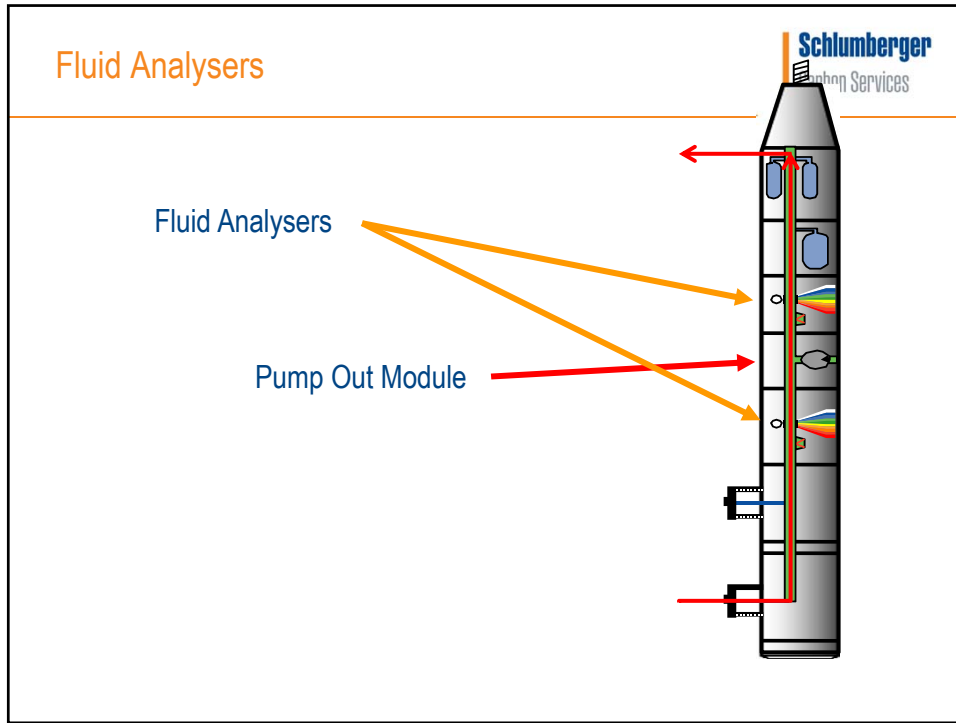
Flat vs. vertical.

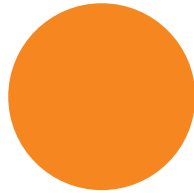
Bedding features, fractures, vugs...

Interpretation Logs



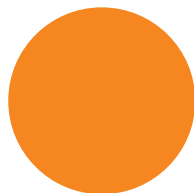
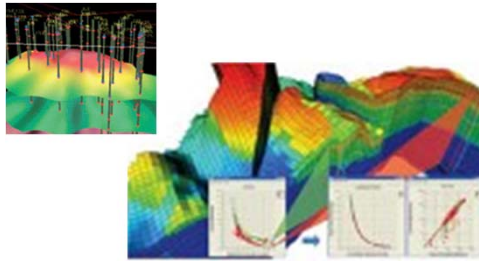






.....To Simulation

- Geologic
- Dynamic Injection
- Geomechanical



THANK YOU!

.....Questions?

Special Acknowledgements:
National Energy Technology Lab, California Energy
Commission, WESTCARB