NETL's Near-Surface Monitoring at the San Juan Basin Project Site

San Juan Basin project description:

» Enhanced Coalbed methane pilot operated by the Southwest Regional Partnership

» Injection at a rate of ~75,000 tons of CO_2 annually

» Injection to begin in late 2007

Near Surface monitoring techniques:

» Geophysical imaging and surveys

» Water-well chemistry monitoring and analysis

» CO_2 surface flux measurements

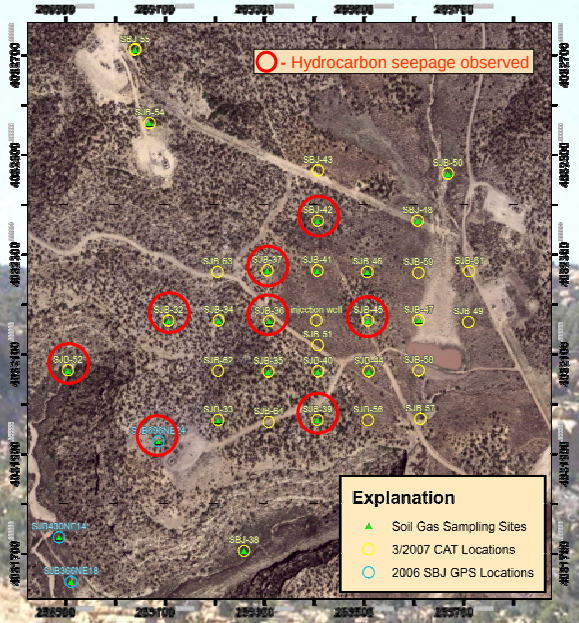
» Soil gas analyses

- CO_2 and stable carbon isotopes
- Light hydrocarbons
- Radon

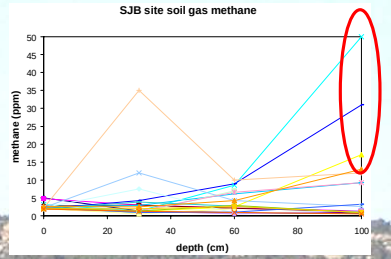
» Perfluorocarbon tracers

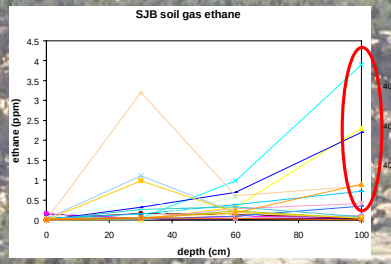
- Co-injected with CO_2
- Monitored in soil gas and atmosphere

Soil gas Monitoring Grid

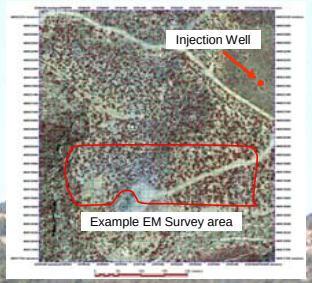


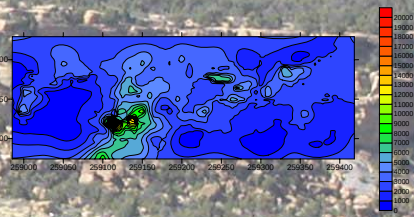
Hydrocarbon Depth Profiles

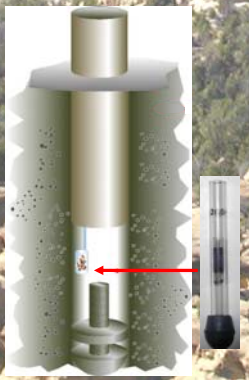




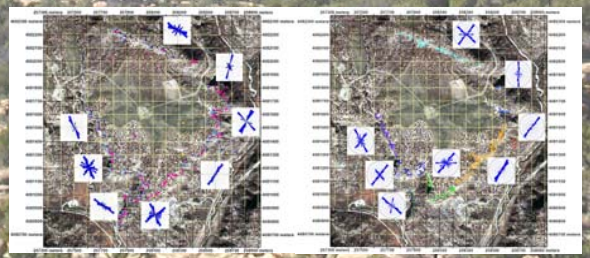
EM Conductivity Survey

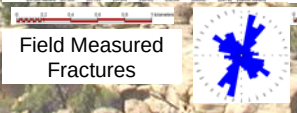


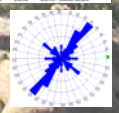




Surface Fracture Analysis







Preliminary results:

» 2 dominant fracture systems trending NE and NW respectively.

» 8 locations show clear hydrocarbon seepage, evident in soil-gas methane, ethane, and propane.

» Hydrocarbon anomalies are reproducible to the limited extent tested.

» Perfluorocarbons at typical background levels (no evidence of contamination of the site)

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