

# **Environmental implications of toxic metals and dissolved organics released as a result of CO<sub>2</sub> injection into the Frio Formation, Texas, USA**

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**Abstract:**

In this summary, we discuss results from a US DOE funded multi-laboratory field experiment to investigate the potential for geologic storage of CO<sub>2</sub> in saline aquifers, emphasizing environmental implications of changes in fluid chemistry after injection. Approximately 1,600 metric tons of refinery CO<sub>2</sub> was injected during October 2004 into a 24-m sandstone zone of the Oligocene Frio Formation – an extensive regional petroleum and brine reservoir (Fig. 1) in the U. S. Gulf Coast (Hovorka et al., 2006). We obtained down-hole and surface samples of formation water and gas from both the injection and observation wells using a variety of sampling tools and methodologies. Samples were obtained from both wells before CO<sub>2</sub> injection for baseline data, during the injection to track its breakthrough and post-injection to investigate the ‘residual’ CO<sub>2</sub> (Hovorka et al., 2006) and its leakage into the overlying “B” sandstone section, and temporal changes in fluid composition (Kharaka et al., 2006).

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