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Pressure Buildup Data Collection and Analysis from the Frio Brine Pilot

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As part of the Frio Brine Pilot, downhole pressure measurements were obtained from both the injection well and observation well throughout the injection and recovery phases of the test. In addition, a pre-injection interference test was used to obtain accurate information about the permeability and compressibility of the formation. By comparing the two data sets it is possible to obtain information on field-scale relative permeability during CO₂ injection. Both numerical and analytical techniques have been used to interpret the pressure transient data. Comparison between pressure transients at the injection well and observation well allow inference about changes in near-well permeability in the vicinity of the injection well. This is the first time a data set such as this has been collected for CO₂ injection into a saline formation, and the results provide important insights into the multi-phase flow behavior of CO₂. They also provide important information for predicting the injectivity of saline formations.