Case studies of the application of the Certification Framework to two geologic carbon sequestration sites

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Abstract:
We have developed a certification framework (CF) for certifying that the risks of geologic carbon sequestration (GCS) sites are below agreed-upon thresholds. The CF is based on effective trapping of CO₂, the proposed concept that takes into account both the probability and impact of CO₂ leakage. The CF uses probability estimates of the intersection of conductive faults and wells with the CO₂ plume along with modeled fluxes or concentrations of CO₂ as proxies for impacts to compartments (such as potable groundwater) to calculate CO₂ leakage risk. In order to test and refine the approach, we applied the CF to (1) a hypothetical large-scale GCS project in the Texas Gulf Coast, and (2) WESTCARB’s Phase III GCS pilot in the southern San Joaquin Valley, California.

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