The influence of aquifer mineralogy and trace gas composition on the potential impact of a CO_2 leakage on groundwater quality

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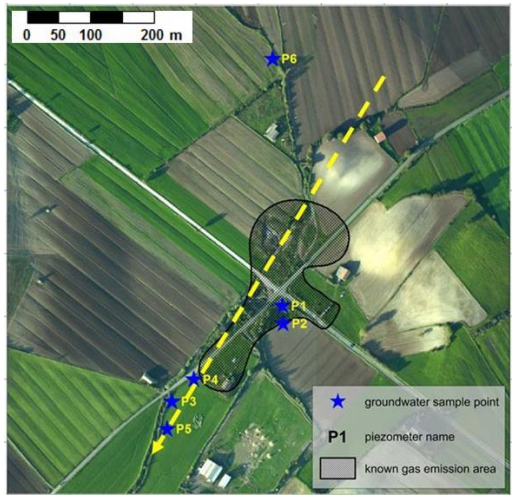
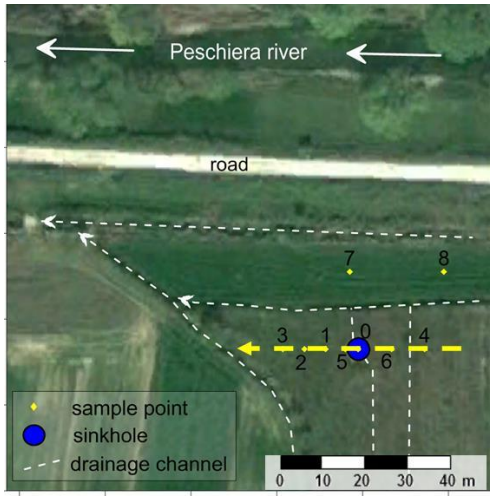
- two sites where geogenic CO_2 is leaking into the groundwater were studied to better understand potential impact on water quality
- 1) silicate mineralogy 2) carbonate mineralogy
- main leaking gas is CO_2, but with trace H_2S and CH_4. Site 2 is also an artesian spring.
- Sampled along flow: background, through leak, and down gradient





- As expected, a large difference in response.
- pH minimum buffered near 6 at carbonate site but dropped to 3.4 at silicate site
- Carbonate and sulfate complexes important in solubility controls
- Trace metals high in leakage area but appear to drop down-gradient. Possibly due to precipitation and sorption processes