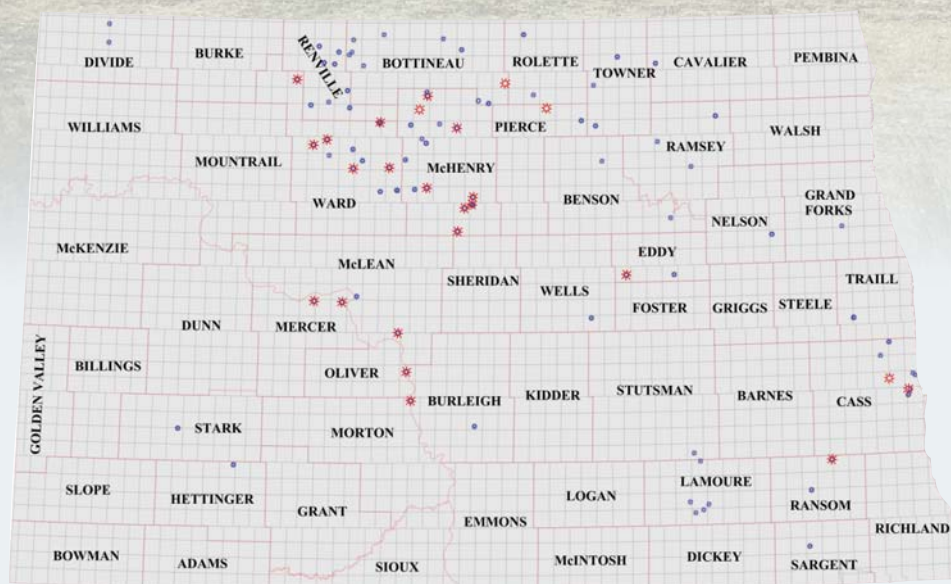


# Natural Gas Occurrences in Private Water Supply Wells Confirmed Across North Dakota

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Since the inception of the Shallow Natural Gas Program at the North Dakota Geological Survey in 2005, the Survey has received numerous anecdotal reports of occurrences of natural gas in private water supply wells. During the latter part of the 2012 field season (July-September) the survey investigated over 100 accounts of natural gas occurring in contemporary water supply wells at farms and residences across North Dakota from as far northwest as Crosby to as far southeast as Fargo (fig. 1).



A portable flame-ionization detector (FID) was used to test for the presence of combustible hydrocarbons in well water at farms and residences where it had been reported. Natural gas was detected in 25 wells.

Several of the anecdotal shows remain qualified as historical shows as the wells where natural gas was reported are either no longer in service or were likely abandoned many years ago. Several well owners visited during this field investigation reported their ability to light their water at the faucet, either in bathrooms or in the kitchen sink (fig. 2), and often commented that it was a source of considerable entertainment when guests, visiting from out of state, would marvel at the natural ignitability of the groundwater.

**Figure 1.** Locations of wells in North Dakota with anecdotally reported shows of natural gas. Wells with contemporary natural gas shows confirmed by the author during the 2012 field season are shown in red.

These results will be added to groundwater observation well field screening data we collected for the eastern part of the state between 2006 and 2010. The information will be used in the evaluation and selection of wells for further sampling and analysis of carbon-isotope geochemistry, which will provide clues as to the possible mechanisms of gas generation and potential sourcing systems.

**Figure 2.** An ignitable natural gas show at the bathroom sink, produced by water from a well at the Mayer farm in northwestern McHenry County. Mrs. Mayer commented that her well has produced groundwater with ignitable quantities of natural gas for several decades.

