Development of a Private Well Test Interpretation Tool for Ohioans
Anne Baird and Joe Bonnell

SITUATION
Ohio law requires companies drilling for oil and gas to take pre-drilling drinking well water samples within 1,500 feet of a proposed horizontal well and disclose the results to the property owner. As a result, many homeowners are receiving laboratory test results regarding the quality of their well water. State and local agencies have observed a significant increase in calls from homeowners asking for assistance with interpreting their lab test results.

Even before the rise in inquiries from well owners resulting from the shale gas drilling boom, staff at the Ohio Department of Health (ODH) and Ohio Environmental Protection Agency (OEPA) were concerned about the lack of awareness among private water well owners about the condition of their drinking water and best practices for monitoring and protecting their drinking water source from contamination.

The most common well water quality issues in Ohio include:
- Bacteria (e.g., coliform, cryptosporidia)
- Arsenic
- Iron and manganese
- Dissolved gases (methane & hydrogen sulfide)
- Organics (gasoline & oil)

Well Test Interpretation Tool
The well water test interpretation tool is designed to allow homeowners to enter their lab test results and get useful information about those results, including:
- How levels of contaminants in their well water compare to drinking water standards.
- Typical ranges found in Ohio drinking water wells.
- Major sources of contaminants.
- Recommendations for action (e.g., treatment options).
- Human health concerns.
- Links to additional information.

SOLUTION
Officials from ODH and OEPA approached OSU Extension about creating a web-based tool to help private well owners interpret lab test results and make informed decisions when a contamination issue is identified. The Ohio Water Development Authority awarded a grant to OSU Extension to accomplish the following objectives:
1. Identify existing well-owner education programs.
2. Identify the specific information needs of private water well owners in Ohio.
3. Create a private well owner educational curriculum for local health department and extension educators.
4. Create a private well-owner website and well-water test interpretation tool.

Collaborators
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METHODS
In collaboration with the Ohio Department of Health and Ohio Environmental Protection agency, the authors will complete the following:
- Literature review related to private well owner knowledge and awareness and educational interventions.
- Focus groups with well owners to identify gaps in awareness and knowledge related to well water testing, contamination risks, remediation, and best practices.
- Needs assessment of local health districts and county extension offices to identify information, curriculum, and training material needs.
- Educational curriculum and material development to meet identified needs.
- Website and well water test interpretation tool.

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Penn State study of rural water wells
Penn State recently sampled and tested water from 233 rural drinking water wells in the Marcellus Shale region before drilling. 40% of the wells tested did not meet drinking water standards and most well owners were unaware of the pre-existing water quality issues.