

NJ Tracking Collaborates to Improve Residential Private Well Drinking Water Quality

What was the problem/situation?

Approximately 13% of New Jersey residents (>1,150,000 people) obtain their drinking water from private residential wells. While water quality in public water systems is regulated and monitored under the New Jersey Safe Drinking Water Act, private well owners are responsible for monitoring and maintaining their well's water quality. Since 2001, private well owners in NJ have been required by the New Jersey Private Well Testing Act (PWTA) to provide well water quality results to a buyer prior to the sale of homes using a private well. Additionally, the PWTA requires landlords of rental properties with private wells to test and provide well quality information to tenants every five years. Under the PWTA, all private well test results must also be reported to the New Jersey Department of Environmental Protection (NJDEP). Current NJDEP data suggests that ~78% of New Jersey's private wells (312,000 out of 400,000) are untested, or have test results that were not shared with NJDEP.

This low rate of testing is an important public health problem, as regular well water testing is the first step private well owners must take to ensure that their water supply is safe to drink. Drinking water can be contaminated by natural sources, such as arsenic, radium, and uranium, or by man-made sources, including: agricultural run-off, industrial and commercial pollution, or lead plumbing fixtures. Approximately 10% and 9% of tested NJ private wells have been found to exceed safe levels for gross alpha and arsenic respectively.

How was Tracking involved?

NJ Tracking partners within the NJDEP Division of Water Supply and Geoscience collaborated with scientists from the Columbia University Superfund Research Program to help increase private well testing and mitigation in New Jersey. Tracking-partners at NJDEP and researchers at Columbia University utilized fine-scale geocoded private well data to identify which regions in New Jersey are at highest risk of

naturally occurring arsenic contamination in private well water.

During June of 2014, survey forms regarding attitudes, knowledge and beliefs about well water testing and treatment were mailed to more than 2,000 randomly selected residents located in 17 NJ towns with both a high-risk of elevated arsenic contamination and high residential private well utilization. After survey results were collected, outreach materials were sent in August 2014 to all 670 respondents and 1,273 non-respondents. The materials explained residents' vulnerability to naturally occurring arsenic in their well water, the potential health risks of arsenic exposure, and how to get well water tested. Multiple respondents stated the primary reason they had not previously tested their well water was that they had not known arsenic was a problem in their area.



Sample bottles were sent to 259 of the respondents to further encourage water quality sampling, and test response rate by test price (free versus \$40). Samples were returned for 119 residential wells, 74 of which had never been tested. Forty-two of the provided raw water samples (35%) exceeded arsenic standards. All individual test results were provided to the homeowners along with additional information and a [website link](#) detailing water treatment options.

What action was taken to resolve the problem?

As stated by Steve Spayd, NJ Tracking partner and NJDEP Research Scientist and hydrogeologist, "By collaborating with numerous partners in NJDOH, NJDEP, Columbia University, and elsewhere, I feel New Jersey is better able to assist well owners with private well testing and mitigation. During the last two years, we have identified our major needs and gaps, and created a detailed plan and activities to reduce exposure to contamination in well water. With over a million residents getting their drinking water from private wells, it's good to have partners like NJ Tracking to help us work across agencies to protect our families from contaminated water".

NJSHAD serves as the main data portal for NJDOH, providing public access to data and information from the entire New Jersey Department of Health, and hosts datasets for the New Jersey Environmental Public Health Tracking (NJEPHT) Program. NJSHAD provides static public health indicators which combine data and information, and dynamic custom public health query tools.