To: Governor Paul LePage
From: John McLaughlin
Date: April 6, 2012
Subj: Increasing Private Well Testing in the State of Maine

Summary

Maine has a drinking water problem. A recent statewide study of private wells shows several regions are considered high-arsenic clusters. Arsenic is an invisible and odorless carcinogenic toxicant that poses human health risks when ingested. Maine has a high percentage of private wells used for drinking water, but less than half of them have been tested. Testing is the only way to be certain of drinking water quality, yet neither the Federal Safe Drinking Water Act nor any Maine law requires private well testing. Because so many families on private wells are unaware of possible health threats posed by their drinking water, more must be done to raise Maine's private well testing percentage. While this memorandum focuses on the threat of arsenic in relation to the need for increased well testing in Maine, the proposed recommendations to improve Maine's private well testing percentage rate are also inclusive of testing for other prevalent drinking water threats.

Background

Maine's unique bedrock structure makes arsenic a sustained threat to well owners. Arsenic is a naturally occurring metalloid released into groundwater through the weathering of bedrock. Arsenic may also have slowly leached into groundwater through the inclusion of arsenic in 20th century pesticide and herbicide sprays.

Maine's recent public policy interest in private well water quality dates back to 2000 when Governor Angus King commissioned the study of levels of the gasoline additive MBTE in Maine groundwater. Many samples from the MTBE study contained high levels of arsenic. Studies were then commissioned to examine the scope and severity of arsenic contamination in Maine.

In 2002 the Federal EPA changed the arsenic safety standard from 50 parts per billion (ppb) to 10 ppb based on recommendations from the National Academy of Sciences.

From 2005-2009 the U.S. Geological Survey conducted a state wide study that examined Maine's private wells. The study focused on determining arsenic levels by collecting data from more than 11,000 wells in 530 Maine municipalities.

In 2007 the Maine Legislature took up L.D.1775. The legislation would have required private well testing during the sale or transfer of real estate property. The Maine Center for Disease Control (MCDC) opposed the bill in its final form because additions to the bill made it too unwieldy for the MCDC to manage without the commitment of additional General Fund revenue. The Maine Association of Realtors also opposed the bill because it placed real estate agents in a quasi-law enforcement role and because real estate agents already distribute well water quality information.

In 2010 the U.S. Geological Survey (USGS) released their study results which demonstrated for the first time that Maine has three large high-arsenic clusters: Southern Coastal, Greater Augusta, and Down East. The study found that 18% of private wells in Maine have levels of arsenic above the federal standard of 10ppb.

In October of 2011 a DHHS review panel turned down $70,000 federal grant request intended to broaden an information campaign to promote testing of private wells.

Issues & Concerns

The overall health of Maine families is a concern when placed in relation to elevated levels of toxicants in drinking water. The National Cancer Institute cites a relationship between taking in even small amounts of arsenic over time, and skin, bladder, and lung cancers. Dr. Dora Mills, former head of the Maine Bureau of Health, viewed arsenic in Maine well water as a prime suspect in bladder cancer. In 2002 Maine had the highest bladder cancer mortality rate for men in the nation. In 2007 the Maine Cancer Registry's annual report found that Maine had the highest overall cancer incidence rate in the nation. Maine's cancer rate did not follow the national trend of declining rates. Arsenic is also linked to intellectual development problems in children. Columbia University studies of elementary school children in Bangladesh, Maine and New Hampshire show a link between drinking water with elevated levels of arsenic and a lowering of IQ test scores.

One issue central to a discussion of increasing private well testing is determining a context of what home owners should test for. Certified water testing labs in Maine offer tests that range from a single test for a specific issue to an extensive battery of combined tests. The MCDC recommends Maine private well owners use a $70 test package named "BA". The package screens for bacteria, nitrates, fluoride, chloride, hardness, copper, iron, manganese arsenic and uranium. The items screened by the BA test address the most prevalent water quality issues in Maine.

Another concern worth considering is whether a test result indicating corrective action is warranted actually leads a well owner to take corrective action. A 2007 study by The Center for Rural Pennsylvania indicates that increased awareness of well water problems *does* lead homeowners to take corrective action. In the study, 700 private wells were tested, and follow up survey results showed an impressive 76% of homeowners with wells that failed a drinking water standard took action to correct or better manage their water problem.

The quality of public health information being distributed to well owners is also of concern. For example the Maine Association of Realtors voluntarily distributes to home buyers an outdated 2002 Maine Bureau of Health brochure titled "Arsenic in Well Water". The brochure presents the old 2002 federal EPA standard of 50ppb as the current standard, when the current standard is actually 10ppb. The brochure also cites 10% of private homes having high arsenic wells when USGS research has placed the percentage at 18%. Web addresses in the brochure intended to lead readers to further information are of no use as they are no longer active.

While increased spending is almost always a concern for policy makers, when the Maine Legislature did not pass L.D. 1775 in 2007 the spending climate was less of a concern than it is today. The national financial crisis of 2008 that impacted Maine continues to influence Maine revenue and spending priorities. This means that policy options designed to raise Maine's private well testing percentage need be creative or common sense solutions that are either spending neutral or nearly spending neutral in order to win approval. The policy options that follow keep this fiscal context in mind.

Options

Maintain the status quo: The MCDC has been distributing printed well water quality information to Municipalities with a high proportion of residents with private wells for years. The MCDC has conducted surveys on the effectiveness of their information campaign, and results between 2004 and 2009 registered a 14% uplift from 26% to 40% of Maine households who knew whether their well had been tested. This demonstrates that routine distribution of information leads to greater well water quality awareness.

Improve the quality of distributed public health information: Distributed public health information related to well water quality could be reviewed to make sure it is accurate and up to date. In the case of arsenic, the distribution of outdated information has the effect of under-representing health standards and

risks. Under representing risks may give well owners a false impression that leads to a reduced sense of urgency to test, while accurately representing health standards and risks may lead more well owners to test.

Improve the scope of information being collected: Each of Maine's 11 certified water testing labs conducts well water testing, yet only test results collected by the State of Maine Public Health & Environmental Testing Lab (HETL) in Augusta are used by the state to develop an understanding of Maine private well water quality. Including test results from every certified water testing lab would create a better representation of Maine's well water quality that could help Maine target efforts to improve private well testing to communities at greater risk.

Pass legislation making newly drilled well testing mandatory: This option is modeled in part on legislation approved by the Vermont Legislature in 2011 but vetoed by Governor Peter Shumlin. Well testing would be conducted after construction of the well, and licensed well drillers would be among those authorized to test. The test would be paid for by the consumer. In Maine, the recommended test for new wells costs $70 and screens for bacteria, nitrates, fluoride, chloride, hardness, copper, iron, manganese arsenic and uranium. Results would be presented to the home/property owner and added to a Maine private well water quality database.

Recommendations

The MCDC should continue its public information campaign directed at town offices in municipalities with a high proportion of residents with private wells. The Maine CDC should also use existing grant monies to target public information to Pediatric offices in the three high-arsenic regions of Maine. Getting well testing information into the hands of families with young children is important because of the intellectual development threat posed by arsenic, and because early action to reduce health risks leads to long term health benefits.

Maine's Division of Environmental Health should use existing staff to review well water quality information currently distributed by organized interests in Maine for its accuracy and effectiveness. Outdated literature should be replaced with the Maine Center for Disease Control's up to date literature. For example the MCDC's "Is Your Water Safe to Drink?" brochure is accurate, reader friendly and quite comprehensive in its scope. The brochure is a guide to well testing that leads readers toward screening for Maine's most prevalent well water quality threats. The brochure covers arsenic, radon, uranium and germ issues. It also offers contact information for the MCDC, certified water testing labs, and several helpful websites. Outdated literature has the capacity to under represent health risks, which can have the effect of diminishing a home owner's sense of urgency to have their water tested. An accurate representation of current standards would incentivize well testing by placing more homeowners into a context where the case to go forward with well testing is made stronger.

Maine should pass legislation requiring that certified water testing labs be digitally linked with the State of Maine Public Health & Environmental Testing Lab (HETL) in Augusta. Currently, only test results from the HETL lab are entered into a database that the state uses to better understanding Maine private well water quality issues Digitally linking the labs would allow datasets collected from the 10 other certified labs to be integrated into the Augusta lab's database. Data integration would lead to a more thorough understanding of well water quality issues in Maine which could be leveraged to target information campaigns and testing recommendations more effectively. New Jersey has been integrating data from all certified labs since 2001. This has led to robust datasets that enable New Jersey to target specific tests for each county. Comprehensive testing is no longer needed for many counties. Targeted testing is less expensive for well owners, and lower testing costs act as an incentive for well owners to test.

Conclusion: The prevalence of unhealthy toxicants such as arsenic in Maine's ground water and the low level of well water testing make raising well water quality awareness an urgent public information and public health issue for Maine. As a steward of Maine families, state government has the expertise, infrastructure, and duty to better inform private well owners of the invisible and odorless health risks their private well water may hold. The recommendations outlined in this memo are reasonable and responsible choices that state government should adopt as soon as possible in order to strengthen and quicken the pace of raising Maine's private well testing percentage.