Pipes

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faucets, valves and fittings — that contain lead. When water sits for several hours in contact with lead solder, the heavy metal begins to leach into the water.

If water has sat in pipes with lead components for several hours, run the water for two to three minutes before cooking or drinking to flush out any lead that may have leached. "My advice to people: Don't drink stagnant water," Page said. "Our pond isn't going to dry up if everyone runs the water for two minutes."

Since the 1980s, the federal government has taken measures to reduce the risk of lead exposure in drinking water. In 1986, lead solder was taken off the market after Congress banned its use. In 1991, under the lead and copper rule, the EPA mandated that public water systems test for lead contamination. Since 2014, federal law prohibits plumbing fixtures from containing more than 0.25 percent lead; previously, fixtures could contain up to 8 percent lead and still be advertised as "lead-free."

Homes built since 1986 have almost zero risk of lead exposure.

Still, people living in older housing stock outfitted with older plumbing remain at risk. Even within one neighborhood, the level of potential lead exposure varies from one house to another depending on how much lead is in the plumbing.

For water district and public health officials, it is difficult to monitor and determine the level of lead exposure because the heavy metal commonly gets into the water only after it leaves treatment facilities, according to a 2009 report in the journal Environmental Health Perspectives.

So the Bangor Water District can do little other than continually assess whether its water chemistry and treatment process is adequate to ensure that residents of Greater Bangor have minimal risk of lead exposure.

JIM YOUNG | REUTERS

Lagretta Hinton (center) of Flint, Michigan, gets her blood tested for lead poisoning by Lashae Campbell as she holds her grandson Shawn Bozier on March 6. The city's drinking water has been contaminated with dangerously high levels of lead.

How to limit lead contamination

The U.S. Environmental Protection Agency estimates that 14 to 20 percent of an individual's lead exposure comes from drinking water. Even small amounts of lead can cause serious health problems.

Here are some steps to take to minimize the risk of lead exposure in your home:

— **The EPA recommends** testing your tap water if your plumbing was installed before 1986. Most home improvement stores sell lead testing kits you can use to collect water samples to send to certified laboratories. The Maine Drinking Water Program has a list of certified labs at 1.usa.gov/1RPNr89. For more information about which labs are certified to test for lead, call the Maine Drinking Water Program at 287-2070 and ask for the laboratory certification officer.

— **When your water** hasn't been used for several hours, run cold water through your tap for two to three minutes before drinking or cooking to flush out any lead contaminated water. Lead dissolves more easily in hot water, so be sure to use cold water from a flushed faucet to cook, drink or prepare baby formula. Boiling water will not remove lead contamination.

— **Some water filters** can be effective at removing lead from your drinking water. NSF International, a private organization founded in 1944, tests and certifies water filters. Under NSF standards, a filter must demonstrate that it can reduce lead contamination from 15 parts per billion to under 10 parts per billion. To learn whether a particular brand of filter has been certified by the NSF, visit bit.ly/1Vb10OE.

— **Although more costly,** the surest way to reduce lead exposure is to replace old plumbing fixtures with newer, lead-free products. Since 2014, no plumbing fixture under federal law can contain more than 0.25 percent lead; previously, fixtures could contain 8 percent and still be advertised as "lead-free."

Action level

When the Bangor Water District tested household taps for lead in 2010, it found that eight of 46 test sites had levels between 18 parts per billion and 60 parts per billion.

Before that, lead levels had only once reached the maximum accepted threshold of 15 parts per billion set by the federal government — in 2002. The water district has monitored lead levels since 1992, when the the lead and copper rule took effect.

Under the rule, at least 90 percent of households must have lead levels at or below 15 parts per billion. If too many households exceed the lead threshold, the water system must inform the public and take steps to reduce contamination.

This threshold, however, is a regulatory measure, not a health-based one, according to a 2011 report by the EPA Science Advisory Board. Ideally, the maximum level of lead contamination is zero. Rather, this threshold acts as a red flag for public water systems to adjust their treatment processes or replace lead service lines, if they exist.

No amount of lead is safe to consume. Even small doses are dangerous, especially for children and pregnant women. In children, lead can cause learning disabilities and behavioral problems, among other complications. Adults also can suffer health issues from lead exposure, including high blood pressure, kidney problems and cancer.

Based on the population it serves across seven municipalities, the Bangor Water District must monitor at least 30 households under the federal lead and copper rule. Page said the water district focuses on monitoring for lead in houses built between 1982 and 1986.

Houses built before 1986 are more likely to have plumbing with lead-soldered joints than those built after lead solder was taken off the market. But in houses built before the 1980s, the plumbing has likely built up a coating of minerals in the plumbing that acts as a buffer between the water and any lead solder, reducing the risk of leaching.

The water district does this because it is modeled on worst-case scenario conditions, Page said. If older houses likely to have lead-soldered joints show low lead levels, then the chances of elevated lead elsewhere in the water system are low. But if those households show elevated lead levels, the water district needs to determine what caused the spike and what's needed to lower those levels.

After it detected higher levels of lead in 2010, the Bangor Water District had to elevate its monitoring from once a year to every six months, as well as double the number of households tested from at least 30 to 60.

A solution

What caused the sudden spike in 2010 was a matter of water chemistry. In Maine, surface water sources, such as Floods Pond, tend to have a lower mineral content than groundwater, making them more acidic. As a result, Maine water naturally falls around a six on the pH scale.

(A quick chemistry primer: The pH scale ranges from zero to 14. Between zero and six on the scale is acidic; eight to 14 is basic. A seven is neutral.)

But when naturally acidic water is devoid of minerals, it tends to make the water more corrosive. "The more pure the water, the higher the risk of corrosion," Page said.

And it's this corrosion of older fixtures and lead-soldered joints that feeds lead into the tap water. But adding some minerals back into the water neutralizes the acid, raising the pH level. Plus, the addition of minerals builds up a buffer between the water and the plumbing to reduce the risk of corrosion over time.

After the 2010 spike, the Bangor Water District added sodium carbonate to the water to increase the pH to about nine, similar to milk of magnesia. This change caused lead levels to fall over the last five years to the lowest they've been in years, Page said.

During the water district's second round of testing in 2013, lead levels began to drop off, with only four of 60 test sites showing lead levels in excess of the EPA threshold; 90 percent of sites had levels below 11 parts per billion. In the first six months of 2014, the number of test sites in excess of the EPA threshold fell to two of 60, with 90 percent showing levels below 8 parts per billion. This decline was sharp enough for the EPA to take the water district off elevated monitoring.

In the most recent round of testing in 2015, only one of 30 test sites had a lead level above the acceptable threshold; 90 percent of test sites showed levels below 4 parts per billion.

Until all lead is gone from household plumbing, lead monitoring will be an ongoing concern for the Bangor Water District and other public water systems. Page said the water district is monitoring the water chemistry every day in an effort to reduce corrosion and minimize households' risk of lead exposure.

"We've experienced a steady decline in those results but this is a process where every time you go to monitor, there are so many variables," Page said.

Cancer

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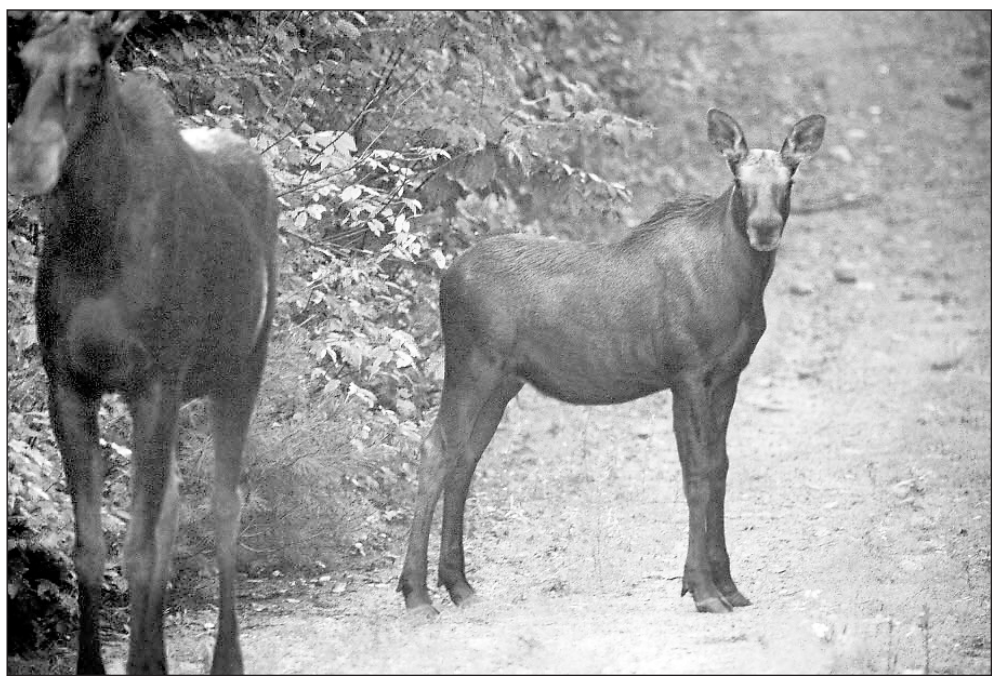
I now have the great honor of accessing that sense of responsibility in my job each day. I consider it a great privilege to contribute in any way — no matter how small — to the remarkable work being done at EMMC Cancer Care to stop the vicious predator that is cancer.

Cancer has changed me. The fear it once instilled has been replaced with hope, exponentially more potent; the monotony of daily tasks has been renewed with deep appreciation and wonder; and the dread of the future has been overwhelmed by a belief in the brilliant, compassionate minds that seek relentlessly to find a cure.

I have often said that research brings tomorrow's hope to today's patient; I will continue as long as I have breath to work for research so that others will, like me, be able to say, "I had cancer, and it no longer has me."

Jenifer Lloyd has served as a philanthropy officer for the EMHS Foundation since 2010 with primary responsibility to EMMC Cancer Care. She lives in Hampden.



BDN FILE

Two moose on land owned by Elliotsville Plantation Inc. in 2013. EPI proposes to donate 87,000 acres it owns to the National Park Service.

Park

Continued from Page D1

impoverished region or it represents the surrender of Maine's traditional values and economic base to the tyranny of federal land ownership. For my own part, I later helped to organize and wrote the charter for the Maine Woods Coalition, incorporated in 2001 specifically to oppose creation of a national park in northern Maine. Greenville's town manager, John Simko, and former Millinocket Town Manager Gene Conlogue were leaders in that effort.

But I am chagrinned to think and here publicly confess for the first time that the entire decades-long controversy may well be the result of a seed inadvertently planted by two guys here on vacation, from away.

Erik Stumpfel is a lawyer with Rudman Winchell law firm in Bangor. He is a 28-year resident of Guilford and Sangerville in southern Piscataquis County.

BDN FILE

Marcia Bond of Veazie signs a roster at the Penobscot County Republican caucus on March 5.

Maine could be pivotal in US primary

BY VIC BERARDELLI
SPECIAL TO THE BDN

The turnouts over the weekend of March 5 and 6 demonstrated the average Maine voter's hunger for being included in the presidential nomination process. On March 5, lines snaked through parking lots as Republicans turned out in record numbers for caucuses, and the same scene replayed the next day as grass-roots Democrats showed up to make their voices heard.

It is time for Maine to open the process with a formal secret vote primary.

However, Sen. Eric Brakey, R-Auburn, made a valid point during hearings on LD 1673 — which would have Maine vote in primaries as opposed to caucuses for presidential candidates — when he noted that primaries are the internal concern of political parties, and it would be unfair for the four in 10 registered voters who do not affiliate with a political party to foot the bill for an extra primary.

Estimates range from between $1 million to $2 million to open the polls statewide in every precinct for an exclusive presidential primary.

The simple solution would be to hold the presidential nomination balloting on the same day as the regular local primaries held in June, when no additional expenses would be required.

Some professional politicians bemoan this idea because they want to be players early in the process. However, the nation's largest state has long held presidential primaries as part of its regular June election.

California legislators said voters registered in a party had every right to voice preference for a nominee, but the costs of a separate presidential primary would have to be paid by the political parties instead of the taxpayers. So the Golden State waits until June.

If it is good enough for the most populous state in the country, why isn't it good enough for Maine?

Although in recent years California has been an afterthought because the nominees were well decided by June, its primary can be significant. In 1964, conservative Arizona Sen. Barry Goldwater and liberal New York Gov. Nelson Rockefeller were locked in a tight battle for the GOP nomination. California's June primary was the decider with its large number of delegates tipping the scale. The nascent conservative movement had well-organized grass-roots activists at the precinct level, and Goldwater won California, assuring the Republican nomination.

The same scenario looms this year.

Despite her lead in the superdelegates (elected officials with strong party ties who get automatic delegate seats), former Secretary of State Hillary Clinton is still locked in a battle with Vermont Sen. Bernie Sanders for grass-roots delegates. If he can keep close in the intervening primaries and caucuses, California could be the swing vote in June.

California could be even more significant on the Republican side. If Texas Sen. Ted Cruz manages to close the delegate gap with business magnate Donald Trump, then the Golden State primary might swing the nomination. If the Stop Trump movement of party insiders manages to stall Trump's surge to outright majority, so that they can have a brokered convention, California might be the key player.

Early primaries make some sense to winnow out weaker candidates and narrow the field. In a tightly contested race, that makes the later decisions in June all the more significant because the June states become power brokers and carry more clout.

Little Maine could become as important as giant California.

New Hampshire and Iowa maneuver to schedule the first-in-the-nation primary and caucus less for political reasons than economic. Those two states generate a lot of revenue from all of the candidate entourages and media hordes coming in the dead of winter when sparse tourism visits keep hotels and restaurants empty.

Voters need to have a say. Structured properly, primaries would dilute the influence of party bosses and give party leadership a signal from the grass roots.

The caucus results told them that there are more progressives in Maine than the labor-bureaucrat Democrat insiders acknowledged and that there are more conservatives and libertarians in Maine than the country club Republican insiders recognized. That's the way it should be. For good or bad, parties should reflect those who identify with them instead of whom insiders dictate.

However, more Maine voters register unenrolled with a political party. They, too, should be respected, especially because they pay taxes to open the polls. And they're not subsidizing political parties exclusively by paying for a June primary because they can take non-party ballots at that time to vote for referenda and for selectmen, town councilors and school board members in some municipalities.

Sen. Justin Alfond, D-Portland, demonstrated the arrogance of leadership from both political parties when he said at the LD 1673 hearings, "I don't see why any unenrolled voter is disenfranchised or is paying for something they can't participate in. They just have to decide to enroll in a party."

There is good reason why nearly 41 percent of Maine voters do not enroll in a party. They're fed up with professional politicians and more than willing to let political parties pick their candidates. Presented the choices, they'll let you know when they vote in November whether your party made a good choice or not.

Vic Berardelli is a retired political consultant and author of "The Politics Guy Campaign Tips — How to Win a Local Election." Now an unenrolled independent voter, he is a former Republican State Committeeman and former member of the Republican Liberty Caucus National Board.