

STATE HEALTH OFFICIALS FIND LOW CONCENTRATIONS OF RADIOIODINE (I-131)
IN RAINWATER SAMPLE COLLECTED IN BOSTON; NO RISKS TO HEALTH EXPECTED
No impact on state drinking water supplies

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The Massachusetts Department of Public Health (DPH) today announced that very low concentrations of radioiodine-131 (I-131) likely associated with the Japan nuclear power plant event have been detected in a precipitation (i.e. rainwater) sample taken in Boston. The sample location is one of more than 100 locations around the country that are part of the U.S. Environmental Protection Agency (USEPA) Radiation Network (RadNet) monitoring system that routinely monitors for radioactivity in environmental media. Air samples at the same Boston location have shown no detectable radiation. There is no health impact to state drinking water supplies as a result of these findings, and state and federal health officials emphasized that there are no anticipated health risks to the public.

The concentration of I-131 was 79 pCi/L (picocuries per liter). The precipitation sample was taken during the past week, with results available today following analysis and confirmatory testing by the DPH Radiation Control Program. Similar testing in other states, including California, Pennsylvania and Washington, has shown comparable levels of I-131 in precipitation samples. Federal officials have indicated that such findings would likely be found in multiple locations across the country, with some variation due to weather patterns.

Historically, precipitation samples have shown I-131 following several nuclear events, such as atomic bomb tests, Three Mile Island, and Chernobyl. Precipitation samples after these historical events have ranged from approximately 70 to over 4,000 pCi/L of I-131. No ill health affects in Massachusetts have been associated with these past temporarily elevated radiation levels.

I-131 has a short half-life (the time that it takes for half of the radionuclide to break down) of eight days. Detecting a concentration of approximately 79 pCi/L in precipitation would mean that it becomes undetectable in a relative short time, assuming no continuing source.

DPH Commissioner John Auerbach emphasized that the sampling results show no risk to state drinking water supplies. "The drinking water supply in Massachusetts is unaffected by this short-term, slight elevation in radiation. However, we will carefully monitor the drinking water as we exercise an abundance of caution." he said.

It is important to note that any I-131 concentrations detected in rainwater samples are significantly higher than might be detected in a surface water body, such as a lake or pond, because anything falling with precipitation would be greatly diluted once in the water body. In addition, standards that are established for the group of radionuclides including I-131 are based on a lifetime of daily exposure. Given the short half-life of I-131 and the likely significant dilution of any precipitation that may contain I-131 once falling into a water body, health officials do not expect health concerns associated with levels currently being reported. Nonetheless DPH has worked with the Massachusetts Water Resource Authority (MWRA) to collect raw drinking water samples from the Quabbin and Wachusett Reservoirs last week as part of an expanded monitoring system. Results of this testing showed no detectable levels of I-131 in either body of water.

USEPA also reported this week that four RadNet sites on the West Coast (Riverside, CA; San Francisco, CA; Anaheim, CA; Seattle, WA) had levels of I-131 in ambient air ranging from 0.003 to 0.01 pCi/m³. USEPA characterized these results as hundreds of thousands to millions of times below levels of concern. In a typical day, Americans receive doses of radiation from natural sources like rocks, bricks, and sun that are about 100,000 times higher than what has been detected coming from Japan. In Massachusetts all measured air samples have had undetectable radiation levels.

DPH will continue to monitor precipitation and ambient air samples for the presence of radionuclides that may be associated with the Japan event and to assess trends, whether increasing or decreasing. As an added precaution, DPH will also work with the state Department of Environmental Protection to collect and analyze additional drinking water samples (where the drinking water source is a surface water body) for the presence of I-131.