



**FREQUENTLY ASKED QUESTIONS:
RADIATION SAMPLING IN MASSACHUSETTS
April 1, 2011**

When and how was I-131 found in rainwater in Massachusetts?

I-131 was detected in a rainwater sample collected on March 22, 2011 at a routine monitoring station in Boston. The Massachusetts Department of Public Health (DPH) participates in the USEPA Radiation Network (RadNet) monitoring system. RadNet has about 180 sites across the US that routinely monitor for radioactivity in the environment. Preliminary results were available by Thursday evening, March 24th and confirmatory testing showed a level of 79 pCi/L of I-131.

Are these rainwater samples taken elsewhere in Massachusetts? If so, what have those results shown?

The rainwater sample collection site in Boston is the only location in Massachusetts where such samples are taken.

Can we expect to continue to see I-131 in rainwater samples in Massachusetts?

Until the Japan nuclear plant is stabilized, trace amounts of I-131 may continue to be detected as it rains in Massachusetts. However, levels will remain significantly lower and not of any health concern.

Has I-131 been detected in any air samples in Massachusetts?

An air sample collected on March 29, 2011 showed a very low concentration of I-131, similar to what is being reported around the country. USEPA reports that the I-131 concentrations at these levels are hundreds of thousands to millions of times below levels of concern.

Should I be concerned about I-131 in Massachusetts water supplies?

No. I-131 concentrations in rainwater are considerably higher than what might be detected in a surface water body. Any I-131 deposited would be greatly diluted once it falls onto a water body. In addition, DPH worked with MWRA last week to collect raw drinking water samples from the Quabbin and Wachusett reservoirs as part of the commonwealth's expanded system of watchfulness in relation to events in Japan. The results of both of those samples tested showed no detections of I-131.

How did I-131 show up in rainwater samples?

The I-131 found recently in rainwater is likely the result of atmospheric conditions. The trace amounts of I-131 have been trapped in cloud formation and moved across the US as

part of weather patterns. Recent precipitation in Massachusetts deposited I-131 in sample collection containers.

Have other states detected I-131 in their rainwater and or the air?

Yes, the radioisotope has been found in many states. It was first detected in air and rainwater on the west coast and these trace amounts of I -131 have moved east.

Will DPH be conducting more tests of air and water samples for I-131 or other radioisotopes ?

Yes. DPH will continue its monitoring efforts through the RadNet system. In addition DPH and the state Department of Environmental Protection (DEP) will be taking representative samples of surface water drinking water supplies across the state beginning today (March 27, 2011). Results of these tests will be released as soon as they are available. Samples will be collected by DEP and sent to the state Environmental Radiation Laboratory in Jamaica Plain. Due to the processing time and laboratory capacity results will take 2-3 days for each set of samples collected (two each from each area tested).

Will there be any testing of foods, such as milk?

As part of ongoing federal safety requirements, there is regular testing of milk and other selected foods for radioactivity and other potential contaminants. The federal standard for I-131 in food is 4,600 picoCuries per kilogram of food product; for milk, this would be about 4,600 picoCuries per liter. This monitoring by the federal officials will continue in Massachusetts and other states.

What is Iodine-131?

Iodine-131 (I-131) is a radioactive form of the element iodine, also referred to as radioiodine. I-131 is in a class of radioisotopes called “beta emitters”. I-131 is a byproduct of nuclear energy production. It is also used in medicine to diagnose and treat disorders of the thyroid gland.

Once detected, how long does I-131 remain in the environment?

I-131 has a short “half-life” of 8 days. This means that in 8 days, half of the original I-131 will have decayed to a stable (non-radioactive) state. That level will be half again in 8 more days and so on.

How is the radioactivity of I-131 measured?

Radioactivity is measured in units called Curies. In small quantities, the radioactivity of I-131 is measured in picoCuries. A picoCurie is one-trillionth of a Curie, or 0.000000000001 of a curie. An even smaller unit of radioactivity is a femtoCurie, which is one thousand times smaller than a picoCurie.