

Meeting notes from 1/23/2012 discussion with Senator Ottiano and three constituents.

Resident concerns:

Senator Ottiano and several constituents raised concerns to the Rhode Island Department of Health about the safety of the neighborhood adjacent to the capping operation of the Island Park landfill in Portsmouth. Specific concerns included exposures to contaminated soil associated with: jogging by the site, using picnic tables near the beach, waiting for the bus, raising vegetables and using outdoor grills. Robert Vanderslice, PhD, Healthy Homes and Environment Team Lead with the RI Department of Health, responded to the concerns at a meeting on January 23, 2012.

Response:

Concerns about exposure to contaminated soil have a sound basis. We all consume a little soil everyday. Soil can adhere to home-grown lettuce, greens or root vegetables, and this soil can be consumed if these vegetables are not thoroughly washed. Soil that gets on our hands can be ingested if we eat or smoke without first washing our hands. Because children routinely put their hands and toys in their mouths as they play, they tend to ingest more soil than adults. Soil can be ingested if food is put directly on picnic tables or grills that have not been cleaned first. People running by the site may breathe in dust, which is then trapped in the upper airways and swallowed. Young children may get soil on their hands as they wait for the bus and ingest this soil if they put their hands in their mouths.

The RI Department of Health has evaluated these exposures using federal guidelines established by the US Agency for Toxic Substances and Disease Registry (ATSDR) and standard US Environmental Protection Agency (EPA) soil ingestion estimates (200 mg soil ingested per day for children, 100 mg/day for adults). Even at the highest soil concentrations of arsenic allowed to be brought to this site of 42 ppm arsenic, short-term exposures are well within ATSDR exposure guidelines. All arsenic levels of soil brought to the site have been below 30 ppm, and have averaged well below 20 ppm. Evaluation of long-term exposures to these soils is also within ATSDR guidelines. This evaluation is consistent with the fact that the residential soil standard for arsenic in Massachusetts is 20 ppm.

Neither the ATSDR guidelines nor the Massachusetts soil standard take into account the EPA cancer risk models for arsenic exposures. For chemicals that may cause cancer, Rhode Island usually sets residential soil standards based on a one-in-one-million lifetime cancer risk level. This is the level that would cause one excess cancer in a population of one million people exposed for a lifetime. Setting an arsenic standard for soil at a one-in-one-million risk is not feasible because background arsenic levels already exceed this level of concern. The RI residential soil standard for arsenic is set at a background level of 7 ppm that corresponds to an increased cancer risk of about 2 in 100,000. Lifetime exposures to soil at the Massachusetts standard of 20 ppm arsenic corresponds to an estimated lifetime cancer risk of 5 in 100,000. Trace levels of arsenic also occur in food, water and air. ATSDR references typical inorganic arsenic exposures in the US as ranging from 1 to 20 ug/day. These exposures correspond to lifetime cancer risks that range from 2 in 100,000 to 50 in 100,000.

In summary, residents of Island Park have expressed concerns about exposures to soils from the Island Park landfill capping operation. There is no evidence to indicate that these exposures pose immediate health risks to neighborhood children, long-term health risks to any residents, or increases in cancer risk that are outside the range predicted for typical US exposures to arsenic that occurs naturally in food, water, and air as well as in soil. Guidance for minimizing soil

exposures to prevent lead poisoning is effective at reducing arsenic exposures, as well. See:
<http://www.health.ri.gov/publications/brochures/TipsForParentsToPreventLeadPoisoningInYoungChildren.pdf>