Bulletin: Questions and Answers Iqaluit Dump Fire – Air Quality

July 18, 2014

Q1: How is the air being monitored?

A1: Through the National Air Pollution Surveillance (NAPS) Program, Environment Canada's long-term air quality monitoring equipment in Iqaluit has monitored air quality levels for several critical air contaminants (i.e., nitrogen oxides, ozone, and fine particulate matter) since 2012. This is done in partnership with the Government of Nunavut.

In June 2014, Environment Canada and Health Canada delivered additional equipment to monitor more chemicals attributed to the dump fire smoke. This advanced equipment is installed at four locations around Iqaluit.

Currently, Health Canada and Environment Canada are monitoring the air quality in Iqaluit for several hundred chemical compounds, including pollutants that may have short-term and/or long-term health effects. These include particulate matter (PM$_{(2.5)}$), ozone, nitrogen oxides, sulphur oxides, associated metals, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and dioxins/furans. The Government of Canada continues to work closely with the Government of Nunavut to provide timely updates to the people of Iqaluit.

Q2: Am I in danger if I breathe the smoke?

A2: The dump fire smoke could have an impact on vulnerable people, such as those with heart or lung disease or asthma, as well as children, pregnant women and the elderly. Based on the new information, women of child-bearing age should also limit their exposure to the dump fire smoke, as a precaution. This is because there is a possible risk that dioxins above the standard may lead to decreased fertility in male offspring.

You should minimize your exposure to the dump fire smoke by staying indoors as much as possible. Keep your doors and windows closed, and set air exchangers to recirculate indoor air or turn them off.

Q3: What are the results to date?

A3: To date, analysis of the data collected in Iqaluit has shown most air pollution concentrations, such as fine particulate matter, have been low and do not pose a threat to public health. However, the recent results from a small number of samples, collected in Iqaluit do indicate the sum of the levels of dioxins and furans exceed the Ontario health standard. The standard level is 0.1 pg/m^3 (picograms per cubic metre), while the average level over 24 hours in Iqaluit is 0.2 pg/m^3. This standard level is considered very conservative.

Although dioxin concentrations have exceeded the relevant health standard, this does not mean adverse health effects are imminent; rather it means there is a potential.

Long-term exposure to high levels of dioxins is known to increase cancer risk; however, the levels of dioxins observed in Iqaluit are far below the relevant health standard for cancer.

Q4: What are dioxins and furans?

A4: Dioxins and furans are common names for toxic chemicals that are found in very small amounts in our environment, as well as in some of our foods. Long-term exposure to high levels of dioxins is known to increase cancer risk; however, the levels of dioxins observed in Iqaluit are far below the health standard for cancer.

It is important to remember that all people are regularly exposed to dioxins through burning garbage, burning diesel fuel, in fatty foods in our diet and tobacco smoke.

For more information on dioxins and furans, please go to: http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/dioxin-eng.php

Q5: How can I reduce my expose to dioxins?

A5: You should minimize your exposure to the dump fire smoke by staying indoors as much as possible when the smoke is blowing in your direction. Keep your doors and windows closed, and set air exchangers to recirculate indoor air or turn them off.

To further reduce exposure to dioxins in the longer term, you can trim the visible fat off your meat when preparing food and follow the advice in the Nunavut Food Guide and eat a balanced diet with more fruits and vegetables. Do not burn your garbage, do not smoke and keep your family away from second-hand smoke.

Q6: Who is at risk from the dump fire smoke? How do I know if I am sensitive to air pollution?

A6: Pregnant women and women of child-bearing age may be vulnerable to the effects of dioxins and furans, as they can decrease the fertility of male offspring.

People with asthma, cardiovascular or lung disease, as well as pregnant women, children and elderly people, are considered to be the most sensitive to the effects of fine particulate matter. Occasional spikes in hourly average concentrations of fine particulate matter could have an impact on sensitive populations even if 24-hour average values are below existing standards.

People should seek medical attention if they feel poor air quality is having an adverse impact on their health.

Q7: How can these be safe levels if the smell is so strong?

A7: Offensive odours may occur because of the fire. While unpleasant, these smells do not indicate a health risk, as odours are often detected at low concentration levels.

People with asthma, cardiovascular or lung disease, as well as children and elderly people, are considered to be the most sensitive to the effects of air pollution. These people should seek medical attention if they feel that poor air quality is having an adverse impact on their health.

Q8: What is the difference between chronic and acute exposure?

A8: Chronic exposure refers to repeated, continuous exposure to a substance, over an extended period, such as several years or a lifetime. Acute exposure refers to short-term exposure to a substance over time-periods such as hours or several days.

A key substance of concern with respect to short-term (acute) health effects has been the level of fine particulate matter. Occasional peaks in the hourly average of fine particulate matter concentrations have been observed when the wind is blowing from the landfill site towards the city centre; however, 24-hour average concentrations continue to be below the national standard.

With respect to long-term (chronic) health effects, the levels of key pollutants (such as VOCs and PAHs) are also below national standards.

Q9: Is it safe to camp?

A9: Monitoring has focused on the most populated areas of Iqaluit. We are not currently monitoring the distance pollutants travel but concentrations are expected to decrease with distance from the landfill site.