
Health Risk Assessment Done; Cleanup Plan is Next Step

South Minneapolis Residential Soil Contamination Site

Minneapolis, Minnesota

October/November 2007

EPA schedules open house sessions

EPA will hold general open houses in November at different locations (see below for times and locations) to give residents an opportunity to talk to EPA representatives one-on-one about the project. No formal presentations will be given during this time so you may stop by during the hours listed at the left, no appointment is needed.

Open Houses

Tuesday, Nov. 13

4 – 6 p.m.

East Lake Library, Meeting Room

2707 East Lake St.

Wednesday, Nov. 14

2 - 4 p.m. and 6 – 8 p.m.

Powderhorn Park, Lakeside Room

3400 15th Ave. S.

Thursday, Nov. 15

2 - 4 p.m. and 6 – 8 p.m.

Franklin Avenue Safety Center
1201 E. Franklin Ave.



U. S. Environmental Protection Agency has completed the human health risk assessment for the South Minneapolis Residential Soil Contamination site. This study gives EPA and the community a better understanding of the potential health problems that could be caused by arsenic in the soil. It helps EPA make more informed decisions on its next step.

Now EPA will consider its options for cleaning up the site. The Agency will explain those options to you and listen to your comments before deciding on a final cleanup plan. EPA will present those options sometime this winter with a final plan possible by next summer.

The risk assessment found the most direct way for you to be exposed to arsenic is by getting dirt on your hands and then touching your mouth, or eating contaminated soil. Another way to be exposed is to eat a lot of garden vegetables grown in more highly contaminated soil. There is a small risk of exposure from simply touching the soil and a much smaller risk from breathing dust particles in outdoor air. You can protect yourself and your family by limiting contact with contaminated soil.

Summary of risk assessment results

EPA collected and analyzed 7,521 soil samples from residential yards, school properties, day-care centers, right-of-way areas along streets and vacant land. Based on the results of these samples, EPA can say that herbicides and pesticides at the CMC Heartland Lite Yard site from 1938 to 1963 are at least partially to blame for the South Minneapolis neighborhood soil contamination.

The risk assessment found normal or “background” arsenic levels in the area to be about 16 milligrams of arsenic in 1 kilogram of soil, or 16 mg/kg. However, the Superfund process was not designed to deal with background levels of pollution. EPA considers those levels normal.

Arsenic levels in some parts of the site are higher than the background level. That’s why EPA is already working on cleaning up the areas with high levels of arsenic that pose a short-term risk.

The risk assessment found elevated risk from long-term exposure of residents to soil with arsenic greater than 25 mg/kg.

If the soil in your yard has been tested, you should have received a letter explaining the results of the sampling and telling you the level of arsenic found in your yard.

What is the risk assessment process?

The risk assessment is part of a larger study EPA calls a “remedial investigation.” The assessment is a four-part process to estimate the chances that contact with arsenic will harm people now or in the future. This process gives us numbers that show how great or small the risks may be. It also points to who is at risk, what is causing the risk and how sure we are about the conclusions. Risk assessment results are used to determine whether any cleanup is necessary, the level of cleanup needed and to evaluate health risks associated with the various cleanup options.

During the data collection and evaluation step, we are primarily concerned with collecting soil samples because arsenic contamination may have been carried through the air from the CMC industrial site and may have settled on the ground.

The next step is called exposure assessment. EPA uses the data it collects to find out how much arsenic people may be exposed to. People must come in contact with the arsenic through touching or swallowing to be at risk. The amount of exposure depends on how much arsenic is present, who might be exposed and how they are exposed.

During the toxicity assessment phase, EPA learns about which health problems may be caused by arsenic exposure. Health experts will determine how much arsenic it takes to cause illness. This does not involve finding people who actually suffer from health problems caused by pollution. EPA’s Superfund program is more concerned about potential health effects from contamination.

The final step of the process is risk characterization. This step sums up everything. It identifies what chemicals are posing the risks and states health risks in a statistical probability, such as a “one in a million” lifetime chance of cancer. The risk characterization also states how confident EPA is about the results. Since there is always some uncertainty about risk estimates, we build in a margin of safety to prevent underestimating risks. These safeguards are intended to protect you.

What assumptions were used?

EPA also tries to prevent underestimating the risk to you by using dose levels that represent the highest exposure level anyone is likely to receive from the site. Risk assessors also use high-end numbers to estimate how long area residents are exposed to site chemicals. This process ensures that the risk estimates help produce cleanup decisions that will protect your health.

EPA made several assumptions during the risk assessment:

- We evaluated adults, infants, children and construction workers as those at risk.
- We assumed residents are exposed to arsenic in soil or dust through incidental ingestion for 350 days per year,

and that construction workers are exposed to soil for 90 days per year.

- We assumed residents are exposed to arsenic through skin contact and airborne dust for 185 days per year (the estimated number of days where soil is not snow-covered and it is not raining in Minneapolis).
- We assumed residents grow vegetables in their home gardens. Using an estimated 4-month growing period during the year, we assumed people eat above-ground vegetables for 90 days and below-ground vegetables for 60 days.
- We assumed residents could be exposed to arsenic in soil and dust for 50 years (a high-end estimate) and 15 years (an average exposure estimate); that construction workers could be exposed to arsenic in soil for 10 years (high-end) and one year (average).

Because local residents may be exposed more frequently and for longer periods of time than construction workers or school children, the risk assessment focuses on people who live in South Minneapolis neighborhoods.

How toxic is it?

There are several different kinds of arsenic, and EPA has not identified which form is in the South Minneapolis soil. So the risk assessment used information for inorganic arsenic, which is the most toxic form. Previous studies have shown that at high concentrations, arsenic can be associated with certain types of cancer such as lung, liver, kidney, bladder and skin.

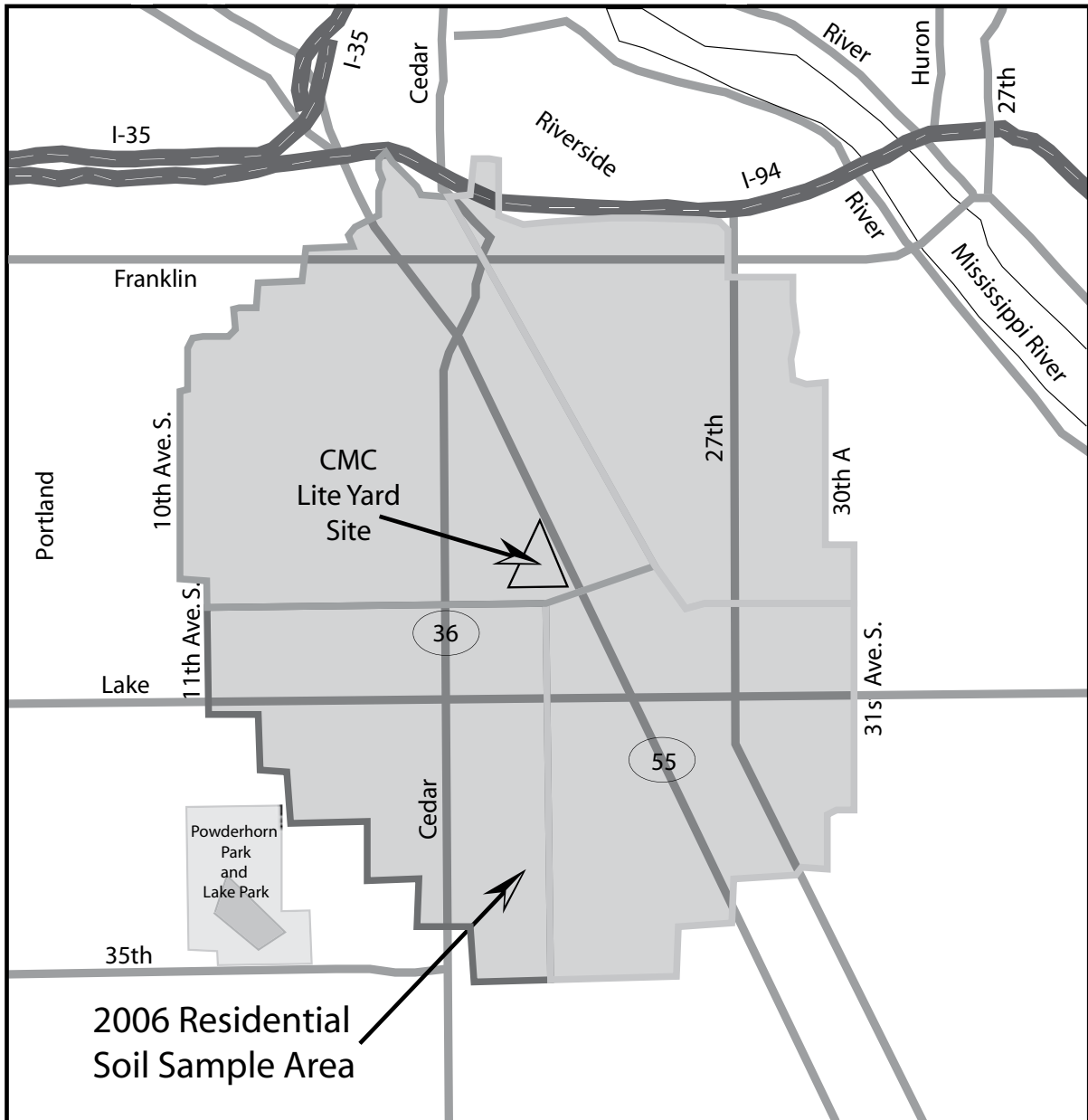
When EPA looks at cancer risks, we assume there is always some potential for adverse health effects. And for non-cancer effects, EPA builds in a margin of safety to protect the public.

What is an acceptable risk level?

EPA generally considers you to be safe if the risk of getting cancer from toxic contamination is as high as one in 10,000, and as low as one in 1 million. To ensure public health is protected, EPA uses worst-case, or “high-end” assumptions to determine cancer risks. High-end estimates like these ensure that the actual chance of getting cancer will most likely be below EPA’s risk estimate. The level EPA considers “safe” is likely to over-state the actual human cancer risks.

It’s important for you to know, however, that risk estimates like these are intended to provide the basis for EPA’s decisions about cleaning up a site. They do not actually predict health outcomes. EPA bases the estimates on the most protective assumptions.

You can review the final baseline human health risk assessment report at the information repositories or on EPA’s Web site: www.epa.gov/region5/sites/cmcheartland.



Scope of Superfund cleanup

EPA will not collect any more soil samples outside the area that has already been tested. EPA and scientists from the state of Minnesota agree that the only possible area affected by an airborne release of arsenic from the CMC Heartland Lite Yard property between the 1940s and 1963 is within the area that has already been tested (see map below).

In a few places EPA found arsenic deep in the ground. We also found arsenic at random locations throughout the area. This is most likely because there are a variety of causes and sources for the arsenic. Some of it is natural and some might come from arsenic-containing products people used in their yards. It might also come from contaminated fill dirt. The Superfund program has limitations. We are only authorized to clean up contamination caused by the CMC Heartland Lite Yard site, not from pesticide or fertilizer application.

We know from the data we've collected and studied that the facility is the source of some of the arsenic in South Minneapolis soil. EPA can say that within a certain distance of the CMC Heartland Lite Yard property, some arsenic must have come from that property and we are therefore authorized to clean it up. However, the data also tells us that the wind can only carry arsenic so far. Past that limit, it is unlikely that the arsenic came from the CMC property. In that case, the Superfund law does not allow EPA to clean it up.



Region 5
Office of Public Affairs (P-19J)
77 W. Jackson Blvd.
Chicago, IL 60604

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For more information
For general questions and community-related information about the site, contact Cheryl Allen, EPA community involvement coordinator. For technical information about sampling and cleanup work, contact Tim Prendiville, EPA remedial project manager.

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77 W. Jackson Blvd.
Chicago, IL 60604
toll-free (800) 621-8431, 9 a.m.
to 4:30 p.m. weekdays

Additional site-specific documents as well as general information about the EPA Superfund program are available at these official information repositories:

Green Institute
2801 21st Ave. S.
Suite 100
Minneapolis

City of Minneapolis
Police Department
Attn: Carla Nielson
1201-B E. Franklin Ave.
Minneapolis

Minneapolis Central
Library
300 Nicollet Mall
2nd Floor
Minneapolis

Minneapolis Public
Library
East Lake Branch
2727 E. Lake St.
Minneapolis

Web: www.epa.gov/region5/sites/cmcheartland/

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