



Construction in Streeterville; What to Do Before You Dig

Lindsay Light Superfund Site
Chicago

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For more information

If you have questions about radioactive thorium in the Streeterville neighborhood, contact:

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You may call the EPA's Chicago regional office toll-free, 800-621-8431, weekdays, 8:30 a.m. to 4:30 p.m.

Information on the Lindsay Light site is available at

**Harold Washington
Public Library
400 S. State St.
Chicago**

Or visit:

www.epa.gov/lindsay-light

To learn more about thorium, visit:

www.epa.gov/radiation

If you plan to do any digging in Chicago's Streeterville neighborhood, the U.S. Environmental Protection Agency wants you to know about steps you may need to take that will protect workers and the public from radioactive thorium. Radioactive material was buried in parts of Streeterville in the early part of the 20th century and is still a potential hazard today.

The waste comes from former operations of the Lindsay Light and Chemical Co., which used thorium to make gaslight mantles. These are small fabric bags infused with thorium or other metallic nitrates that fit over the gas source. The heat from the gas flame burns off the mantle fabric leaving a fine metal mesh that glows brightly. The company made mantles in Streeterville from the early 1900s until about 1936.

Thorium lasts billions of years. That means the process of identifying, properly handling and disposing of contaminated sub-surface soil will last far into the future. This process is especially important for construction workers who excavate Streeterville properties in preparation for new buildings. U.S. EPA has a web-based repository of radiation survey reports and other technical documents to help those doing excavation work on private property or in city right-of-ways. These reports allow utility companies and city departments to easily find out if an area has already been surveyed and determined to be clear of contamination, or if the area needs to be surveyed.

Background

Radioactive thorium was identified throughout Streeterville during development of the area in the 1990s. To date, workers have removed about 50,000 cubic yards of thorium-contaminated soil under EPA oversight. Lately, investigators have encountered radioactive asbestos during some excavations.

EPA investigations showed the contamination most likely resulted from the disposal of radioactive waste by Lindsay Light. Unfortunately, there are no company records that show where the material was buried. Radioactive thorium has been found in several locations around Streeterville.

Lindsay Light began its manufacturing operation in the early 1900s at 22 W. Hubbard St. The company later expanded to 161 E. Grand Ave. and 316 E. Illinois St. Workers processed ore – primarily monazite – into liquid thorium nitrate at the East Illinois Street address and used that product to make gaslight mantles at the East Grand Avenue location. Company records do not indicate what took place at the five-story building on West Hubbard Street but, according to Illinois Emergency Management Agency, that location has undergone thorium cleanup.

Lindsay Light closed its Streeterville operations around 1936 and moved to West Chicago in DuPage County. The company continued its disposal practices at the DuPage County location. Eventually, four Superfund sites were associated with the company's West Chicago operations.

Digging in Streeterville: Technical details

If you plan to do any work in Streeterville that involves digging into soil below the surface, you must first contact U.S. EPA. You must also schedule a radiation survey unless you can show U.S. EPA that the location was previously tested, and no contamination was identified. Radiation surveys must be performed by a qualified person under the direction of a health physicist. Here is a general overview of an expected radiation survey with a survey instrument utilizing a 2" x 2" sodium iodide, or NaI, probe:

- Determine gamma radiation background: The gamma count rate background will be established for each survey instrument. Six locations will be chosen in presumed non-radiologically contaminated areas of the site. A one-minute integrated count, or stable count rate measurement, will be obtained at the surface of each location, and the measurements averaged to an instrument-specific background count rate value.

- Perform the walking radiation survey: Hold a NaI probe about 1 to 2 inches above the ground and walk the entire survey area along parallel lines spaced 1 meter apart. Readings twice the background count rate value should be used as an indicator of the potential presence of radioactive contamination and noted as anomalies of elevated gamma radiation levels.
- Perform a grid survey: Apply a square grid to the survey area with 3-meter spacing between vertices. At each vertex, collect a 30-second integrated count reading, or stable count rate measurement, with the NaI probe on or near contact with the ground. Next, collect readings at anomalies identified during the walking radiation survey.
- Assess the anomalies: If you find anomalies, you must collect subsurface gamma count rate readings and collect soil samples for radionuclide analysis. Be sure to have an U.S. EPA-approved health and safety plan before collecting soil samples. This will protect workers from radiation hazards and provide proper contaminated soil disposal.

Go online to see an updated interactive map of the Streeterville area, showing sites that have been surveyed:

www.epa.gov/lindsay-light