



Former Harshaw Chemical Company Site Investigative Area -06

**U.S. Army Corps of Engineers
Buffalo District**

Building Strong®

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Formerly Utilized Sites Remedial Action Program (FUSRAP)

FUSRAP was initiated in 1974 to identify, investigate, and cleanup or control sites throughout the United States that were part of the Nation's early atomic weapons and energy programs during the 1940s, 1950s, and 1960s. When implementing FUSRAP, the Corps follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan.

Site Description and History

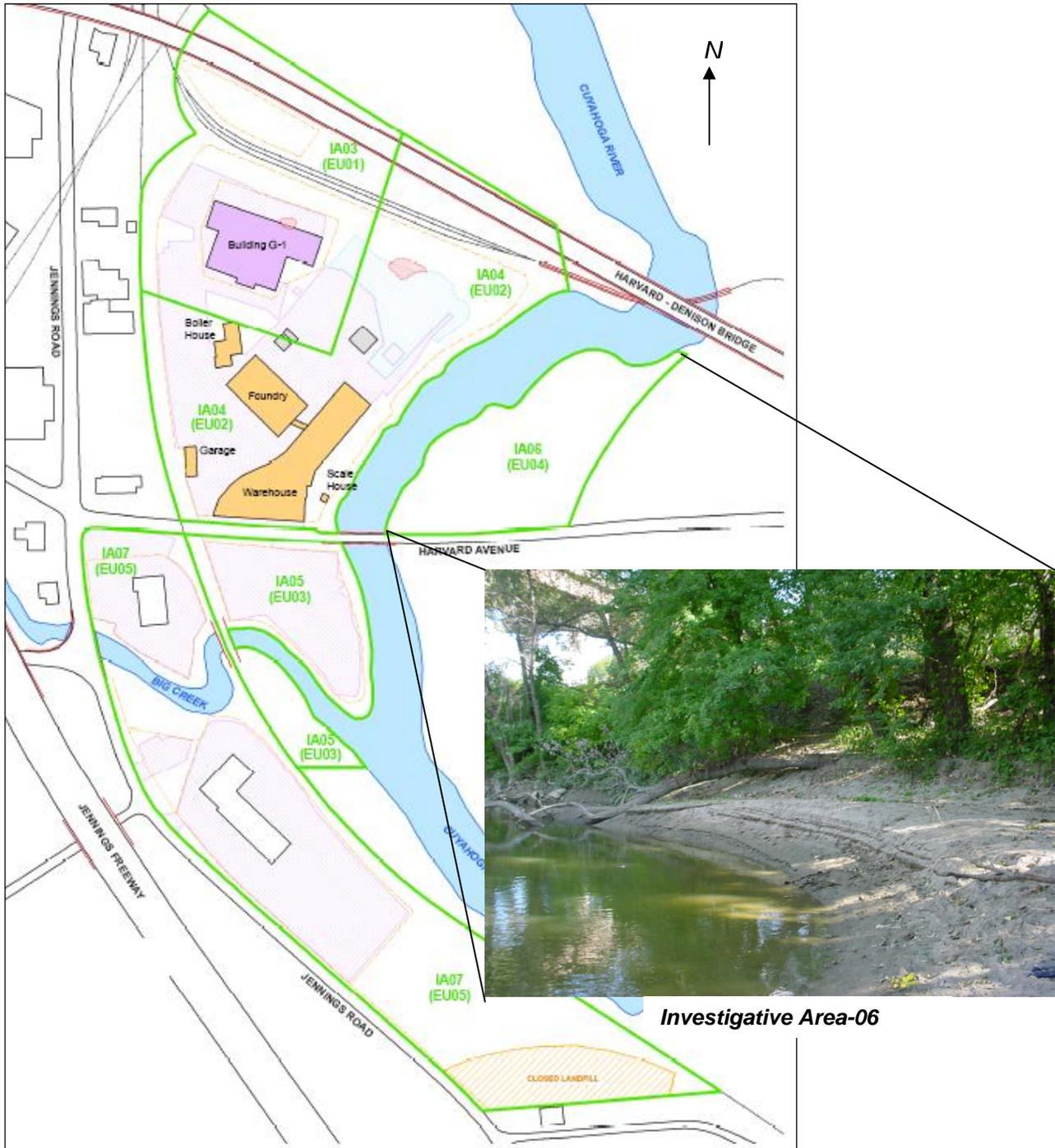
The 55-acre former Harshaw Chemical Company Site is located at 1000 Harvard Avenue, approximately three miles southwest of downtown Cleveland in Cuyahoga County, Ohio. The site is in a low-lying area adjacent to the Cuyahoga River and Big Creek and is surrounded on three sides by industries. The main portion of the facility at one time included over 30 buildings on about 16 acres of land.

The former Harshaw Chemical Company was contracted by the Manhattan Engineer District (MED) and later the Atomic Energy Commission (AEC) to support the Nation's early atomic energy program. From 1944 to 1959, various forms of uranium were processed in Building G-1 (formerly known as Plant C) for isotopic separation and enrichment at Oak Ridge, Tennessee.

Previous investigations that addressed residual radiological contamination at the site were conducted from 1976 to 1979. The current property owners conducted additional investigations in the 1990s and numerous buildings were demolished. Based on a request from the State of Ohio and the site owners, the U.S. Department of Energy (DOE) determined that this site should be reviewed for possible inclusion in the FUSRAP. On June 3, 1999, the DOE referred this action to the Corps. Based on the results of a Preliminary Assessment, the former Harshaw Chemical Company Site was included in FUSRAP in spring 2001 for further characterization of FUSRAP-related contaminants.

In accordance with the phased process required in CERCLA, the Corps completed a Preliminary Assessment, a Historic Photographic Analysis, and a 2006 Remedial Investigation (RI) Report and Baseline Risk Assessment (BRA). During the development of the 2006 RI Report and BRA the Corps identified the presence of another radioactive element (Thorium) and obtained additional historical documents which indicated other MED/AEC processes may have taken place at the site. As a result, additional investigations were performed. The 2006 RI Report was revised in 2009 to include the additional data collected to define the nature and extent and risk posed by the radionuclides not included in the original RI Report.

When the Corps began investigating the Harshaw Chemical Company Site in 2002, the Corps divided the site into Investigative Areas (IAs). IA-06 is the least impacted portion of the site. A map of the site including IA-06 is included on the next page.



Former Harshaw Chemical Company FUSRAP Site

Investigative Area (IA-06)

IA-06 is a six-acre parcel located north of Harvard Avenue and east of the Cuyahoga River that was once owned by the former Harshaw Chemical Company. No known process-related activities were conducted in IA-06. Historical information indicates this area was used for general construction debris fill activities. There are no buildings in IA-06 and a historical aerial photo analysis shows no evidence of past development. Small areas of land disposal are evidenced by vehicle tracks on a historical aerial photograph analysis and an area of slightly elevated radioactivity was identified during sampling activity.

IA-06 is referred to as the Eastside soil area in the RI Report. During the RI, 99 soil samples were collected from 42 locations on IA-06. These samples were analyzed for the following constituents of interest:

- Americium-241,
- Cesium-137,
- Europium 152,
- Europium-154,
- Lithium,
- Molybdenum,
- Kerosene,
- Neptunium-237,
- Plutonium-238,
- Plutonium-239/240,
- Technetium-99,
- Total Uranium
- Uranium-233, -234, -235, -236, and -238
- Radium-226,
- Radium-228,
- Thorium-228,
- Thorium 230, and
- Thorium-232.

The results of this investigation of IA-06 are summarized below:

- The FUSRAP-related chemicals lithium, molybdenum, and kerosene were detected in IA-06 soils samples, but were not determined to be significant constituents of potential concern (COPC).
- In IA-06 there is very little radioactivity above background levels. The only radiological constituents that were detected in IA-06 soils were americium-241 (a single low detection), cesium-137, radium (226 and -228), thorium (-228, -230, -232), and uranium (-234, -235, and -238). Of these only radium-226, thorium-230, and uranium (-234, -235, and -238) were detected above very conservative risk-based screening levels (protective of agricultural land use). However, for the reasonable future land use, recreational, none of these constituents were present at levels indicating that they posed an unacceptable risk to human health and the environment, i.e., they are not considered significant COPCs.
- The soil samples containing elevated levels of uranium, along with radium-226 and thorium-230, were localized to a zone in the south-central portion of IA-06. The composition of the materials in this area indicates that the uranium in IA-06 may occur as a result of fill emplacement in the mid 1950s.
- Modeling of the groundwater in IA-06 indicates that uranium concentrations in the soils will not produce groundwater impacts above the drinking water standard.

The RI Report for the former Harshaw Chemical Company Site also includes a Baseline Risk Assessment with Human Health and Screening Level Ecological Risk Assessments. Residual radionuclide concentrations within IA-06 do not pose a risk to human health or the environment based on the evaluations in the Baseline Risk Assessment for the current or reasonably anticipated future land use of recreational.

Current Status of IA-06

On March 18, 2011, a Record of Decision (ROD) for IA-06 of the former Harshaw Chemical Company Site was signed. The ROD for IA-06 identifies a no action remedy under CERCLA in regard to FUSRAP-related materials for the reasonably anticipated future land use of the area which is recreational. The ROD is protective of human health and the environment. The Baseline Risk Assessment for IA-06 shows that cancer and non-cancer risks from FUSRAP-related constituents are below the EPA risk limit both for current use and into the future.

A Proposed Plan for IA-06 was released by the Corps for public comment in April 2010 and a public meeting was held in May 2010. The ROD contains a responsiveness summary which includes the transcript of the public meeting, input received from the community, and responses to the comments received.

Administrative Record

The Administrative Record for the former Harshaw Chemical Company Site contains documents that support the decision-making process for the site. It is available for your review at the following locations:

Cuyahoga County Library (Brooklyn Branch)
4480 Ridge Road
Cleveland, OH 44134

U.S. Army Corps of Engineers (by appointment)
1776 Niagara Street
Buffalo, New York 14207

U.S. ARMY CORPS OF ENGINEERS – BUFFALO DISTRICT FUSRAP TEAM

1776 NIAGARA STREET, BUFFALO, N.Y. 14207

Phone: 800-833-6390 (Option 4)

Email: fusrap@usace.army.mil

Website: www.lrb.usace.army.mil/fusrap/harshaw