



**US Army Corps
of Engineers**®
Buffalo District

Formerly Utilized Sites Remedial Action Program The Tonawanda Landfill and Mudflats Vicinity Property Fact Sheet for the Proposed Plan Process April 2007

The Proposed Plan for the Tonawanda Landfill Vicinity Property was prepared by the United States Army Corps of Engineers (Corps), under its authority to conduct the Formerly Utilized Sites Remedial Action Program (FUSRAP). FUSRAP was initiated in 1974 to identify, investigate, and clean up or control sites throughout the United States that were part of the early atomic energy program. In October 1997, management of FUSRAP was transferred from the United States Department of Energy (DOE) to the Corps. The Energy and Water Development Appropriations Act for Fiscal Year 2000 provides authority to the Corps to conduct restoration work on FUSRAP Sites, subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Therefore, the Corps is conducting this project in accordance with CERCLA.

In 2001, the Corps began a Remedial Investigation of the Tonawanda Landfill Vicinity Property and released the final report in 2006. This effort was in addition to previous investigations performed by the DOE and Oak Ridge National Laboratory in the early 1990's. During the Remedial Investigation, small, isolated locations within the Tonawanda Landfill Vicinity Property were found that contain levels of uranium, radium and thorium above background levels, similar to other radioactive material found at FUSRAP sites in Tonawanda. The Corps conducted extensive sampling that ensures that these radionuclides have not migrated off of the landfill property. A Baseline Risk Assessment (BRA) was conducted as part of the Remedial Investigation to determine the risk to human health when someone is exposed to these radionuclides.

This Proposed Plan explains the Corps' recommendation of no action for addressing the uranium, radium, and thorium at the site. The results of the BRA indicate that the radionuclides at the Tonawanda Landfill Vicinity Property do not pose a cancer risk above the threshold established by the U. S. Environmental Protection Agency (USEPA) in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) found at 40 Code of Federal Regulations Part 300. The NCP provides the guidelines and procedures needed to respond to releases of hazardous substances under CERCLA. The cancer risk limit established in the NCP is an additional incidence of cancer in a population of 10,000 people.

The Corps has determined that a CERCLA response action is not warranted for the uranium, radium, or thorium found in the various media in the Town of Tonawanda Landfill and Mudflats. No further action is needed at the Tonawanda Landfill or Mudflats, as the cancer risks for current and future uses of the site are within the acceptable limit. This no action remedy is fully protective of human health and the environment. (Further explanation of the risk assessment process is found on page 3 of this fact sheet.)



Tonawanda Landfill and Mudflats Vicinity Property



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History of the Tonawanda Landfill Vicinity Property Site

The Tonawanda Landfill and Mudflats Area (also called the Tonawanda Landfill Vicinity Property) consist of approximately 170 acres in the Town of Tonawanda, New York. Adjacent properties include a residential area within the city of Tonawanda, a railroad spur line, a Niagara Mohawk Power Corporation utility corridor, Interstate 290, and a former municipal incinerator that is no longer in use and has since been demolished.

Starting in the 1900s, historical records show that a quarry was operated in the western portion of the landfill property. In the 1920s, the quarry was reportedly abandoned at a depth of 60-feet when water was encountered. Since then, the Tonawanda Landfill has been owned by the Town of Tonawanda. The Town operated the landfill as a municipal landfill from the mid-1930s through October 1989. During those years, the Town disposed of various types of wastes in the landfill, including ash generated by Town incinerators (formerly located just west of the mudflats), construction/demolition debris and yard refuse (leaves, branches, etc.) that was collected from Town residents. On occasion, the Town disposed of municipal solid waste and wastewater sludge (formerly incinerated at the incinerators), but only when the incinerators were temporarily inoperable.

The incinerators, operated by the Town of Tonawanda between the 1940s and the early 1980s, were used to burn municipal solid waste and sludge generated at the Town of Tonawanda's Waste Water Treatment Plant. The incinerators were located in the western edge of the Mudflats Area until they were demolished in 2002. Other than the incinerators, the mudflats have always been vacant.

No historical records have been found to show that either Tonawanda Landfill or the Mudflats Area were ever part of the Nation's early atomic weapons program, or that there is any connection between trace amounts of radioactive material found in the landfill to the Manhattan Engineer District (MED) or Atomic Energy Commission (AEC) activities. However, in 1991 the DOE conducted a radiological survey of the properties, because of their proximity to the Linde FUSRAP Site. The DOE discovered that small portions of the Tonawanda Landfill and Mudflats Area properties contained material similar to material found at other FUSRAP sites.

To ensure a more complete investigation would occur, the DOE designated the two properties together as a "Vicinity Property" of the former Linde Site, ensuring the properties would be further investigated under FUSRAP.

In the summer of 2001, the Corps began a more detailed sampling effort at both the landfill and Mudflats Area sites to gather more information about site conditions and the nature of the materials present. The Corps Buffalo Team collected hundreds of samples from soil, surface water, and groundwater, and tested those samples for uranium, thorium and radium. Since that time the Corps has repeatedly met with local officials, held public information sessions, and conducted interviews with adjacent property owners to collect information and answer questions concerning the Tonawanda Landfill and Mudflats Area. This Proposed Plan is a culmination of the investigations that the Corps started at that time. The Corps kept elected officials apprised of its work – even during work interruptions while waiting for funding or technical review.

The sampling results from that effort, as well as results from past DOE efforts, enabled the Corps investigative team to complete their Remedial Investigation of the site in 2006. As part of the Remedial Investigation, the Corps also conducted a Baseline Risk Assessment, to evaluate potential risks associated with the contamination for different users over a thousand-year period, under current and potential future land uses. It was assumed that the landfill remains a landfill over the 1,000 year evaluation period, i.e., no residential re-development of the landfill occurs over this 1,000 year period.



Understanding Risk

What is Risk?

Risk is the chance that some harmful event will occur. In the case of radiologically contaminated sites, risk is the potential for a cancer to occur as a result of exposure to contamination.

What is Risk Assessment?

Risk assessment is the process used to determine the potential for a negative health effect to occur as a result of exposure to hazardous materials.

Risk Assessment is a mandated part of the CERCLA process. The Corps follows the U. S. EPA Risk Assessment Guidance for Superfund (CERCLA) in conducting Baseline Risk Assessments for FUSRAP sites.

Risk depends on: how toxic a substance is; how one is exposed (comes into contact with); and the length of time per occurrence and frequency that the person is exposed to the substance.

Exposure requires contact with the radioactivity. This can occur in several ways:

- Incidentally eating contaminated dirt
- Breathing contaminated dust
- External gamma emissions

The cancer risk limit established by the U. S. EPA in the NCP is an additional incidence of cancer in a population of 10,000 people.

Human Health Risk from Uranium, Thorium and Radium from the Tonawanda Landfill and Mudflats Area

The Baseline Risk Assessment (BRA) looked at current and reasonable future uses of the site. We are required to look at a reasonable maximum exposure. The greatest exposure to radioactivity occurs when someone comes onto the landfill. The exposure to radioactivity at peoples' residences is far less than the reasonable maximum exposure that occurs when someone is directly on the Landfill itself.

The reasonable maximum exposures expected at the landfill and mudflats evaluated in the BRA are:

- A) Recreational use of landfill and mudflats, which assumed someone spent time on the landfill 2 hours per week over 30 years (adult), or 1 - 2 hours per day over 6 years (youth);
- B) Construction worker in landfill and mudflats (someone working in the soil, not placing a cap over it)
- C) Industrial re-development of mudflats
- D) Residential re-development of mudflats

The radiological cancer risks were determined for the current condition of the site, i.e., without any cap over the contaminated areas. The cancer risk results for these current and plausible future scenarios are within acceptable cancer risk limits established in the NCP by the U. S. EPA.



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“We are very open to receiving public comment. We want to emphasize that the Proposed Plan document is not the final decision concerning the site. We have been and will continue to work with other federal and state agencies, as well as local and federal elected officials, to address concerns and issues. We will carefully consider all comments and will only finalize a plan after evaluating all comments.”

John S. Hurley, Lieutenant Colonel, US Army, Commander, Buffalo District

The Corps invites members of the public to review the Proposed Plan and the supporting documents which further describe the conditions at the Tonawanda Landfill Vicinity Property and form the basis for this Proposed Plan.

These documents may be found in the Administrative Record File for the Tonawanda Landfill Vicinity Property at the following locations:

USACE FUSRAP Public Information Center
1776 Niagara St.
Buffalo, NY 14207-3199
(716) 879-4396
(800) 833-6390 (press “4” at the recorded message)

Tonawanda Public Library
333 Main Street
Tonawanda, NY 14150

Members of the public who wish to comment on this Proposed Plan may submit their comments in writing to the Corps at the following address. Comments must be postmarked by June 26, 2007.

U.S. Army Corps of Engineers, Buffalo District
FUSRAP Public Information Center
1776 Niagara Street
Buffalo, NY 14207-3199

Please refer to the Tonawanda Landfill Vicinity Property Proposed Plan, in any comments. All comments will be reviewed and considered by the Corps prior to making a final decision concerning the Tonawanda Landfill Vicinity Property.

After the close of the public comment period, the Corps will review all public comments, as well as the information contained in the Administrative Record File for this site, and any new information developed or received during the course of this public comment period, as required in CERCLA and the NCP. An authorized official of the Corps will then make a final selection of the remedial action to be conducted at this site. This decision will be documented in a Record of Decision, which will be issued to the public, along with a response to all comments submitted regarding this Proposed Plan. If there are any questions regarding the comment process, or the Proposed Plan, please direct them to the address noted above, or telephone (716) 879-4396 or (800) 833-6390.

Comments on the Proposed Plan may also be submitted during the public meeting,

Wednesday, April 25, 2007
7 p.m. to 9 p.m.
Tonawanda High School Auditorium
Hinds Street
Tonawanda, New York 14150