



US Army Corps  
of Engineers  
Buffalo District

# Formerly Utilized Sites Remedial Action Program (FUSRAP)

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## **WHAT IS FUSRAP?**

The Formerly Utilized Sites Remedial Action Program (FUSRAP) was initiated in 1974 to identify, investigate, and clean up or control sites throughout the United States that were part of the Nation's early atomic energy program during the 1940s, 1950s, and 1960s. Activities at the sites were performed by the Manhattan Engineer District (MED) or under the Atomic Energy Commission (AEC). Both MED and AEC were predecessors of the Department of Energy (DOE).

In October 1997, management of FUSRAP was transferred to the U.S. Army Corps of Engineers. When a site is identified, records are reviewed by DOE. The Corps then does a Preliminary Assessment/Site Investigation to determine if contaminants are present and further investigation is necessary. If contamination is found that is connected with MED or AEC activities, exceeding guidelines, cleanup is authorized under FUSRAP. Congress has also added other sites to FUSRAP.

The Buffalo District has been assigned ten FUSRAP sites within its district boundaries in New York and Ohio. Generally, sites that became contaminated during the early atomic energy program were cleaned up and released for use under the cleanup guidelines in effect at that time. The cleanup guidelines used were not as strict as today's revised standards; as a result, trace amounts of low level residual radioactive materials remain at some of the sites. In addition, with the demolition of buildings and movement of materials, over several years contamination may have spread to other locations, or eroded onto vicinity properties near some of the sites.

## **HOW HAZARDOUS ARE FUSRAP SITES?**

Even though FUSRAP sites contain levels of radioactive contamination above current guidelines, none of these sites pose an immediate health risk to the public or environment under current land uses. The contaminated materials have very low concentrations, and people are not exposed to them for long periods of time. Although these materials are not an immediate hazard, they will remain radioactive for thousands of years, and health risks could increase if the land use were to change. Under FUSRAP, each site is cleaned to a standard that considers possible future uses for the land.

## **WHAT ARE FUSRAP'S OBJECTIVES?**

The objectives of FUSRAP are to:

- Evaluate sites that supported MED/AEC nuclear work and determine whether the sites need cleanup and/or environmental control.
- Protect human health and the environment by cleaning up or and/or applying controls to these sites so that they meet current guidelines.
- Dispose of or stabilize contamination in a radiologically and environmentally acceptable manner.
- Complete all work in a manner consistent with appropriate Federal laws and regulations and state and local environmental land use requirements (to the extent permitted by Federal law).
- Perform the cleanup work in a safe and efficient manner.

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## **LAWS THAT GOVERN FUSRAP**

Every step of the FUSRAP cleanup process is regulated by a number of Federal and State laws and their implementing regulations. Chief among these is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLA provides the framework for a systematic investigation, remedial design, and cleanup of contaminated sites. CERCLA requires that the public be informed and involved in the decision making process. It is typical for FUSRAP sites to be subject to multiple laws, depending upon the type and extent of contamination at the site. Other laws may include the Resource Conservation and Recovery Act, the Toxic Substances Control Act, the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Atomic Energy Act, the Uranium Mill Tailings Radiation Control Act, and state and local laws.

## **HOW DOES FUSRAP WORK?**

FUSRAP sites undergo several steps that lead to cleanup. During a preliminary assessment, information about the site is collected and reviewed. If it appears there may be contamination on site, an investigation with testing is performed to determine whether contamination is present on site. If it appears that FUSRAP-related contaminants are present exceeding guidelines the DOE may add the site to the Program. The next step is a remedial investigation/feasibility study. The purpose of the remedial investigation/feasibility study is to identify the type and amount of contamination at the site and its location(s). The feasibility study develops and evaluates cleanup alternatives. Throughout the remedial investigation/feasibility study process, the public is informed about the progress toward a decision concerning cleanup alternatives and is encouraged to make comments. When a cleanup alternative/option/action is chosen, a proposed plan is written that explains the rationale and details of the selected alternative. Members of the public are asked to comment on all of the cleanup options, including the selected alternative. After public comments are considered, a final decision is made and documented in a Record of Decision. The remedial design follows the record of decision and includes preparation of technical drawings and specifications that outline how the cleanup will be conducted. Cleanup begins after the remedial design is complete. This phase involves site preparation and construction activities. When these activities are completed, testing is conducted to ensure that cleanup objectives for the site have been met. If the contaminated materials are removed from the site they are sent to a properly approved and licensed disposal site. Land use controls may also be used to restrict future types of land use depending on the cleanup level identified for the site.

## **HOW IS FUSRAP ORGANIZED?**

Administrative and financial management of FUSRAP activities are the responsibility of the USACE Headquarters in Washington, DC who delegates the work to the divisions. The Buffalo District is within the Great Lakes and Ohio River Division. Project management of Buffalo District FUSRAP sites is done with a team approach with all team members reporting to the project manager for each site. The team members include experts from many different districts. Most site investigations and cleanups are done by contractors under the supervision of Corps. The Corps ensures that all FUSRAP activities comply with CERCLA requirements.



# BUFFALO DISTRICT SITES

## **Ashland Sites, Town of Tonawanda, NY**

### **Ashland 2, Ashland 1 (including Seaway D), and Rattlesnake Creek**

The Ashland Sites are located on privately owned property in the Town of Tonawanda, north of Buffalo, NY and south of the Niagara River. The Buffalo District has just completed remediation of all the sites under the Ashland Sites ROD. The Ashland Sites were contaminated with low-level radiological material, including thorium, radium, and uranium. This material originated at the Linde FUSRAP site where uranium ore was processed. The Ashland Record of Decision (ROD) was signed in April 1998 and includes excavation and off-site disposal of radiological materials that exceed site-specific guidelines. Excavation at the Ashland 2 site began in July 1998 and was completed in September 1999. Work began at the Ashland 1 site in June 1999 and was completed in December 2002. The Corps then began remediation at Rattlesnake Creek in May 2005 and was completed in September 2005. A total of 258,000 tons of contaminated material was safely shipped out-of-state for disposal. The District has completed the Site Closeout Report which closes out the ROD. An on-site ceremony was held on September 14, 2006 to celebrate the closeout the Ashland Sites ROD.

## **Painesville Site, Painesville, Ohio**

The Painesville Site is a privately owned 30-acre site located in Painesville, Ohio, approximately 22 miles northeast of Cleveland, Ohio. It was a former magnesium production facility, operated from 1942 to 1953 by the Diamond Magnesium Company under contract to the Federal Government. From 1951 to 1953, Diamond Magnesium received approximately 1,650 tons of radioactively contaminated scrap steel from the Lake Ontario Ordnance Works (now the Niagara Falls Storage Site), to be used in the magnesium production process. It is believed that soils at the site were contaminated with radium, thorium and uranium while the scrap steel was in storage prior to use. The Record of Decision (ROD) for the Painesville Site was signed on April 7, 2006. The Selected Remedy for cleanup of the Painesville Site, documented in the ROD, is Excavation and Off-Site Disposal. Site remediation is scheduled to begin in the spring of 2007.

## **Luckey Site, Luckey, Ohio**

The Luckey Site is a privately owned 40-acre site located in the Village of Luckey, in Wood County, Ohio. Between 1949 and 1958, the Luckey Site was operated as a beryllium production facility by the Brush Beryllium Company (later Brush Wellman) under contract to the Atomic Energy Commission (AEC). During operations, on-site lagoons and disposal trenches were used to dispose of waste materials from beryllium production. In 1951, the site received approximately 1,000 tons of radioactively contaminated scrap steel from the Lake Ontario Ordnance Works (now the Niagara Falls Storage Site), to be used in proposed magnesium production at the site. These activities resulted in contamination of site soils with beryllium, lead, radium, thorium and uranium, and contamination of site groundwater with beryllium, lead and uranium. The Record of Decision (ROD) for the Soils Operable Unit was signed on July 26, 2006. The Selected Remedy for cleanup of soils at the Luckey Site, documented in the Soils ROD, is Excavation and Off-site Disposal. A separate ROD for site groundwater will be completed at a later date. Soils remediation will commence after remediation is complete at other FUSRAP sites currently undergoing cleanup, and funding is available.

## **Seaway Site, Tonawanda, New York**

The Seaway Site is a privately owned 93-acre site located in Tonawanda, New York. The Seaway Site was operated as a landfill from 1930 to 1993 by Browning Ferris Industries; accepting a variety of municipal, commercial, construction and industrial wastes. The site became contaminated with FUSRAP material during the transfer of radioactively contaminated soil between the Ashland Sites from 1974-82. The FUSRAP contamination is located in four uncapped areas of the landfill, known as Areas A, B, C and D. Area D was included in the Ashland Sites Record of Decision issued in April, 1998. The Corps is currently preparing a Feasibility Study Addendum (FSA) for the Seaway Site, which will develop and evaluate alternatives for addressing the FUSRAP contamination at the site. The Feasibility Study Addendum is scheduled for completion in 2007, and will be followed by a Proposed Plan, which will select the Preferred Alternative for site remediation from those presented in the FSA.

### **Niagara Falls Storage Site, Lewiston, New York**

The Niagara Falls Storage Site (NFSS) is located in the Township of Lewiston (Niagara County), in Northwestern New York about 10 miles north of the City of Niagara Falls, New York. This 191-acre site contains a multi-story former process building with three attached silos, a single story storage building, a small storage shed, and an engineered Waste Containment Structure (WCS). The WCS contains 250,000 cubic yards of radiological material, 4,000 cubic yards of which are high activity wastes containing over 500,000 pCi/gram of activity. Constituents of concern are thorium-230, radium-226 and radon-22, in addition to smaller amounts of uranium-235 and uranium-238. This storage facility was originally part of the former Lake Ontario Ordnance Works, a site used for producing explosives during WWII. During the war the Niagara Falls Storage Site was used by the Manhattan Engineer District for storing radioactive residues and wastes from uranium ore processing conducted during the development of the atomic bomb. A remedial investigation is 93% complete at the site and has been expanded three times due to discovery of new radiological contamination in areas previously considered remediated. A feasibility study was initiated in September of 2000 to determine the safety of the secure repository and to study potentially viable remediation technologies for application to the secure repository as well as to other on-site contaminated areas. Building 403, originally a laboratory and office building, was decontaminated and demolished in August of 2000. Building 401, a building used for boron-10 manufacture and radiological waste storage, underwent asbestos abatement in the fall of 2000 in preparation for radiological decontamination and demolition. Sediment, air, surface water and groundwater are monitored on a yearly basis to ensure that contaminants are not migrating from the cell into the environment. Project status and accomplishments are presented to the public as each segment of the work is completed. Based on the current schedule, the Remedial Investigation will conclude in the Fall of 2007 and the Feasibility Study will conclude in June of 2008, assuming that treatability studies will not be required.

### **Linde Site, Tonawanda, New York**

The former Linde Site consists of 105 acres in the Town of Tonawanda, New York (just north of the City of Buffalo). The site is bounded on the north and south by industrial properties and small businesses, on the west by an elementary school, a residential neighborhood and a town park, and on the east by CSX railroad tracks, utility easements, and commercial properties. During the 1940s, the Linde Division of Union Carbide used portions of the property for processing of uranium ores under Federal Manhattan Engineering District contracts. These activities resulted in radiological contamination on portions of the property. Principal radionuclides of concern are radium, thorium, and total uranium. Praxair Inc. currently is the site owner and employs over 1,000 staff at the site, which is operated as their worldwide technology center, performing research for their industrial gases business. The Corps has been safely working at the site since 1997.

A Record of Decision to clean up contaminated materials that excluded the Building 14 and Groundwater operable units was signed in March 2000. Since that time, over 260,000 tons (165,000 cubic yards) of contaminated materials have been shipped out of New York State. Estimated project completion for soils cleanup is 2009. A Record of Decision on the Building 14 operable unit was signed in April 2003. Building 14 and contaminated soils beneath the building were removed, generating over 14,000 tons of contaminated materials that were safely shipped off site. The project was completed ahead of schedule and under budget in May 2005. Evaluation of the groundwater operable unit concludes that there are no current or future exposure pathways to FUSRAP eligible contaminants of concern in Linde site groundwater, and, therefore, radiological constituents in the groundwater pose no current or future threat to human health or the environment and that CERCLA action is not warranted. A Proposed Plan was released for public comment in May 2006. A Record of Decision for the groundwater operable unit was signed at the end of 2006.

### **Tonawanda Landfill / Mudflats Area, Tonawanda, New York**

The Tonawanda Landfill was designated into the Formerly Utilized Sites Remedial Action Program (FUSRAP) as a Vicinity Property to the Linde Site by the Department of Energy in 1992. Small areas of soil at the Tonawanda Landfill exhibit elevated levels of radium, thorium, and uranium. The Buffalo District completed a Remedial Investigation (RI) of the site in January 2006. Record searches conducted as part of the investigation did not yield any evidence indicating where this material came from or how it was placed in the landfill. However, the Corps continued its investigation. The Corps' final RI Report found that risks from FUSRAP-like materials to current and potential future site users are within USEPA guidelines; therefore, no remedial action for those FUSRAP-like materials is necessary. The Corps recently released its Proposed Plan for a 90-day public comment period. Following completion of the public review and comment period on the Proposed Plan, the Corps will prepare a Record of Decision to close out the site.

### **Guterl Specialty Steel Corporation, Lockport, NY**

The former Guterl Specialty Steel site comprises about 70 acres in the City of Lockport, New York. The site was used by the U.S. Atomic Energy Commission to perform rolling mill operations on about 35-million pounds of uranium metals and 40-thousand pounds of thorium metals between 1948 and 1955. Specific buildings used in the operations encompass about 9 acres and is described as "Excised Property" and now abandoned. The excised property is contiguous to the Allegany Ludlum Corporation which owns and operates an active steel plant adjacent to the site. A Preliminary Assessment/Site Inspection Report was prepared in April 2001. A remedial investigation was initiated in May 2005 to determine the nature and extent of radiological contamination at the site. Completion of the remedial investigation is dependent on future funding.

### **Harshaw Site, Cleveland, Ohio**

The former Harshaw Chemical Company was contracted by the Manhattan Engineering District (MED) and later the Atomic Energy Commission (AEC) to support the nation's early atomic energy program. From 1944-1959, various forms of uranium were processed in Building G-1 (formerly known as Plant C) for isotopic separation and enrichment at Oak Ridge, Tennessee. In 1960, the site was decontaminated and released for unrestricted use by the AEC. Based on a request from the state of Ohio and site owners, the Department of Energy determined that this site should be reviewed for possible inclusion in FUSRAP and on June 3, 1999, referred this action to the USACE. Based on the results of a Preliminary Assessment, Harshaw Chemical was included in FUSRAP in spring 2001, for further characterization of residuals, from contaminants associated with MED / AEC activities. The Corps has initiated a Remedial Investigation (RI) at the site in accordance with the phased process required in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The Buffalo District has completed the second phase of field work supporting the RI and a Baseline Risk Assessment (BRA). The RI report and BRA are scheduled for completion in the fall of 2006. A Record of Decision (ROD), determining the need for further action under FUSRAP, is scheduled for completion in fall of 2008. Coordination with the regulatory agencies and stakeholders has begun and will continue throughout the process. Depending on the results of the RI and Feasibility Study (FS) and whether the ROD determines the need for cleanup, a remedial action is estimated for completion in fiscal year 2011; assuming project funding is appropriated in coordination with the project schedule.

### **Scioto, Marion, Ohio – [Potential FUSRAP Site]**

In 1948, the AEC acquired an undeveloped portion of the former Scioto Ordnance Plant (SOP). On this property the AEC constructed the Scioto Laboratory Complex (SLC), as a backup to the Mound Laboratory in Miamisburg, Ohio, which produced polonium initiators for the early atomic weapons program. The SLC was intended as a backup facility. Construction of the SLC was completed in July 1949, and it was placed in cold standby status in October 1949. In 1953, the AEC determined the SLC was no longer needed, and

closed the complex. It was declared surplus, and in 1970 the General Services Administration sold the SLC to a private owner for use as a warehouse. A Preliminary Assessment was initiated in 2002 and a draft report prepared in 2004. Due to public concerns about reported radiological contamination a limited sampling of the site was conducted in June 2006. The PA Report is scheduled for completion in 2007.

#### **Shallow Land Disposal Area (SLDA), Parks Township, PA**

The Shallow Land Disposal Area (SLDA) is a 44-acre site. The site is reported to include ten trenches containing waste and soil potentially contaminated with radiological waste materials, such as uranium, thorium, americium and plutonium. Over a 9-year period (between 1961 and 1970), the nearby Apollo nuclear fuel fabrication facility disposed its process wastes, equipment, scrap, and trash in the SLDA trenches. According to the site owner (BWX Technologies), the uranium is present at various levels of enrichment from depleted to highly enriched. Americium and plutonium, attributed to storage of equipment used in the adjoining Parks Facility, has been detected in surface soils near trench 10. The volume of potentially contaminated waste is estimated at 24,300 cubic yards. The Remedial Investigation Report for the site was completed in August 2005, and the Corps is currently conducting the Feasibility Study. The Feasibility Study will identify and evaluate various alternatives. The Feasibility Study is scheduled to be completed in late 2006. The Corps will hold a public meeting to present its Proposed Plan for the site on January 25, 2007 to explain all of the other remediation alternatives identified in the Feasibility Study. The next step will be to complete the ROD for the site – this is scheduled for 2008.

#### **Superior Steel Site, Carnegie, Pennsylvania [Potential FUSRAP Site]**

The former Superior Steel Site in Carnegie, Pennsylvania, processed uranium metal in support of the U.S. Atomic Energy Commission (AEC) fuel element development program from June 27, 1952, until September 30, 1957. Officials are concerned that activities associated with this historical mission may have resulted in residual radiological contaminants being left on portions of the property.

The Buffalo District has initiated a Preliminary Assessment (PA) of the former Superior Steel site to review historical information and determine the need for further action by the Corps, under the FUSRAP. The Corps initiated the PA in May and is scheduled to be complete its report later in 2007.

#### **Joslyn Manufacturing Site, Fort Wayne, Indiana [Potential FUSRAP Site]**

The Joslyn Manufacturing Site, officially known as the Fort Wayne Steel Corporation, is owned by Valbruna Slater Stainless Inc. During the Nation's early atomic energy program, the Atomic Energy Commission, the USACE Manhattan Engineering District (MED) and the University of Chicago contracted with the Joslyn Manufacturing and Supply Co. to assist in developing America's first nuclear weapons. Operations performed at the Joslyn Manufacturing Site included heating and machining of uranium billets converting them into metal rods for shipment to Hanford, Washington. The areas utilized for supporting the AEC/MED program from 1943 to 1952 are currently isolated and inactive. During a recent property transaction due-diligence, the presence of prior radioactive contamination was reassessed and the site was referred to the US Department of Energy (US DOE) for further evaluation. On August 26, 2004, US DOE determined that this site should be reviewed for possible inclusion in FUSRAP and on November 19, 2004 referred this action to USACE. In February 2005, USACE initiated a Preliminary Assessment (PA) of the Joslyn Manufacturing Site, the initial step in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. In October 2005, the PA report was completed and submitted for approval. In December 2005, a decision was made to proceed to the next phase of the CERCLA process, the Site Investigation (SI). The SI was initiated in February 2006 and is scheduled to be completed later in 2007.