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FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM UPDATE 2014



INTRODUCTION

The *Formerly Utilized Sites Remedial Action Program Update* provides information about progress the U.S. Army Corps of Engineers is making in cleaning up sites with contamination resulting from the Nation's early atomic energy program. The Formerly Utilized Sites Remedial Action Program (FUSRAP) was initiated in 1974 to identify, investigate, and if necessary, clean up or control sites throughout the U.S. contaminated as a result of Manhattan Engineer District (MED) or early Atomic Energy Commission (AEC) activities. Both the MED and the AEC were predecessors of the U.S. Department of Energy (DOE).

Congress transferred administration and execution of FUSRAP cleanups from the DOE to the Corps of Engineers in October 1997. The Corps of Engineers continues to clean up sites the DOE began and address sites added to the program by Congress or referred to the Corps of Engineers by the DOE's Office of Legacy Management under a Corps of Engineers/DOE Memorandum of Understanding.

The Corps of Engineers' FUSRAP objectives are to safely, effectively and efficiently:

- Identify and evaluate sites where authority and the need for a response action exist;
- Clean up or control FUSRAP sites to ensure protection of human health and the environment;
- Dispose or stabilize radioactive material in a way that is safe for the public and the environment;
- Perform work in compliance with applicable federal, state, and local environmental laws and regulations; and
- Return sites for appropriate future use.

When executing FUSRAP, the Corps of Engineers follows the investigation and response framework of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This framework is shown on Page 3. Each site may have multiple operable units (OUs) each in a different phase within the CERCLA process.

The Corps of Engineers is committed to informing and involving the public as it progresses through the decision-making process for each site. Response actions are coordinated with the U.S. Environmental Protection Agency (EPA) and/or state environmental regulatory agencies on all sites.

Two years after the Corps of Engineers completes a response action and final closeout activities at a FUSRAP site, that site, along with responsibility for long-term stewardship, if necessary, is transferred back to the DOE. During fiscal year (FY) 2012 the Wayne Interim Storage Site was transferred to the DOE's Office of Legacy Management for long-term stewardship. Additional sites that have been transferred to the DOE in the past are Bliss and Laughlin, Buffalo, New York; the Ashland 1 Site including Seaway Area D and the Ashland 2 Site including Rattlesnake Creek, Tonawanda, New York.

Currently seven districts within three Corps of Engineers divisions work on 25 active FUSRAP sites within 10 states. Districts involved in FUSRAP are Buffalo and Pittsburgh within the Great Lakes and Ohio River Division; St. Louis within the Mississippi Valley Division; and Baltimore, New England, New York, and Philadelphia within the North Atlantic Division. The Corps of Engineers' Environmental and Munitions Center of Expertise and the Kansas City District also provide program assistance.

Since the Corps of Engineers began administering FUSRAP, program funding has ranged between \$99.9 million and \$140 million a year. The FUSRAP budget for FY 2014 was \$103.5 million. Progress and the schedule for each site is dependent on prioritization among all active FUSRAP sites taking into account what CERCLA phase they are in and the availability of FUSRAP funds nationally.

More FUSRAP information can be found at:

<http://www.usace.army.mil/Missions/Environmental/FUSRAP.aspx>

ACTIVE FUSRAP SITES

Great Lakes and Ohio River Division

Buffalo District

- Joslyn Manufacturing and Supply Company, Fort Wayne, Indiana
- Guterl Specialty Steel, Lockport, New York
- Linde Air Products, Tonawanda, New York
- Niagara Falls Storage Site, Lewiston, New York
- Seaway Industrial Park, Tonawanda, New York
- Tonawanda Landfill, Tonawanda, New York
- Harshaw Chemical Company, Cleveland
- Luckey Site, Luckey, Ohio
- Painesville Site, Painesville, Ohio
- Superior Steel, Carnegie, Pennsylvania

Pittsburgh District

- Shallow Land Disposal Area, Parks Township, Pennsylvania

Mississippi Valley Division

St. Louis District

- Iowa Army Ammunition Plant, Middletown, Iowa
- Hazelwood Interim Storage Site/Latty Avenue Vicinity Properties, St. Louis
- St. Louis Airport Site
- St. Louis Airport Site Vicinity Properties
- St. Louis Downtown Site

North Atlantic Division

Baltimore District

- W.R. Grace at Curtis Bay Site, Baltimore

New England District

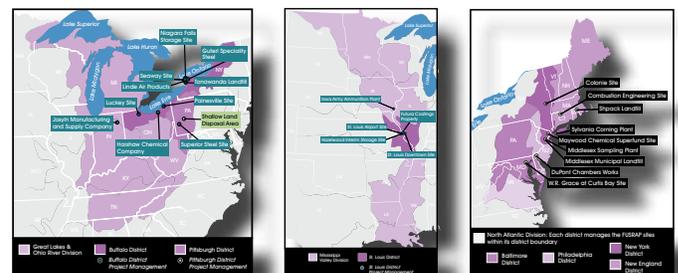
- Combustion Engineering Site, Windsor, Connecticut
- Shpack Landfill, Norton/Attleboro, Massachusetts

New York District

- Maywood Chemical Superfund Site, Maywood, New Jersey
- Middlesex Municipal Landfill, Middlesex, New Jersey
- Middlesex Sampling Plant, Middlesex, New Jersey
- Colonie Site, Colonie, New York
- Sylvania Corning Plant, Hicksville, New York

Philadelphia District

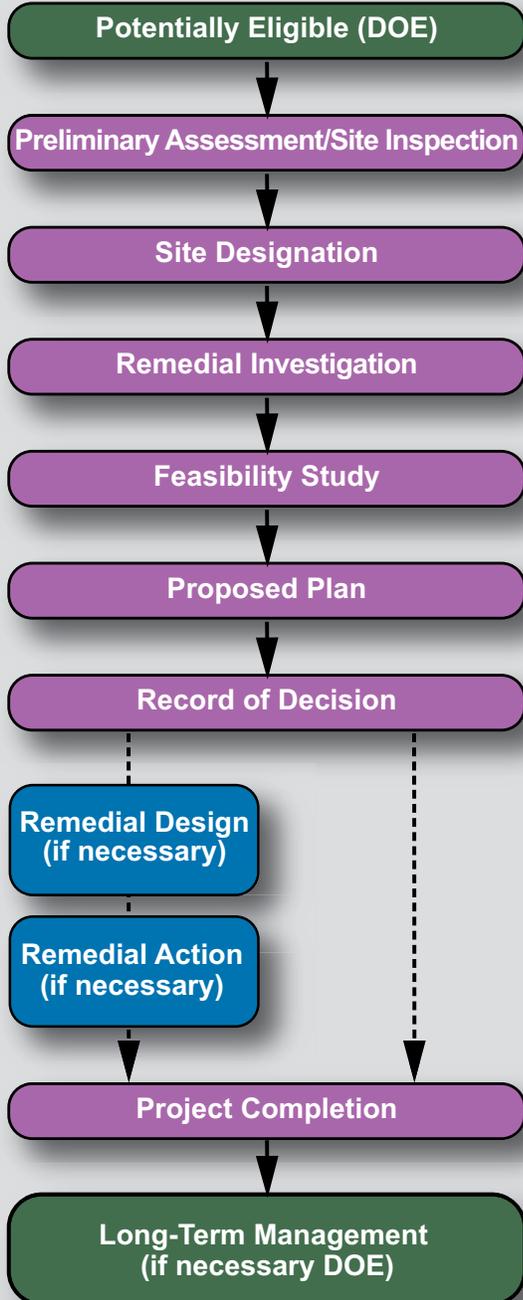
- DuPont Chambers Works, Deepwater, New Jersey





CERCLA Process for FUSRAP

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Process for FUSRAP



A removal action may be initiated at any time during the process if human health or the environment is in immediate danger.

Preliminary Assessment/Site Inspection

- To determine whether there has been a release or potential release that may require further action or investigation and to assess the nature of associated threats.

Remedial Investigation

- To determine the nature and extent of the problem presented by the release.
- To evaluate the fate and transport of contaminants through site media (e.g., groundwater, surface water, etc.).
- To assess potential human health and ecological risks resulting from contaminants in the environment.

Feasibility Study

- To identify and evaluate remedial response alternatives.
- To conduct an initial screen of technologies based on effectiveness, implementability and cost.
- To assemble remedial alternatives from the technologies retained after the initial screening process.
- To perform a detailed analysis and evaluation of each remedial alternative based upon its:
 - 1) Overall protection of human health and the environment;
 - 2) Compliance with applicable or relevant and appropriate requirements;
 - 3) Long-term effectiveness and permanence;
 - 4) Reduction of toxicity, mobility, or volume through treatment;
 - 5) Short-term effectiveness;
 - 6) Implementability; and
 - 7) Cost.

Proposed Plan

- To document the Corps of Engineers' preferred remedial alternative.
- To seek and consider comments from federal and state environmental regulatory agencies.
- To seek and consider comments from the public through a mandatory minimum 30-day public review period.

Record of Decision

- To document the Corps of Engineers' selection of the remedial alternative based upon the remedial investigation, the feasibility study, and comments received from federal and state environmental regulatory agencies and the public on the proposed plan.

Remedial Design (if necessary)

- Detailed designs, plans, specifications, and bid documents for conducting the remedial action are developed during this phase.

Remedial Action (if necessary)

- Upon approval of the remedial design, remedial action (the actual construction and implementation of the selected remedial alternative) is initiated. The remedial action is conducted until the remedial action objectives are achieved.

Site Closeout

- Documents and demonstrates that the Corps of Engineers completed the response action in accordance with the record of decision (ROD) and in compliance with CERCLA, as amended, and the NCP.

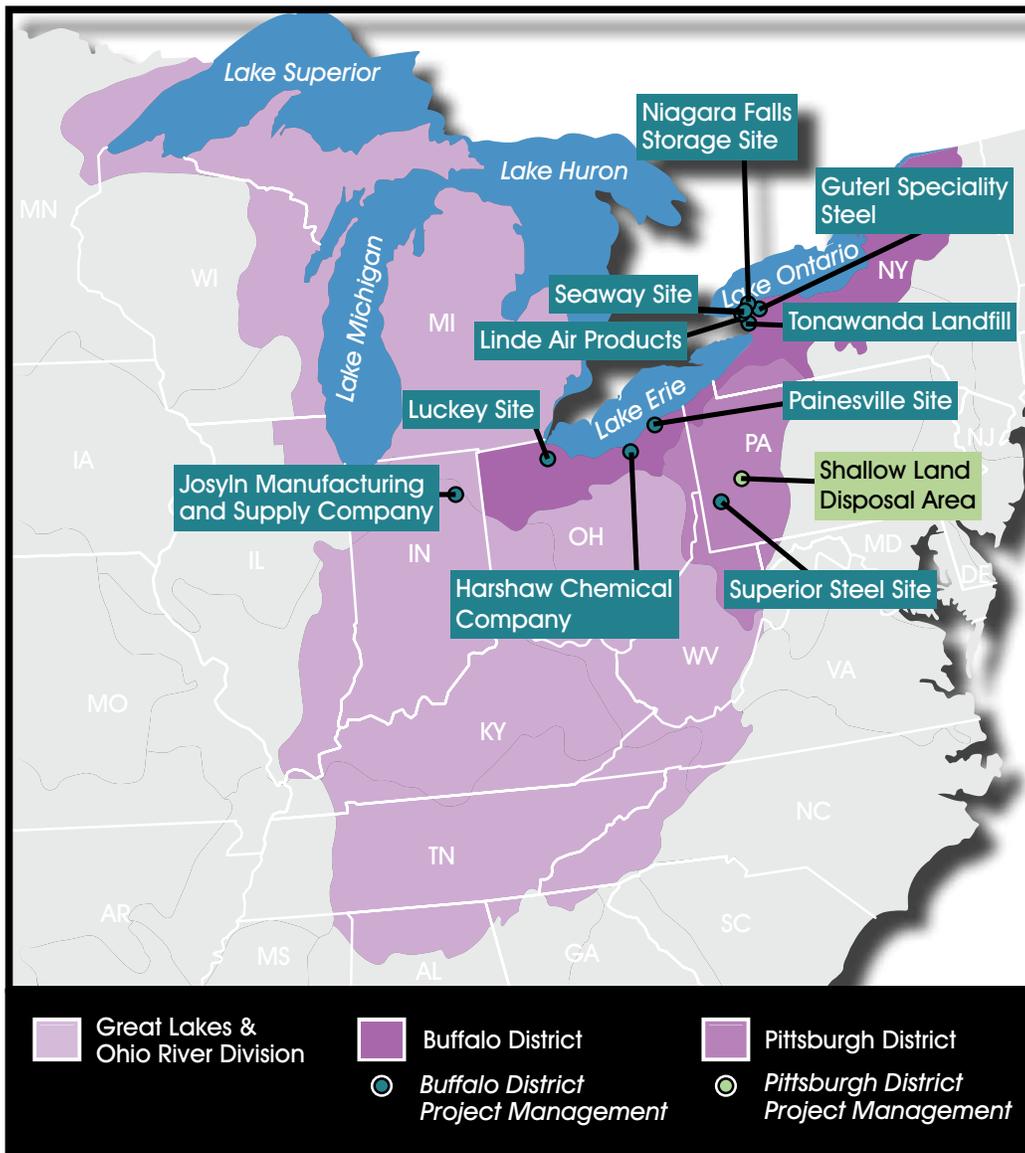
Long-Term Management

- Certain remedies may require a period of operation and maintenance, after the remedy is implemented, before the remedial action objectives and cleanup criteria are achieved.
- Under FUSRAP the Corps of Engineers is responsible for conducting the first two years of any necessary operations and maintenance and/or site monitoring following remedy completion, after which the site is turned over to the DOE for long-term stewardship.



SITE UPDATES

Great Lakes and Ohio River Division



Buffalo District

Joslyn Manufacturing and Supply Company
Fort Wayne, Ind.

From 1943 to 1952 the Joslyn Manufacturing and Supply Company worked under government contract to temper, hot roll, quench, straighten, cool, grind, cut, and thread natural uranium billets into metal rods. The 23-acre Joslyn Site was entered into FUSRAP in FY 2009 and assigned to the Buffalo District. In FY 2014, the Buffalo District initiated project scoping for a remedial investigation currently scheduled for contract award in FY 2017.



Circa 1947 photo of the Joslyn Manufacturing and Supply Company

Guterl Specialty Steel
Lockport, N.Y.

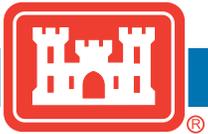
The 70-acre former Guterl Specialty Steel Site, also known as Simonds Saw and Steel Corporation, is located in Lockport, New York. From 1948 to 1956, the Simonds Saw and Steel Company rolled uranium steel billets into rods under a contract with the AEC. During FY 2014, the Buffalo District continued preparing the feasibility study, which develops and evaluates alternatives to address FUSRAP contamination at the site, and is scheduled for completion in FY 2015. Yearly site monitoring and surveillance continues.



Downloading water quality data from permanent groundwater well monitor at the Guterl Specialty Steel Site

Linde Air Products
Tonawanda, N.Y.

Located in Tonawanda, New York, the Linde Site is a 135-acre site currently owned and operated by Praxair, Inc. The Tonawanda Landfill, a vicinity property to the Linde Site, is reported separately in this update. From 1942 to 1946, the former Linde Air Products Division of Union Carbide processed uranium ores at this site under contract to the MED. Remediation and restoration of the Linde Site by the Buffalo District was completed in FY 2013. Approximately 186,000 cubic yards of contaminated material were excavated and shipped to out-of-state disposal facilities. In FY 2014 the district initiated preparation of the site closeout report for the Linde Site, and began preparations for the transfer of the site to DOE's Office of Legacy Management for long-term stewardship. The site closeout report will be completed in FY 2015.



Niagara Falls Storage Site

Lewiston, N.Y.

The Niagara Falls Storage Site (NFSS) is a 191-acre federally owned site, located in Lewiston, New York, 19 miles northwest of Buffalo, containing a 10-acre Interim Waste Containment Structure (IWCS). The Buffalo District performs maintenance, monitoring and environmental surveillance activities at the site to verify the IWCS remains protective of human health and the environment and continues to perform as designed. In FY 2014, the district continued progress on the *IWCS OU Feasibility Study* by continuing to develop the document and solicit community and stakeholder comments on key topics (e.g., applicable or relevant and appropriate requirements). The Buffalo District also performed field investigative activities to further delineate the extent of soil contamination requiring remediation in the Balance of Plant OU (all on-site areas outside the IWCS).



Niagara Falls Storage Site, Balance of Plant OU field investigation

The Buffalo District has an active outreach program for NFSS, which included a site tour for interested stakeholders and regular email updates to the community in FY 2014. The district also employs a technical facilitator for the community to enhance communication and technical understanding during the *IWCS OU Feasibility Study* development by holding periodic meetings throughout each year.

The district will release the *IWCS OU Feasibility Study* in FY 2015 for public review and comment. Public release of the document will be followed by a public information session to discuss the *IWCS OU Feasibility Study* and the next steps of the CERCLA process for the IWCS OU. The district will also release a report detailing the findings of

the Balance of Plant OU field investigation, which focused on reducing the volume uncertainty for site soils requiring future remedial action in support of the *Balance of Plant OU Feasibility Study* development. Additionally, the district is evaluating data for the current open vicinity properties to determine the necessary field investigative activities to support the future remedial investigations/feasibility studies for these properties.

Seaway Industrial Park

Tonawanda, N.Y.



Seaway Site aerial photo, looking south

The Seaway Site is a 93-acre commercial landfill located in Tonawanda, New York, a suburb of Buffalo. Approximately 16 acres of the landfill contain radiological waste that originally came from the nearby Linde Site, which processed uranium ore for the MED. The Corps of Engineers signed a ROD for the Seaway Site in October 2009, which identified Containment with Limited Off-site Disposal as the selected remedy for the site. In FY 2014 the Buffalo District completed the scope of work for the Seaway Site remediation contract.

In FY 2015 the Buffalo District will award a contract for and complete the excavation and off-site disposal of contaminated soils on the landfill perimeter. Prior to field work, an information session will be conducted

to inform the public of remedial and health and safety measures to be employed. Implementation of the landfill containment remedy is scheduled to begin following completion of ongoing remediation at other FUSRAP sites and the availability of program funding.

Tonawanda Landfill *Tonawanda, N.Y.*

The Tonawanda Landfill Vicinity Property, located in Tonawanda, New York, a suburb north of Buffalo, consists of two OUs: the 55-acre Tonawanda Landfill OU and the 115-acre Mudflats OU. The site was designated into FUSRAP in 1992 when early DOE investigations around the Linde Site detected elevated levels of FUSRAP-related radionuclides in the landfill. The Buffalo District completed work at the Mudflats OU in 2008 with a no-action ROD. The district completed preparation of an updated baseline risk assessment for the Landfill OU in FY 2012, which found that while risks to human health from potential exposure to FUSRAP-related material buried in the landfill are within acceptable limits for the current site conditions, risks could potentially increase above acceptable limits in the future, if the surface of the landfill is allowed to erode as time passes.

In FY 2014 the Buffalo District continued preparation of a feasibility study for the Landfill OU, which will develop and evaluate alternatives to mitigate the potential future risks from the FUSRAP-related material buried within the landfill. The Buffalo District will complete the feasibility study in FY 2015, along with the proposed plan presenting the preferred alternative for the Tonawanda Landfill OU. A public comment meeting regarding the proposed plan will be held in FY 2015 following its release.

Harshaw Chemical Company Site *Cleveland*

This 55-acre industrial facility is located three miles south of downtown Cleveland. From 1944 to 1959, the Harshaw Chemical Company was under contract to the MED and the AEC to produce uranium for isotopic separation and enrichment in Oak Ridge, Tennessee.

In FY 2013, the Buffalo District began preparation of a feasibility study addendum to further address groundwater. To fill data gaps and facilitate completion of the feasibility study addendum, a contract was awarded in FY 2014 to remove Building G-1 and conduct additional groundwater investigation activities. During FY 2015, Building G-1 will be deconstructed and groundwater data collected to complete the feasibility study addendum in FY 2016 and develop a proposed plan to present the preferred remedial alternative for each OU.



Looking for signs of failure of the river bank of the Cuyahoga River upstream, downstream, and adjacent to the Harshaw Chemical Company Site



General Overview of the Manhattan Engineer District and Atomic Energy Commission Processes



Uranium Ore:
• Uranium-234
• Uranium-235
• Uranium-238

Mining

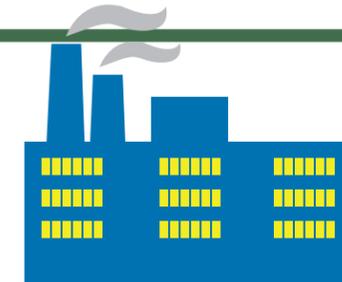
Uranium ore was obtained from the Belgian Congo or the western United States and Canada.



Milling

Uranium was separated from other natural materials in the ore.

◆ *Linde Air Products*



Refining/Conversion

Products of refining/conversion:
• Uranium trioxide (orange oxide)
• Uranium dioxide (brown oxide)
• Uranium tetrafluoride (green salt)
• Uranium hexafluoride
Produces a product that can be enriched.

◆ *Harshaw Chemical Company*
◆ *St. Louis Downtown Site*



Enrichment (Gaseous Diffusion, etc.)

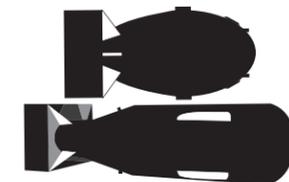
Increases the percentage of Uranium-235.



Uranium Metals and Metals Machining

Metals were manufactured, rolled, and shaped.

◆ *Colonie*
◆ *Combustion Engineering*
◆ *Guterl Specialty Steel*
◆ *Joslyn Manufacturing and Supply Company*
◆ *Superior Steel*



Weapons Development

Enriched uranium provided by other federal operations was sent to weapons production facilities. Other sites involved in early weapons production were used for beryllium and thorium production or were research facilities.

◆ *Iowa Army Ammunition Plant*
◆ *Luckey Site (beryllium)*
◆ *DuPont Chambers Works (research)*
◆ *Sylvania-Corning (research)*
◆ *Maywood Chemical Works (thorium)*
◆ *W.R. Grace (thorium)*



Waste Storage/Disposal

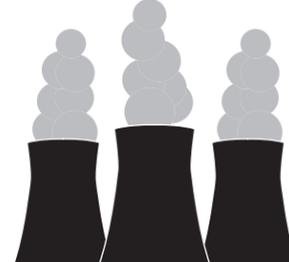
Wastes from processing were sent to facilities for storage/disposal.

- ◆ *Hazelwood Interim Storage Site/ Latty Avenue Vicinity Properties*
- ◆ *Middlesex Municipal Landfill*
- ◆ *Middlesex Sampling Plant*
- ◆ *Niagara Falls Storage Site*
- ◆ *Seaway Industrial Park*
- ◆ *St. Louis Airport Site*
- ◆ *St. Louis Airport Site Vicinity Properties*



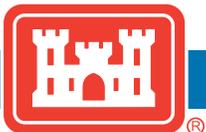
Incidental Contamination

- ◆ *Painesville Site*
- ◆ *Tonawanda Landfill Vicinity Property*



Nuclear Production Reactors

More useful nuclear material created.



Luckey Site *Luckey, Ohio*

The Luckey Site, a 40-acre privately-owned site located 24 miles southeast of Toledo, is currently in the remedial design phase. From 1949 to 1958 the site was operated as a beryllium production facility under contract to the AEC, resulting in beryllium and lead contamination of site soils and groundwater. The site also received scrap steel containing radioactive residues from NFSS, for potential use in magnesium production activities, which were never initiated.

The Buffalo District completed the scope of work for the remediation contract in FY 2014, and issued the request for proposals in early FY 2015. The remediation contract is scheduled to be awarded in FY 2015, with preparation of the remediation work plans to follow.

In FY 2014 the Buffalo District also continued preparation of an explanation of significant differences to document changes in the estimated cost of the remedial action for site soils. The explanation of significant differences will be completed in FY 2015.

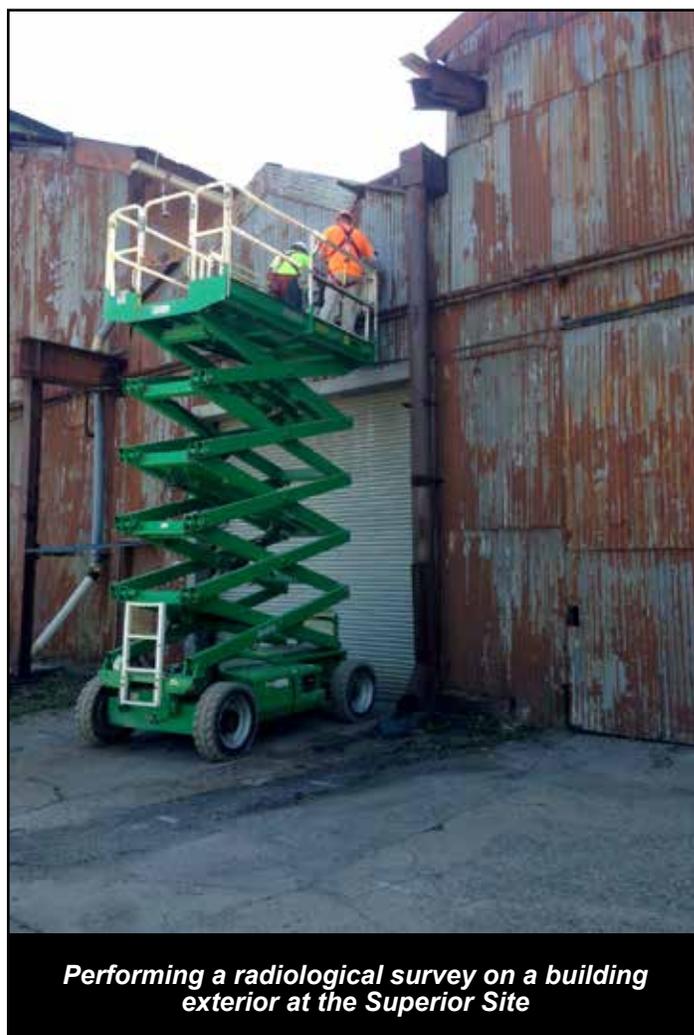
Painesville Site *Painesville, Ohio*

The Painesville Site, a 30-acre privately owned site located about 22 miles northeast of Cleveland, is currently in the project closeout phase. Though not directly involved in past MED or AEC activities, the site became contaminated with FUSRAP-related materials when scrap steel containing radioactive residues was shipped to the site from NFSS, for use in other government-contracted operations. The Buffalo District completed remediation of site soils containing FUSRAP-related material in FY 2011, using innovative soil-segregation technology to increase the efficiency of shipping soil above the site cleanup levels for off-site disposal resulting in a cost savings of approximately \$6 million. A total of 14,800 cubic yards of contaminated material were shipped off site for disposal.

In FY 2014 the Buffalo District completed the site closeout report for the Painesville Site, and began preparations for the transfer of the site to the DOE's Office of Legacy Management for long-term stewardship. In FY 2015 the Buffalo District will continue activities to prepare for the scheduled transfer of the site to DOE in FY 2016.

Superior Steel *Carnegie, Pa.*

The former Superior Steel Site, a 25-acre site located in Scott Township near Carnegie, Pennsylvania, was added to FUSRAP in FY 2008. Uranium metal was processed at the site in support of the AEC's fuel-element development program from 1952 to 1957. The site was also licensed to receive thorium metal for processing and shaping from 1957 to 1958. During FY 2013 the Buffalo District awarded a remedial investigation contract for the site. Investigative field activities were initiated during the summer of 2014 and will be completed during the first quarter of FY 2015. The remedial investigation report will be complete in FY 2016.



Performing a radiological survey on a building exterior at the Superior Site

Pittsburgh District

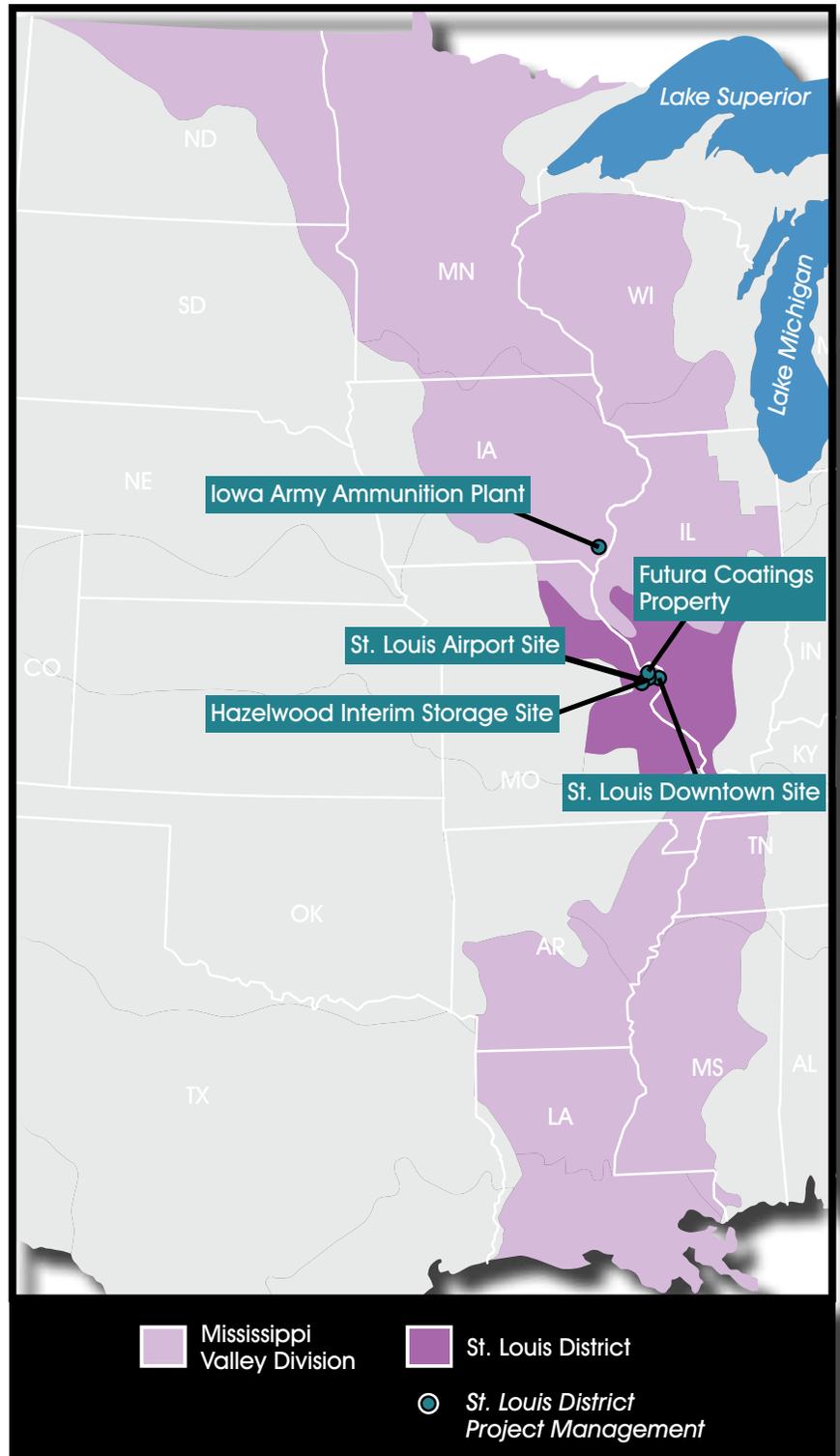
Shallow Land Disposal Area
Parks Township, Pa.

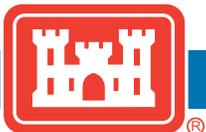
In January 2002, Section 8143 of Public Law 107-117 directed the Corps of Engineers to clean up radioactive waste at the Parks Township Shallow Land Disposal Area under FUSRAP. This 44-acre site located northeast of Pittsburgh consists of 10 trenches containing wastes from a facility that processed uranium and thorium. The site is being addressed in a joint team effort by the Corps of Engineers' Pittsburgh and Buffalo Districts.

In FY 2014, the combined district team developed a proposed ROD amendment and continued the contract acquisition process for a new remediation contract. Pittsburgh District awarded a new security contract for the site, and continues to coordinate with the Nuclear Regulatory Commission (NRC) and DOE on project matters. Program leadership completed and signed a site-specific Memorandum of Understanding with DOE's Office of Environmental Management, the NRC, and the National Nuclear Security Administration for the purposes of facilitating mutual cooperation during cleanup activities.

In FY 2015, the Shallow Land Disposal Area project team plans to complete the ROD amendment and continue remediation contract acquisition activities. The Pittsburgh District will continue to perform ongoing maintenance, monitoring and security activities at the site.

Mississippi Valley Division





St. Louis District

Iowa Army Ammunition Plant Middletown, Iowa



Performing a final status survey at the Iowa Army Ammunition Plant

The Iowa Army Ammunition Plant is an active, government-owned facility that covers over 19,000 acres in southeastern Iowa. From 1947 to 1975, portions of the plant were under the control of the AEC for weapon-assembly operations and munitions testing resulting in uranium and munitions explosives contaminating the soils. In accordance with the signed Federal Facilities Agreement among the Corps of Engineers, DOE, the State of Iowa and EPA, the St. Louis District is addressing the plant areas formerly used by the AEC.

In September 2011, the district completed a ROD for OU 8, which addresses uranium contamination. In April 2014, the district began remediation under this ROD. Under the existing OU 1 ROD, remedial activities continued at two separate locations. OU 1 addresses the explosives used in the AEC weapons-assembly operations. Approximately 1,500 cubic yards were removed and disposed of in FY 2014. In FY 2015, the district will continue the ongoing remediation efforts at the site under both RODs.

North St. Louis County Sites

In FY 2014, the St. Louis District continued remedial activities in accordance with a 2005 ROD for the three sites that comprise the North County St. Louis Sites: St. Louis Airport Site (SLAPS), SLAPS Vicinity Properties, and the Latty Avenue Properties (which includes Hazelwood Interim Storage Site/Futura and six vicinity properties). The district issued

two newsletters for the St. Louis Sites and will continue to do so in FY 2015. An updated community involvement plan and the third five-year review will be released in FY 2015.

St. Louis Airport Site St. Louis

In 1946, the MED acquired the 21.7-acre tract of land, now known as SLAPS, to store residues from uranium processing at the Mallinckrodt facility in St. Louis. Residuals from the uranium processing were accumulated at SLAPS through 1957. During 1966 and 1967, most of the stored residues were sold to a private entity for recycling and were removed from SLAPS. Contamination containing uranium-238, radium-226, and thorium-230 remained on the property. Remedial activities at SLAPS are completed and the post-remedial action report was released in May 2009. Groundwater monitoring and long-term management activities began in 2010 and are ongoing. The site will be transferred back to the DOE Office of Legacy Management when all of the North County sites are completed.



Loadout pad expansion at the St. Louis Airport Site

St. Louis Airport Site Vicinity Properties St. Louis

The SLAPS Vicinity Properties are located in the cities of Hazelwood and Berkeley, Missouri. These 80 vicinity properties also include Coldwater Creek and its vicinity properties. Uranium, radium and thorium contamination at the SLAPS Vicinity Properties is linked to both the St. Louis Airport Site and the Latty Avenue Properties. Over time, residues migrated from other sites or were deposited as the residues were hauled along transportation routes. In FY 2014, the St. Louis District initiated remediation at the Ballfields Phase 2B and Vicinity Properties 57 and 58.

The St. Louis District also completed sampling 10 properties, continued sampling Coldwater Creek and issued documentation releasing eight properties. Additional documents issued include: sampling work plans for 22 properties, and remedial designs for two properties. Approximately 4,415 cubic yards of contaminated material were shipped off site for disposal.



St. Louis North County Vicinity Property 57/58 remediation

In FY 2015, the district will continue the remediation of Vicinity Properties 57 and 58, and initiate the remediation of Coldwater Creek (partial). In addition, the district will continue sampling Coldwater Creek and 22 other vicinity properties and issue documentation releasing eight vicinity properties.

Latty Avenue Properties

St. Louis

The Latty Avenue Properties are comprised of eight vicinity properties as well as the Hazelwood Interim Storage Site and Futura. Early in 1966 ore residues and uranium- and radium-bearing process wastes that had been stored at SLAPS were purchased from MED/AEC by Continental Mining and Milling Company and moved to a storage site on Latty Avenue. In FY 2014, the St. Louis District issued the document releasing the Futura property. The district also completed remediating the interior of the VP-1L buildings and the investigations of two parcels adjacent to VP-1L. In FY 2015, the St. Louis District anticipates issuing the documentation to release

two Latty properties and the VP-1L buildings. The St. Louis District will also begin the implementation of institutional controls to address the remaining contamination beneath the buildings on the Futura property. In FY 2014, groundwater monitoring and long-term management activities were conducted at the Latty site. These activities will continue in FY 2015. The district also anticipates releasing the *Institutional Controls Plan* in FY15.

St. Louis Downtown Site

St. Louis

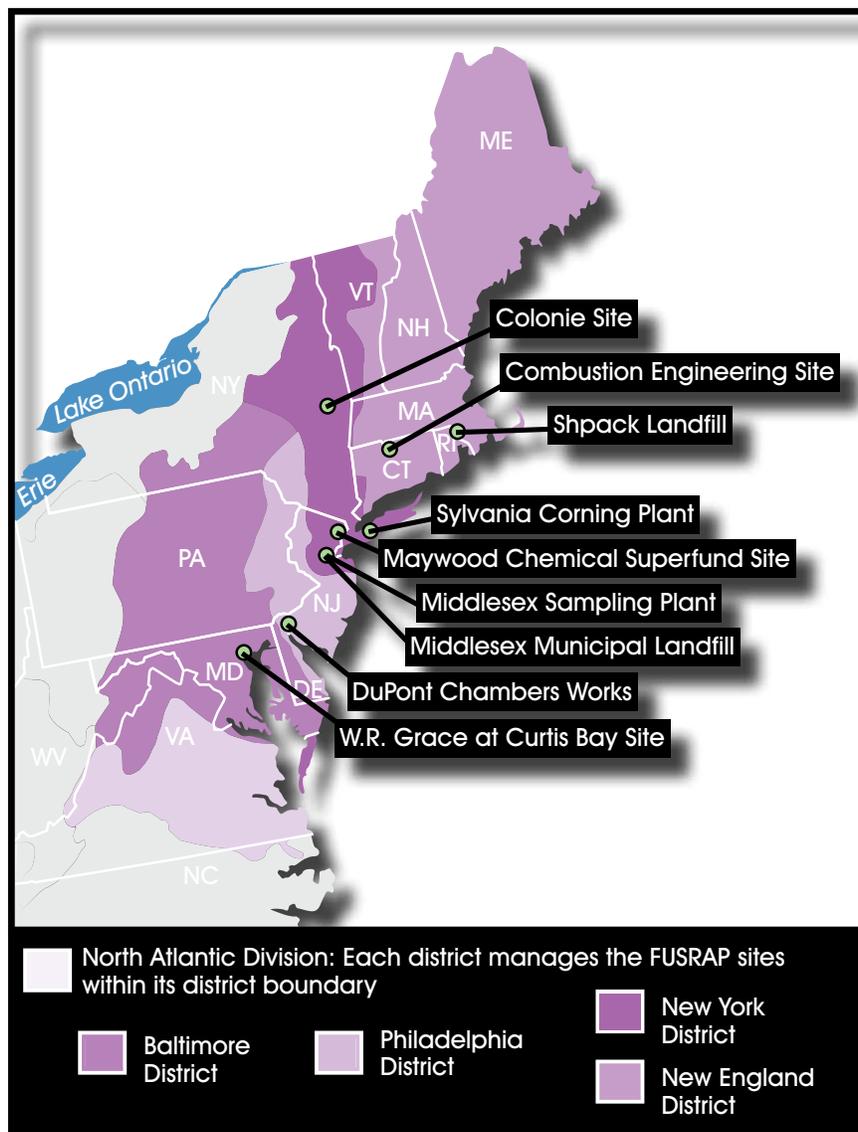
Mallinckrodt Chemical Works, from 1942 until 1957, was contracted by MED and AEC to process uranium ore for the production of uranium metal. Residuals of the process, including spent pitchblende ore, process chemicals, radium, thorium, and uranium, were inadvertently released from the Mallinckrodt Property and into the environment through handling and disposal practices. The St. Louis District continues remedial activities in accordance with the 1998 ROD for the accessible areas at the St. Louis Downtown Site, which includes the Mallinckrodt Plant and 39 vicinity properties.

In FY 2014, approximately 28,264 cubic yards of contaminated material were removed and shipped off site for disposal and a document releasing one property was finalized. Additional FY 2014 efforts consisted of the remediation of two vicinity properties and the remediation within the Mallinckrodt former Building 101 area. The district anticipates continuing the remediation of the former Building 101 area and issuing documents to release four additional areas during FY 2014.

In 2014, the St. Louis District also continued working toward the issuance of a proposed plan for the inaccessible areas at the site that require no further action. The inaccessible areas were broken into Group 1 and Group 2 property groups. *A Final Proposed Plan for No Further Action for the Inaccessible Soil Operable Unit Associated with the Group 1 Properties* was issued in January 2014. In addition, the district issued the *Record of Decision for the Inaccessible Soil Operable Unit Associated with the Group 1 Properties* in September 2014.



North Atlantic Division



Baltimore District

W.R. Grace at Curtis Bay Site Baltimore

From May 1956 through early 1957, thorium and rare earth elements were extracted from monazite sand at the W.R. Grace Curtis Bay Facility under an AEC license. This process occurred in the southwest quadrant of a 100-year-old, five-story manufacturing building (Building 23). Building 23 is still in active use by the property owner. Building components and equipment in the southwest quadrant of Building 23

exhibited residual radiological activity remaining from the monazite sand processing. Waste materials from the processing operations (termed gangue) were disposed of on site in an area referred to as the Radioactive Waste Disposal Area (RWDA).

In April 2008, the U.S. entered into a site-wide settlement agreement with the site owner through the District of Delaware Bankruptcy Court. The agreement states that financial liability shall be shared between the site owner and the government in a 40/60 split. The site owner has site lead to contract, manage and direct the site cleanup according to the final ROD for Building 23 and the ROD for the RWDA, which were

signed in 2005 and 2011. During FY 2014 the district worked with the owner to review plans to implement the remedy for the RWDA.

Plans for FY 2015 include providing technical assistance and oversight to the owner during a data compilation effort to determine if any additional cleanup work is needed to complete the Building 23 remedy.

New England District

Combustion Engineering Site *Windsor, Conn.*

In FY 2012, the site owner, Combustion Engineering, completed the cleanup of FUSRAP-related material at the Combustion Engineering Site, a research, development, engineering, production, and servicing facility for nuclear fuels, systems, and services from the mid-1950s through 2000 located in Hartford County, eight miles north of Hartford. The cleanup was performed as part of ongoing decommissioning work leading toward license termination and unrestricted release in accordance with the requirements of the *License Termination Rule at 10 CFR Part 20, Subpart E*. In FY 2013, the New England District completed its review of the seven final status survey reports submitted by the site owner to the NRC and the district provided comments to the NRC on the reports. The 600-acre site was released for unrestricted use and the NRC license terminated. In FY 2014 the district began preparing a closeout report and plans to return the site to the DOE Office of Legacy Management for long-term stewardship in FY 2017.

Shpack Landfill *Norton/Attleboro, Mass.*

In FY 2012, the New England District completed the FUSRAP cleanup at the Shpack Landfill Site, an eight-acre abandoned domestic and industrial landfill located approximately 40 miles southwest of Boston. The district shipped a total of 50,908 cubic yards of processed waste material off site. In FY 2013, the district demobilized from the site and completed a final status survey, which was shared with the EPA so the CERCLA cleanup of the remainder of the property by the responsible party group could be completed.

The remaining responsible party group work was completed in December 2013. The New England District began preparing a site closeout report in FY 2014 and plans to return the site to the DOE Office of Legacy Management for long-term stewardship in FY 2017.

New York District

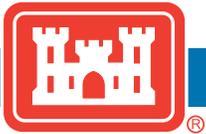
Maywood Chemical Superfund Site, *Maywood, N.J.*



Maywood Phase 18 construction

A combination of 88 private and government-owned properties, this site, which is located approximately 13 miles northeast of Newark, New Jersey, in the boroughs of Maywood and Lodi and the township of Rochelle Park, is listed on the National Priorities List. Contamination at the properties resulted from rare earths and thorium processing activities conducted at the Maywood Chemical Works from the early 1900s through 1959.

Based on regulator five-year review comments, the New York District completed an investigation of 20 commercial and residential properties during FY 2014, some of which were previously investigated or cleaned up by DOE. Of the 20 properties evaluated, four new vicinity properties were added to the site. The four properties were approved as new vicinity properties increasing the total number to 92. Investigation of real property interests in the towns of Lodi and Maywood was completed as well. Updated modeling of remaining contamination at Maywood has been completed. More than 62,000 cubic yards of contaminated soils have been removed from the site.



The district plans to use FY 2015 funding to continue clean up of soils consistent with the soils and groundwater records of decision, clean up the residential properties, as well as issue a real property interest report.

Middlesex Municipal Landfill

Middlesex, N.J.

The Middlesex Municipal Landfill is a 37-acre site located approximately 16 miles southwest of Newark, which consists of parcels belonging to the Borough of Middlesex and the Middlesex Presbyterian Church. The Middlesex Municipal Landfill was operated as a landfill from approximately 1940 through 1972. The landfill was closed following the regulations at the time and maintained with a minimum cover of two feet and establishment of vegetation. Since its closure, the site has not been developed.

A 2008 radiological survey of the site identified small areas of low-level surface radiation leading it to be referred by DOE to the Corps of Engineers in March 2009 for further investigation in FUSRAP. The New York District conducted a preliminary assessment and site inspection in FY 2011. Based on results of the preliminary assessment and site inspection, the district recommended a remedial investigation for the site in FUSRAP. In 2014, the Middlesex Municipal Landfill was officially added to the program. FY 2014 funding was used to initiate the remedial investigation. The New York District plans to use FY 2015 funding to complete the remedial investigation.

Middlesex Sampling Plant

Middlesex, N.J.

The Middlesex Sampling Plant is a 9.6 acre federally owned site located in Middlesex, New Jersey. The MED established the Middlesex Sampling Plant (MSP) in 1943 for use in sampling, storage, and shipment of uranium, thorium, and beryllium ores. MED operations ended in 1955, and the AEC later used the site for storage and performed limited sampling of thorium residues. In 1967, the AEC terminated activities at the MSP and decontaminated on-site structures to meet criteria then in effect. From 1969 to 1979, the site served as a U.S. Marine Corps training center. In 1980, the MSP was returned to the DOE, which designated it for cleanup under FUSRAP. The MSP was used for interim storage of two piles of radioactively contaminated soils removed from vicinity properties and from the Middlesex

Municipal Landfill. The Middlesex Site was added to the EPA's Superfund National Priorities List in FY 1999. Through the end of FY 2001, the New York District has removed and disposed of the Middlesex Municipal Landfill pile and the vicinity property pile. Additionally, the district has completed a remedial investigation/feasibility study/proposed plan, ROD, remedial design for soils on the remainder of the site. Characterization of groundwater contamination is currently ongoing.

At the request of the U.S. EPA, the New York District conducted a supplemental bedrock groundwater investigation in FY 2014 to further delineate contamination underlying this government-owned site. The district expects to use FY 2015 funding to finalize the groundwater feasibility study, incorporating information from the supplemental bedrock groundwater investigation, and complete the proposed plan.

Colonie Site

Colonie, N.Y.

The former 11.2-acre National Lead Industries Site, now called the Colonie Site, was used for electroplating and manufacturing various components using uranium and thorium. Radioactive materials released from the plant exhaust stacks spread to site buildings, portions of the grounds, and 56 commercial and residential vicinity properties.



Sampling a groundwater well at the Colonie Site

The New York District submitted a two-year groundwater monitoring report for the main site, based on a FY 2010 ROD, to the New York State Department of Environmental Conservation, which was approved.

In FY 2014 the district completed a feasibility study and proposed plan, which has been approved by the New York State Department of Environmental Conservation. A work plan to investigate radioactive dust contamination at vicinity properties was approved by the New York State Department of Health during FY 2014. The district plans to use FY 2015 funding to prepare a ROD for the main site soils and evaluate potential contaminated dust at 14 vicinity properties.

Sylvania Corning Plant Hicksville, N.Y.

The Sylvania Corning Plant is a 9.49-acre area located in the westernmost portion of Hicksville, Long Island, approximately 30 miles east of lower Manhattan. From 1952 to 1965, the Sylvania Corning Plant had contracts with the AEC for research, development, and production primarily in support of the government's nuclear weapons program. From 1952 to 1967, a second operation concentrated on AEC-licensed work primarily for the production of reactor fuel and other reactor core components. In September 2011, the site was included in a regional groundwater listing on the National Priorities List. FY 2014 funding was used to conduct an evaluation of off-site groundwater contamination and continue stakeholder coordination. The New York District plans to use FY 2015 funding to continue the groundwater investigation.



Remediation activities at the DuPont Chambers Works

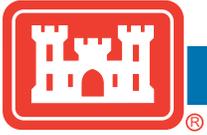
In FY 2014 several site infrastructure improvements were completed that were necessary for the shipment of contaminated material. The rail spur adjacent to Areas of Concern 1 and 2 was replaced where necessary to allow for use during the excavation. Construction of the waste transfer facility was completed, along with the installation of the construction water treatment plant. Excavation of contaminated material began at the end of FY 2014, and shipment of the excavated material began early in FY 2015. Remediation will continue throughout FY 2015.

Philadelphia District



DuPont Chambers Works Deepwater, N.J.

The Philadelphia District is conducting the environmental remediation of the 700-acre DuPont Chambers Works FUSRAP Site, located in Deepwater, New Jersey. Chambers Works is an active chemical manufacturing facility owned and operated by E.I. DuPont de Nemours & Company. From 1942 to 1947, the MED and AEC contracted with DuPont to process uranium compounds and uranium scrap to produce uranium tetrafluoride, uranium hexafluoride and a small quantity of uranium metal.



Potential New Sites

Eligibility of new sites for FUSRAP is determined by the DOE, which refers eligible sites to the Corps of Engineers for further evaluation. As funding becomes available, the Corps of Engineers performs a preliminary assessment, and potentially a site inspection, as well as a preliminary legal analysis of government responsibility at the referred sites. Based on the results of these studies, the Corps of Engineers may designate a site into the program for further investigation and potential action. Sites may also be added to the program through legislative action.

The Staten Island Warehouse Dock in Staten Island, New York, and the Wolff-Alport Chemical Corp. site in New York City as well as NFSS Vicinity Properties H Prime and X have been identified by DOE as eligible and are currently under consideration by the Corps of Engineers for designation into FUSRAP. If any of

these properties are designated into FUSRAP, they will be addressed when funding becomes available in the national program.

The *Formerly Utilized Sites Remedial Action Program Update* is published by the U.S. Army Corps of Engineers in accordance with U.S. House of Representatives Report 107-112, dated June 26, 2001, to accompany the Energy and Water Development Appropriations Act 2002, Public Law 107-66.

For more information, please email candice.s.walters@usace.army.mil or call 202-528-4285.

All Photos: U.S. Army Corps of Engineers

Cover photos:

Top left: St. Louis North County Vicinity Property remediation

Top right: Collecting soil samples at Niagara Falls Storage and bottom: Site to delineate the extent of contamination in the Balance of Plant Operable Unit



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