

# Department of the Interior Central Hazardous Materials Fund

## *Celebrating 20 Years*

Supporting the Cleanup of Department  
Managed Lands



# Central Hazardous Materials Fund

The Central Hazardous Materials Fund (CHF) is the U.S. Department of the Interior's (Department) principal source of funds for the cleanup of the most highly contaminated sites located within national parks, national wildlife refuges, and other Department-managed lands. The CHF is used to help fund the cleanup of contaminated sites using Comprehensive Environmental Resource and Liabilities Act (CERCLA). CHF sites typically pose potential risks to employees, public health and welfare, and the environment. They generally require resources and technical expertise when there are insufficient bureau resources.

The CHF pursues potentially responsible parties for cost reimbursement, or for them to perform work so that the Department can avoid paying for the cleanup costs. The CHF has recovered \$87 million from responsible parties. CHF can use the recovered costs to cleanup sites where there is not a party responsible for the damage. Where responsible parties have decided to perform work, their efforts have avoided \$476.9 million in potential costs to Department. To date, the CHF has received approximately \$217 million in appropriations.

Since 1995, the Department has used the CHF to undergo CERCLA response actions at more than 65 sites and completed cleanup at 20 sites. The sites include abandoned hard rock mines and property transferred to or acquired by the Department that were contaminated by past industrial, military and other uses.

The CHF is managed by the Office of Environmental Policy and Compliance (OEPC). The CHF currently funds projects in the following bureaus: Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), Bureau of Reclamation (BOR), U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), and the U.S. Geological Survey (USGS).

To learn more about the CHF, visit: [www.doi.gov/pmb/oepec/eclm/index.cfm](http://www.doi.gov/pmb/oepec/eclm/index.cfm)



Laysan albatross at Midway Atoll



NPS' Krejci Dump site after remediation

**Cover Photos:** Before and after the cleanup of the Bureau of Reclamation's Matheson Mill Site





# Bureau of Indian Affairs

The Bureau of Indian Affairs (BIA) was established in 1824. BIA provides services to approximately 1.9 million American Indians and Alaskan Natives. There are 566 federally recognized American Indian Tribes and Alaska Natives in the United States. BIA is responsible for the administration of 55 million surface acres and 57 million acres of subsurface minerals estates held in trust by the United States for American Indian, Indian Tribes, and Alaska Natives.

***Mission: “to enhance the quality of life, to promote economic opportunity, and to carry out the responsibility to protect and improve trust assets of American Indians, Indian Tribes, and Alaska Natives”***

To date, the CHF has provided BIA \$8.9 million to support nine projects managed by the bureau. Of the funding provided, \$367,000 has been recovered. The primary project that the CHF has funded for BIA is the Tar Creek Superfund Project.

The Tar Creek Superfund Project (Site) is located in northeastern Oklahoma. It is part of the Tri-State Mining District (Oklahoma, Kansas, and Missouri), which had some of the richest deposits of lead and zinc ore in the United States. Most of the rich deposits of ore are gone, and active large-scale mining that spanned from the late 1800s to 1970 no longer exists. In 1984, the 40 square mile Site was placed on the National Priorities List (NPL). The Site remains one of the most challenging cleanup projects in the U.S. on the NPL due to the extent of disturbance and contamination including: volumes of contaminated waters, sediments, waste materials, and soil. The Site is located on or in close proximity to, Native American lands and communities.

The CHF began funding the Site in 1995 to support BIA as the technical lead for the cleanup on BIA managed land.

The BIA supports the Tribe, the state, and federal agencies in the remedial efforts for several Operable Units (OU) at Tar Creek. At OU 1, impacts to ground and surface water were studied. At OU 2, the focus was on remediating contamination on residential properties and elevated lead levels in children’s blood.



Chat removal activities at Tar Creek



# Bureau of Indian Affairs

The OU3, was an emergency removal action at the Eagle-Pitcher plant. BIA was not involved in OU3. At OU 4, leftover mine tailings, or chat piles, were fenced to prevent illegal removal and unauthorized access to the Site. Also, mine waste, mill waste, smelter waste, and floatation ponds.

At OU 5, the ongoing study considers sediment as well as water contamination at all levels. In 2003, a Memorandum of Understanding among the Department, the EPA, the U.S. Army Corps of Engineers, and co-chaired by all agencies, was developed to provide government coordination and support for the cleanup efforts.

The CHF continues to support BIA's ongoing work including contaminant migration prevention activities. BIA and the other agencies are focusing on establishing a long-term land use program using the Geographical Information System to develop mapping data that will aid in land-use decisions.

The BIA's Eastern Oklahoma Region continues to work toward the remediation of the site and supports the Tribe, the state, and federal agencies working toward the same goals.

**For more information about BIA please visit: [www.bia.gov](http://www.bia.gov)**

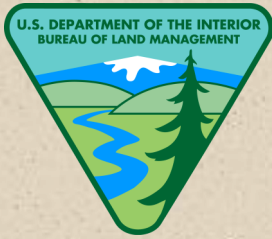


Chat piles at Tar Creek

## Accomplishments

- **At the Tar Creek Site:**
  - **To date, approximately 3,747,434 tons of chat have been removed from the Site**
  - **2,927 properties have been remediated under OU 2**
  - **Children with elevated lead levels in blood have been reduced from 35% to 2%**
  - **The CHF has provided approximately \$3.5 million to BIA to support the Tar Creek project**





# Bureau of Land Management

The Bureau of Land Management (BLM) was established in 1946 through the consolidation of the 1812 General Land Office, and the 1934 U.S. Grazing Service.

The BLM is responsible for carrying out a variety of programs for the management and conservation of resources on 258 million surface acres as well as 700 million acres of subsurface mineral estate. The public lands BLM manages make up approximately 13% of the total land surface of the United States and more than 40% of all land managed by the Federal Government.

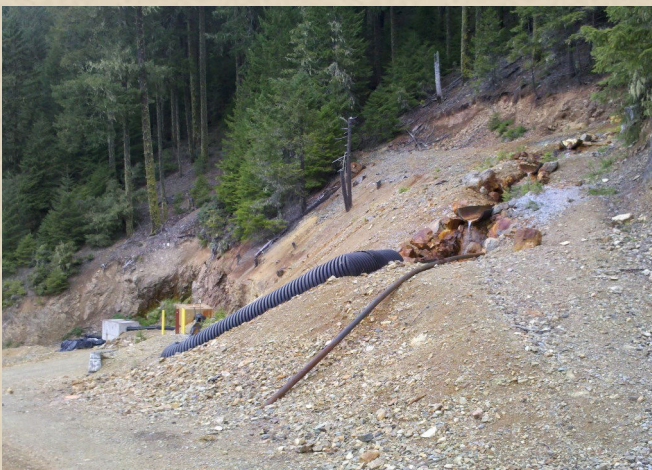
To date, the CHF has provided BLM \$62.1 million to support 43 projects. Of the funding provided, \$8.25 million has been recovered, which has been able to support additional cleanup work at CHF sites.

Some of the sites funded by the CHF include the Formosa Mine, Ute Ulay, Manning Canyon Mill, Saginaw Hill Abandoned Mine Land, and Lee Acres Landfill.

The Formosa Mine National Priorities List site is located in Southwest Oregon, approximately 25 miles south of the city of Roseburg. This is a mixed ownership site where the EPA is the lead on privately owned land, and BLM is the lead regulatory agency on BLM land. The site is situated in the Coast Range Klamath Mountains at elevations ranging between 3,200 and 3,600 feet. The site is in the South Umpqua Basin, and is situated near the top of a mountain ridge that divides several sub-watersheds.

The mine is approximately 700 feet deep and consists of a network of underground workings and mineral processing areas. The site was left with a legacy of acid mine drainage (AMD) that formed in the network of underground workings.

***Mission: “to sustain the health, diversity, and productivity of America’s public lands for the use and enjoyment of present and future generations”***

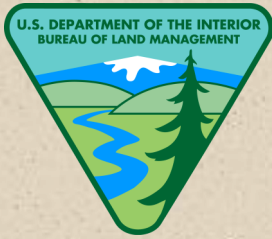


Formosa 1 adit temporary AMD treatment



View from the Formosa NPL site





## Bureau of Land Management

AMD flows into Middle Creek, South Fork Middle Creek, and might flow into other streams from the Formosa 1 and Silver Butte Adits, numerous groundwater springs, and areas containing surface mine waste. AMD from the Formosa 1 Adit has severely degraded Middle Fork Creek and the South Fork of Middle Fork Creek which affects resident fish, coastal steelhead trout, and Oregon coastal coho salmon. The site is also located in the municipal watershed for the City of Riddle.

The Formosa 1 Adit is located on BLM land, and the Silver Butte Adit is on private land. Since the 1930s, approximately 5 to 20 gallons per minute of AMD has flowed out of the Formosa 1 Adit, and up to 10 gallons per minute has flowed out of the Silver Butte Adit. BLM is implementing a removal action to control the AMD from the Formosa 1 Adit, and EPA is implementing a remedial action for the entire site. BLM is participating in the full site remedial action to ensure that the remedy will be suitable for the impacted BLM land. To date, the CHF has provided the Formosa project approximately \$3.8 million. The project has received some support from the EPA and the U.S. Department of Agriculture that has resulted in cost savings to the Department.

BLM also supports the Ute Ulay Mine-Mill Area (Ute Ulay). Ute Ulay consisted of five mine/mill tailings sites located along a seven mile stretch of Henson Creek, within the Henson Creek watershed west of Lake City, Colorado. The mine was established in 1871, and the mill was erected in 1882. Gold, silver, lead and zinc mining/milling took place at the site. The non-economic mill tailings were transported in slurry form via a wooden flume to the unlined settling impoundments at the Upper Tailings Impoundments Area. The Upper Tailings Impoundments Area consisted of five unlined tailings impoundments and two tailings overflow areas. The site is on both private and BLM land.

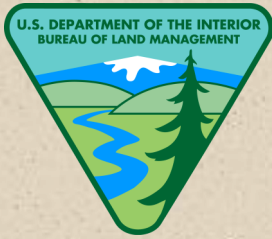
The site consists of two projects in which BLM is working in partnership with the State of Colorado. The first project has been completed. It consisted of the installation of monitoring wells, excavation of mill tailings from the Upper Tailings Impoundment Area and consolidation of the tailings in an onsite repository, re-grading and re-vegetating of the excavated site along with annual inspection and groundwater monitoring. Re-vegetation was completed in 2010. Ongoing work on this project includes groundwater monitoring and maintenance on the repository cap. The CHF has provided BLM approximately \$1 million to support the site.

**For more information about BLM, please visit:**  
[www.blm.gov](http://www.blm.gov)



Ute Ulay Mine





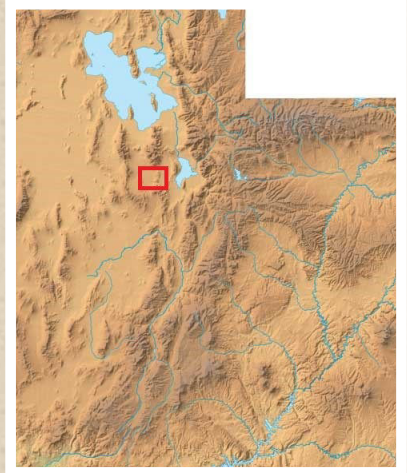
# Bureau of Land Management

## Manning Canyon Mill, *Fairfield, UT*

The Manning Canyon Mill Site (Site), was an abandoned gold mining operation, located within the Mercur Mining District, approximately 1.6 miles west southwest of the town of Fairfield, Utah.

The Site is approximately 1,470 acres, with six defined tailing areas that cover approximately 66 acres, if the material was spread out. Of the 66 acres, 44 acres are on land managed by the BLM, with the remaining tailings located on private land.

The Site was contaminated with tailings from the Manning Canyon Mill. The Manning Canyon Mill processed gold ore from the Mercur gold mine between 1890 and 1937. Approximately 720,200 cubic yards of tailings and waste rock were deposited at the Site. Tailings were initially placed in tailings ponds. The ponds were later breached allowing tailings to wash downstream. The re-deposited tailings were prone to wind and water erosion and were easily washed downstream, or moved by the wind.



Manning Canyon is located approximately 1.6 miles southwest of Fairfield, Utah

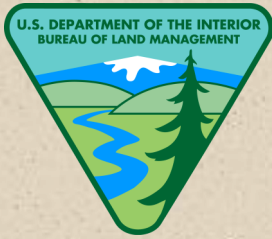


Downstream migration of the contaminated tailings

During the 1990s, BLM identified the site during an abandoned mine land inventory. Studies began shortly after. Between 1996 and 1998, BLM and EPA conducted a Preliminary Assessment and Site Inspection and ultimately determined that a non-time critical removal action to address the tailings was necessary.

The contaminants of concern were with arsenic, mercury, and lead. The level of arsenic at the Site was 76 times higher than the allowable risk levels. The Site posed a risk to recreational visitors, and there was also the possibility that the migration of tailings could impact the town of Fairfield during heavy rains.





# Bureau of Land Management

## Manning Canyon Mill, *Fairfield, UT* (cont.)

The removal action took approximately 5 years to complete. There were four phases. Phase 1 began in 2002. During this phase, surface division channels were constructed and the tailings were consolidated into a repository. Phase 2 involved the construction of the repository and cap. During Phase 3, the tailings from the lower tailings area were moved, placed into the repository, and capped with impermeable fabric. Phase 4 consisted of removing the additional tailings identified during the earlier phases and placing them into an extension of the repository.

Upon completion of the four phases, BLM added top soil and reintroduced native vegetation on the repository. The site is currently fenced and remains closed to visitors to ensure that the remedy remains protected.

Remediation cost approximately \$18.7 million. The CHF provided \$11.2 million and the responsible party provided approximately \$7.5 million of support, including allowing the placement of part of the repository on the adjoining private land.

**To learn more about Manning Canyon Mill, please visit: [www.blm.gov/ut/st/en/fo/salt\\_lake/more/hazardous\\_materials/manning\\_canyon.html](http://www.blm.gov/ut/st/en/fo/salt_lake/more/hazardous_materials/manning_canyon.html)**

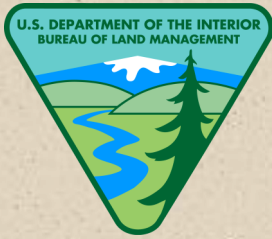


Primary Mill tailings pile at the site

### Accomplishments

- **Consolidated approximately 66 acres of tailings in an on-site repository**
- **Site is currently in long term monitoring**
- **The CHF has provided approximately \$11.2 million to support the project**
- **The project has received approximately \$7.5 million of support from the responsible party**





# Bureau of Land Management

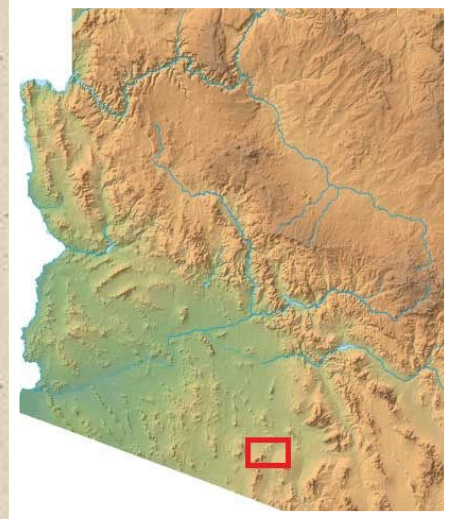
## Saginaw Hill, Tucson, AZ

Saginaw Hill (Site), an abandoned mine, is located approximately 10 miles southwest of Tucson, Arizona. The Site is located on BLM property, and consists of two areas of contamination: the Saginaw Mine (approximately 5 acres) and the Palo Verde Mine (approximately 1 acre).

The Site is located on a 540 acre parcel of BLM land that is surrounded by private land. The private land surrounding Saginaw Hill experienced an increase in residential development.

Saginaw Hill was part of the Amole Mining District. During the early 20th Century gold, silver, and base metals were mined within the District. As a result of the history of mining, the soil and groundwater at the Site were contaminated with arsenic, lead, and mercury. The Site contained waste rock, tailings, and smelter slag.

In 2003, a Preliminary Assessment identified high levels of metal contaminants from the residual mine wastes. There was potential for exposure to the residential community surrounding the Site, as well as to the people who drove all terrain vehicles around and within the Site. There are two species found on the Site that are threatened or endangered: the lesser long-nosed bat and the cactus ferruginous pygmy owl.



Saginaw Hill is located approximately 10 miles southwest of Tucson, AZ

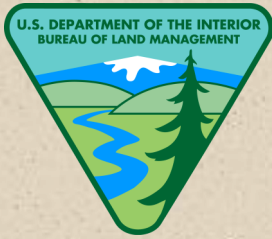


Saginaw Hill completed cap



Saginaw Hill completed cap





# Bureau of Land Management

## Saginaw Hill, Tucson, AZ (cont.)

The final design and cost estimate was completed in 2007, and work to implement the selected remedy began in 2009.

The first phase of the remedy involved the following actions: 1) excavation and stabilization of an on-site arroyo which served as a means of transport of contaminants from the property boundary, 2) consolidation of several auxiliary waste piles at the repository location, 3) installation of ground cover at excavated areas, and 4) installation of monitoring wells. The second phase of the removal action focused on excavating and consolidating tailings, waste rock, and other contaminated materials in an on-site repository. Once the repository was completed, BLM graded and capped it to prevent future migration of the tailings. The removal action was completed in 2006. BLM has installed fencing to protect the remedy, and closed part of the area to the public. The Site is currently in operations and maintenance.

The CHF provided BLM approximately \$2.27 million to complete the remedy.

**To learn more about Saginaw Hill, please visit: [www.blm.gov/az/st/en/fo/tucson\\_field\\_office.html](http://www.blm.gov/az/st/en/fo/tucson_field_office.html)**

### Accomplishments

- **BLM consolidated tailings and waste piles in an on-site repository**
- **Site is in operations and maintenance**
- **The area has been fenced to protect the remedy**
- **The CHF has provided approximately \$2.27 million to support the project**

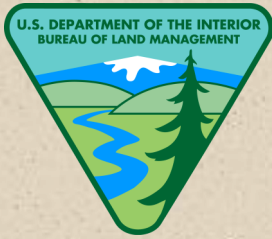


Saginaw Hill completed cap



Saginaw Hill completed cap





# Bureau of Land Management

## Lee Acres Landfill, *Farmington, NM*

Lee Acres Landfill Superfund Site (Site) is located approximately 4.5 miles east of Farmington, New Mexico in San Juan County. BLM manages the 60 acre Site near where an arroyo meets the San Juan River.

In 1962 the BLM leased 20 acres to San Juan County to operate a county landfill. An additional 40 acres were added to the lease in 1980. The landfill operated between 1962 and 1986. In 1985, the landfill was closed to liquid waste disposal after a berm on the northern lagoon was breached, resulting in a release of liquid contents and hydrogen sulfide gas.

In 1997, BLM withdrew 134.6 acres of public land, including the Lee Acres Landfill and a surrounding buffer from settlement, sale, location or entry for a period of 50 years (62 FR 2177, Public Land Order No. 7234). The portion of the withdrawal that contains the landfill is fenced and locked to prevent public access.

In 1990 the EPA added the area to the National Priorities List. The BLM, EPA and the State of New Mexico have been actively involved in the remediation of the Site.

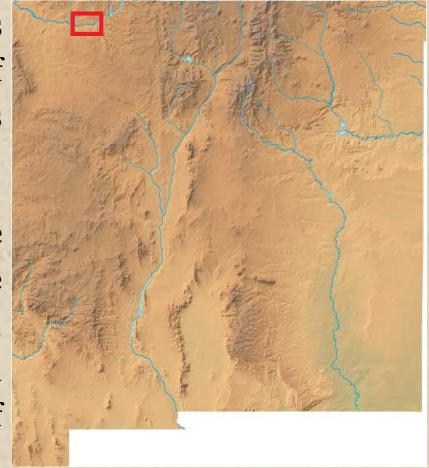
The contaminants of concern (COCs) for the site were: 1,2-cisdichloroethene, 1,2-trans-dichloroethene, tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride, manganese, and nickel. A release of hydrocarbon constituents such as benzene was found in



Lee Acres cap construction

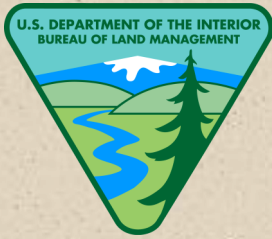
the Lee Acres residential subdivision located approximately 2,000 feet south and down-gradient to the landfill.

The primary concern was the potential for leaching of the residual contamination from the landfill soils into groundwater. The remedy included placing a landfill cover (capillary barrier cover) with lysimeters and surface water run-on and run-off controls; monitoring natural attenuation of the groundwater. Also, placing the institutional controls of BLM's withdrawal in 1997; and realigning County Road 5569 to allow for a fence to isolate the highway from the landfill.



Lee Acres Landfill is located approximately 4.5 miles east of Farming, New Mexico





# Bureau of Land Management

## Lee Acres Landfill, *Farmington, NM (cont.)*

Construction of the remedy began in October 2004, and ended in April 2005. BLM continues to monitor the ground water to ensure that the capillary barrier cap and natural attenuation remedy are effective. CERCLA requires that sites where there are restrictions placed on the potential uses of land or other natural resources review the remedy's effectiveness and ability to protect human health and the environment on a five year basis. The first Five-Year Review (5YR) of the site was performed in 2009 and the cover was rated to be in excellent condition. The 2009 (5YR) demonstrated that the remedy was protective in the short-term. The most recent Cover Inspection Report dated October 13, 2013, found the cover to be in excellent condition. The site's second 5YR for 2014 is currently in progress.

The CHF provided Lee Acres approximately \$1.73 million to fund the cleanup. EPA performed approximately \$9 million worth of work at the site to implement the remedy.

***For more information about the Site and cleanup status, please visit:***  
[www.blm.gov/nm/st/en/fo/Farmington\\_Field\\_Office.html](http://www.blm.gov/nm/st/en/fo/Farmington_Field_Office.html)

### Accomplishments

- **Completed the final remedy, including the installation of capillary barrier cap**
- **The first 5YR demonstrated that the remedy was performing as intended.**
- **Currently completing the second 5YR**
- **The CHF provided approximately \$1.73 million to fund the cleanup and EPA performed approximately \$9 million worth of work to support the remedy**



Inspection during 2009 5YR



# Bureau of Reclamation



The Bureau of Reclamation (BOR) was established in 1902 and is best known for the dams, power plants, and canals it has constructed in the western states. These water projects supported homesteading and promoted economic development of the West.

***Mission: “manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public”***

BOR has constructed more than 600 dams and reservoirs, including Hoover Dam on the Colorado River and Grand Coulee on the Columbia River, and brings water to more than 31 million people. In so doing, the BOR provides one out of five Western farmers with irrigation water for 10 million

acres of farmland that produce 60% of the nation's vegetables and 25% of its fruits and nuts. Furthermore, the BOR is the second largest producer of hydroelectric power in the western United States with 53 power plants annually providing more than 40 billion kilowatt hours, thus generating nearly a billion dollars in power revenues and producing enough electricity to serve 3.5 million homes.

To date, the CHF has provided \$5.07 million to support BOR’s activities in cleanup projects. These projects include the PG&E Topock Compressor Station Site located on the Arizona and California border and the Lake Roosevelt Site located in Washington as well as the Matheson Ore Transfer Station. While BOR has only had three CHF funded projects, the bureau has provided technical support services to many of the other land managing bureaus’ CHF projects.

The Matheson Ore Transfer Station (Site) is part of the Iron Mountain Mine (IMM) Superfund Site. The Site is located approximately nine miles north of Redding, CA.



Matheson in operation—1924



Matheson in 2001





# Bureau of Reclamation

From the 1860s through 1963, the 4,400 acre IMM was mined for iron, silver, gold, copper, zinc, and pyrite. These historic mining activities resulted in metal contamination and acid mine drainage that impacted drinking water sources and the aquatic ecosystem.



Matheson in 2005—Prior to hydro seeding

The settlement with the responsible party did not cover the Site's full remediation costs. The Site was considered low risk and was not granted any money from the settlement fund. As a result, the CHF provided BOR \$1.98 million to cleanup the site. BOR identified creative ways to reduce the costs since none of this funding was able to be recovered. Cost saving measures included “piggybacking” off of existing contracts EPA held for the IMM. The Site has been successfully cleaned up, and visitors can safely enjoy the Shasta

Area Rails to Trails system that travels through the Site.

BOR also supported EPA's cleanup of the IMM as a technical advisor. BOR assisted the federal land manager who is responsible for operating the Central Valley Project. The Central Valley Project consists of the Shasta, Keswick, and Spring Creek Debris dams that contribute to the remedy of the IMM.

*For more information about BOR, please visit: [www.usbr.gov](http://www.usbr.gov)*

## Accomplishments

- **At the Matheson Site:**
  - **Pyrite ore from the Site no longer enters the Sacramento River**
  - **Visitors can safely enjoy the Site as part of a Shasta Area Rails to Trails System**
- **The CHF has provided approximately \$1.98 million to BOR to support the project**



Matheson in 2006—Grass is beginning to grow



# U.S. Fish and Wildlife Service



The U.S. Fish and Wildlife Service (FWS) was established in 1956 through the Fish and Wildlife Act and is best known for managing the 150 million acre National Wildlife Refuge (NWR) System, 70 National Fish Hatcheries, along with over 150 fishery resource offices and ecological field stations combined.

FWS is responsible for guiding the conservation, development and management of the Nation's fish and wildlife resources.

***Mission: “working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people”***

In order to meet this objective, FWS is responsible for enforcing federal wildlife laws, protecting endangered species, managing migratory birds, restoring nationally significant fisheries, conserving and restoring wildlife habitat, helping foreign governments

with international conservation efforts, and distributing hundreds of millions of dollars through the bureau's Wildlife Sport Fish and Restoration Program to State fish and wildlife agencies. Because the majority of fish and wildlife habitat is on non-Federal lands, FWS works with partners to foster conservation and restoration of habitat.

To date, the CHF has provided FWS \$95.8 million to support over twenty five projects within the bureau. Of the funding provided, the bureau has been able to recover \$17.9 million to support projects. In many instances the FWS projects are led by the EPA or the Department of Defense (DOD) with FWS oversight and support.

Some of the sites funded by the CHF include the Prime Hook NWR, Vieques and Culebra NWR, the Crab Orchard NWR, Midway Atoll NWR, and Sachuest Point NWR.

The Prime Hook NWR is located in Milton, Delaware. The Broadkilm Sportsman's Club has been shooting trap on a property adjacent to Prime Hook for almost 40 years, and approximately 22 acres of refuge property fall within the shooting trajectory. As such, portions of this area have received significant amounts of lead shot deposition through the years.



Prime Hook National Wildlife Refuge





## U.S. Fish and Wildlife Service

In 1999, it was found that surface soils contained quantities of lead shot that greatly exceed the density of 1 shot/ft<sup>2</sup>. Pellet counts from samples collected within the shooting trajectory ranged from 49 to 57,868 shot/ft<sup>2</sup> with a mean of 6,673 shot/ft<sup>2</sup>. This is of particular ecological concern because birds ingest lead shot into their gizzards as grit to aid in the digestion of food, and this lead ingestion is a significant cause of mortality and sublethal effects in many avian species. Using Refuge Cleanup funds, delineation activities were completed in May 2000, and liner emplacement was completed in early July 2000. A PA/SI report was completed in March 2001 and cleanup goals were established. The cleanup footprint consists of 4-5 acres of uplands and wetlands, and in 2002-2003, the geotextile from .8 upland acres was removed. Using the CHF funds, eight inches of soil and lead shot were excavated and landfilled, a soil stabilizer was added, and the area was backfilled with clean soil and re-seeded. The project is now in the Operations and Maintenance Phase.

The Atlantic Fleet Weapons Training Area (AFWTA) included the eastern and western portions of the island of Vieques and numerous portions of the Culebra Archipelago and associated waters. The EPA and DOD are leading the cleanup of the AFWTA, with support and oversight of the FWS who is involved to ensure that the interests of the Vieques and Culebra NWR are being met with the cleanup. Activities that took place on the islands included marine amphibious landings, small arms and artillery firing, close air support training exercises, shore bombardment, air-to-ground bombing, and others that have contaminated the Refuge and surrounding land. The land that makes up the NWR was transferred to FWS from DOD in 2001 and 2003.

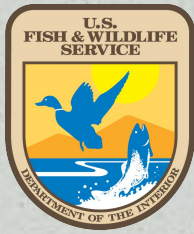


Vieques National Wildlife Refuge

Approximately 900 acres of the Refuge is considered a wilderness area. It is also the largest Refuge in the Caribbean and provides habitat to at least two plants and eight animals on the Federal endangered species list, including the West Indian manatee, the brown pelican, the Hawksbill sea turtle, the Leatherback sea turtle, Atlantic green sea turtle, and the Atlantic loggerhead sea turtle. The Refuge includes a subtropical dry forest, mangrove lagoons, wetland salt flats and a bioluminescent bay.

**For more information about FWS, please visit: [www.fws.gov](http://www.fws.gov)**





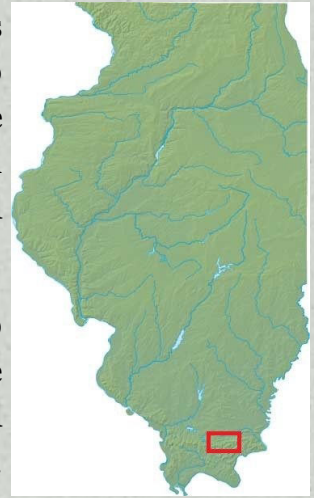
# U.S. Fish and Wildlife Service

## Crab Orchard NWR, *Marion, IL*

The Crab Orchard National Wildlife Refuge (Refuge) is located in Southern Illinois and is centered on Crab Orchard Lake, a nine mile long, 7,000 acre man-made reservoir. The Refuge is 43,500 acres. The Refuge was established in 1947 to support wildlife conservation, agriculture, recreation, and industry. The Refuge is managed by FWS.

Crab Orchard Superfund Site (Site) comprises approximately 22,000 acres within the Refuge. In 1987, the EPA added the area to the National Priorities List. The FWS, EPA, Department of the Army, and the Illinois EPA are actively involved in the Site's remediation. Contamination from the many sites occurred from past military use and subsequent reuse of the industrial areas by private companies.

Types of contaminants include solvents, PCBs, heavy metals, and munitions chemicals. At the end of WWII, Congress wanted to maintain the munitions manufacturing capacity as well as protect the local habitat, which resulted in the establishment of the Refuge.



The Crab Orchard National Wildlife Refuge is located in Southern Illinois



The former wastewater treatment plant that received contaminated industrial wastes before cleanup

As remediation at the Refuge has been completed, several of its operable units (OUs), have been closed. The Department's CHF has provided approximately \$56.7 million for Site cleanup. The CHF is authorized to recover money from responsible parties, and has received approximately \$23.6 million in cost recoveries. In addition, the responsible parties have performed work at the Site, resulting in approximately \$78.5 million in cost savings for the Department. These types of savings allow CHF funding to be used at other cleanup projects.

The cleanup of the Site supports the values and uses for which the Refuge was designated. Presently, the Refuge is primarily used for wildlife habitat and recreation. About 20% of the Refuge is covered by open water, serving as habitat for fish, waterfowl and other birds.





# U.S. Fish and Wildlife Service

## Crab Orchard NWR, Marion, IL (cont.)

The Refuge's three man-made lakes, which together exceed 8,700 acres, provide the public opportunities for boating and fishing. Other activities the public can enjoy at the Refuge include: hunting, camping, swimming, environmental education, and wildlife observation.

The FWS continues to work with the EPA, and other federal and state partners in addressing the human health and environmental risks at the Site.

**For more information about the Site and cleanup status, please visit: [www.fws.gov/refuge/Crab Orchard](http://www.fws.gov/refuge/Crab_Orchard) and [www.fws.gov/midwest/craborchardcleanup/](http://www.fws.gov/midwest/craborchardcleanup/)**



Preparing for planting at the former wastewater treatment plant after cleanup



The former wastewater treatment plant after remediation

## Accomplishments

- Reforestation of 84 disrupted acres
- Removal of five water towers and soils contaminated with lead
- Cleanup completed at three Sites, which included the excavation of:
  - 2,800 cubic yards of lead contaminated soils
  - 40,000 cubic yards of soil contaminated with heavy metals
  - 117,000 tons of soils contaminated with PCBs, heavy metals and trichloroethylene
- The CHF has provided approximately \$56.7 million to FWS to support the project
- To date, the project has recovered \$23.6 million
- The responsible parties have performed work at the Site, resulting in approximately \$78.5 million in cost savings for the Department

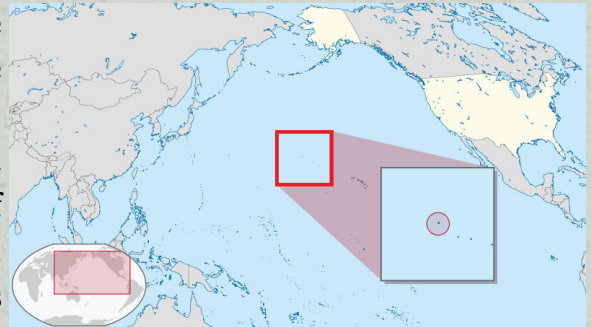




# U.S. Fish and Wildlife Service

## Midway Atoll NWR, *Midway Atoll*

Midway Atoll National Wildlife Refuge (Refuge) is located at the northwest end of the Hawaiian Islands archipelago, and is comprised of two main islands, Sand and Eastern, and a smaller islet. The Refuge is a part of the Papahānaumokuākea Marine National Monument (Monument). The Refuges' CHF project's focus is on Sand Island.



Starting in 1903, several buildings were constructed as part of a surface way-station for the trans-Pacific telegraph cable. Later that year, President Theodore Roosevelt placed the atoll under the control of the United States Navy to protect the cable station. The Navy managed Midway until 1996, when the Atoll was transferred to the FWS. All the property and structures on Midway Atoll were transferred to the FWS, including more than 133 structures, of which 95 structures contained lead-based paint (LBP).

Midway Atoll National Wildlife Refuge (Refuge) is located at the northwest end of the Hawaiian Islands archipelago

The Refuge is home to the largest Laysan Albatross nesting colony. More than 450,000 nesting pairs return to Midway annually to breed and raise their young. Studies conducted by the FWS and others at Sand Island between the late 1980s and 2009 showed that Laysan Albatross nestlings (chicks) exhibited symptoms of lead toxicity and that their exposure is likely related to ingestion of LBP chips and soil contaminated with LBP chips. The birds often pick-up and place the chips into their nests. LBP debilitates the chicks so they will not be able to fly and will not survive. Based on these reports, existing information concerning the

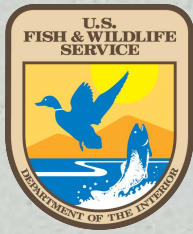


release or threatened release of hazardous substances, pollutants, or contaminants at Midway Atoll was compiled in a Preliminary Assessment/Site Inspection (PA/SI) report in 2010.

From FY 2010 through the current construction season, the CHF has provided approximately \$15 million to examine the extent of contamination, develop removal alternatives and cleanup costs, and complete remediation activities at the 18 buildings and the surrounding soils with the highest potential to affect wildlife.

Nesting Laysan Albatross at Midway





# U.S. Fish and Wildlife Service

## Midway Atoll NWR, *Midway Atoll (cont.)*

The FWS has spent an additional \$1M of its own funding, demolishing, and remediating buildings containing LBP and asbestos.

Biologists on Midway have noticed a significant decrease in albatross chick mortality resulting from LBP in the remediated areas. Previous reports indicated that LBP affected as many as 10,000 chicks annually. In FY 2013 biologists are finding few or no crippled chicks in the areas where the lead remediation work has been completed.

***For more information about the Site and cleanup status, please visit:***

***[www.fws.gov/refuge/Midway\\_Atoll](http://www.fws.gov/refuge/Midway_Atoll)***



Excavation of contaminated soil around the Carpenter Shop



Clean fill around the Carpenter Shop

## Accomplishments

- To date 45 buildings have been abated :
  - 26 abated by FWS ARRA funds
  - 19 abated by CHF funds
- Significant decrease in albatross chick mortality resulting from LBP in remediated areas
  - On the Atoll there are roughly 450,000 nesting pairs
  - Before remediation an estimated 10,000 chicks were affected by LBP annually
- The CHF has provided approximately \$15 million to FWS to support the project
- To date, FWS has spent \$992,000 of its own funding on remedial activities at the site





# U.S. Fish and Wildlife Service

## Sachuest Point NWR, *Middletown, Rhode Island*

The Sachuest Point National Wildlife Refuge (Refuge) consists of 242 acres of former farmland, which was transferred to the FWS in 1972. Two areas of the transferred land were used as a municipal landfill for the town of Middletown, Rhode Island, from 1958 to 1973. FWS completed remediation of these areas in 2004, by removing waste from one area of concern and consolidating and capping it in the other area of concern. This action addressed potential risk to human health and the environment presented by inorganic compounds (lead, antimony, arsenic, manganese) and organic compounds (benzene and chrysene).



The Sachuest Point Site is located in Middletown, Rhode Island

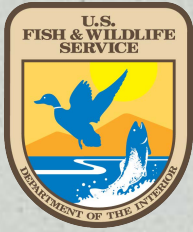
When site remediation was decided upon, FWS partnered with several public and private groups, including the state of Rhode Island and the town of Middletown, to implement a cost-effective remedy. Restoration of the site was completed with the assistance of the NOAA Coastal Restoration Center, State of Rhode Island Coastal Resource Management Council, and the Natural Resource Conservation Service, University of Rhode Island, Norman Bird Sanctuary, Rhode Island Department of Environmental Management, and Saint George's School. Remediation of the 21 acre municipal landfill within the refuge boundary was completed in 2004.



Road that was replaced after Hurricane Sandy. Landfill is on the right side of the photo adjacent to the road

In addition, FWS restored 17 acres of the site to salt marsh habitat to provide additional water control as part of the selected remedy. This action created 15 acres of habitat, increased inter-tidal foraging areas for migratory birds, controlled invasive phragmites, promoted the establishment of native species, and increased biodiversity. The final steps in transforming the remediated Middletown landfill into coastal grassland were completed in May 2006.





# U.S. Fish and Wildlife Service

## Sachuest Point NWR, Middletown, Rhode Island (cont.)

The Department's CHF provided FWS approximately \$5.4 million between 1999 and 2014. The CHF has been able to recover \$1.45 million of the funding spent on the project, and the responsible parties have performed approximately \$250,000 worth of services.

The remediation included creation of wetlands, recycling of tons of materials including tires, stumps, and metals, and use of beneficial dredge spoils. As a result of this innovative approach, the Sachuest Point Landfill Remediation team was awarded a U.S. Department of Interior Environmental Achievement Award in 2005.

***For more information about the Site and cleanup status, please visit:***

***[www.fws.gov/refuge/sachuest\\_point](http://www.fws.gov/refuge/sachuest_point)***



Landfill prior to remediation



Landfill after remediation

## Accomplishments

- 15 acre habitat created
- 17 acres of new salt marsh including a new inlet
- A total of 55 water bird species and several birds of prey have been documented on the marsh since fall of 2004
- Hurricane Sandy impacted the area in 2012, and while the Sachuest Point Road was severely damaged and closed for over 5 months, the landfill cap came through the storm largely unscathed





# National Park Service

The National Park Service (NPS) was established in 1916 to preserve the national parks of the United States. NPS safeguards more than 400 places which share their stories with more than 275 million visitors every year. With 28,000 employees and 2,482,104 volunteers, NPS manages over

***Mission: “to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations.”***

84,000,000 acres of land, 4,502,644 acres of oceans, lakes, reservoirs, 85,049 miles of perennial rivers and streams, 43,162 miles of shoreline, 68,561 archeological sites, 27,000 historic structures, 2,461 national historic landmarks, and 49 national heritage areas. NPS also assists tribes, local governments, nonprofit organizations, businesses, and individual citizens to help in revitalizing their

communities, preserving local history, celebrating local heritage, and creating close-to-home opportunities for kids and families to get outside, be active, and have fun.

To date, the CHF has provided NPS \$78 million to support the remediation of 26 contaminated sites. Through the work of the Office of Solicitor and NPS, \$50.3 million has been recovered from the responsible parties. Also, the responsible parties have performed work at NPS’ sites, resulting in approximately \$140 million in cost savings.

Some of the sites funded by the CHF include the Washington Gas Site, Curry Landfill, Krejci Dump Site, Palmerton Zinc Pile Site, and Valley Forge Asbestos Release Site.

An example of one such project is the Washington Gas Site (Site) in Washington D.C. (DC) on the banks of the Anacostia River. The Washington Gas Light Company (“WGL”) manufactured gas at its privately-owned facility, continuously from 1888 to 1948, and intermittently until the mid-1980s, after which time the plant was demolished. Operation of the facility resulted in contamination of the facility itself, as well as soil and groundwater in the vicinity of the facility, including the adjacent 4.2-acre portion of Anacostia Park, part of, National Capital Parks-East, a unit of NPS.



Looking across the Anacostia River to the Washington Gas Site





## National Park Service

While the EPA is the lead agency for the cleanup efforts on the privately-owned WGL property, NPS is the lead agency for the cleanup efforts on the government property, and will remain in that role through the completion of remedial action although the land has been transferred to DC.

Investigations conducted confirmed the presence of heavy metals, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds, and coal tar in soils and groundwater.

WGL is the responsible party liable for the cost of Site investigation and cleanup. WGL has participated cooperatively with NPS, including a 2005 administrative settlement in which WGL paid NPS \$285,000 in reimbursement for NPS's past response costs incurred as of that date. In 2012, a Consent Decree was entered in Federal Court among NPS, EPA, DC, and WGL wherein WGL agreed to pay NPS for all past and future response costs. WGL will clean up contaminated soil adjacent to the Anacostia River and investigate and evaluate cleanup alternatives to address contaminated groundwater and sediments in the Anacostia River. Several community groups have shown a great deal of interest in the Site cleanup. NPS issues annual "status reports" and holds annual meetings to advise the community on the status of the cleanup and investigation of the site.

Since 1999, the CHF has provided NPS approximately \$1.9 million for the Site. To date, NPS has recovered \$1.38 million from the responsible party, plus 100% of future response costs. WGL has performed approximately \$5 million worth of work at the Site, reducing the amount of funding needed to be spent by NPS at the Site. More information on the Site can be found at: <http://www.nps.gov/nace/parkmgmt/washingtongas.htm>

Another example of the work NPS is performing using CHF funding is at the 1.5 acre Curry Landfill Site (Site) located in Yosemite National Park. From the 1920s to the 1980s, the Site was used to dispose household and municipal waste (including incinerator ash), as well as a temporary storage location to transfer solid waste. Land farming, a technique performed to treat petroleum contaminated soil, also took place at the site. Most recently it was used as a parking lot for back-county hikers. The Site is located near a popular campground, seasonal employee housing, and the Curry Village. It is approximately 1,500 feet northeast of the Merced River, a designated Wild and Scenic River.

Subsurface soil sampling indicated the presence of total petroleum hydrocarbons, PAHs, pesticides, PCBs, and metals at concentrations exceeding screening criteria. NPS and California Department of Toxic Substances Control are working together to investigate this Site and 10 other sites within Yosemite National Park. The CHF has provided NPS a total of \$1.4 million for the Site since 2010.

**For more information about NPS, please visit: [www.nps.gov](http://www.nps.gov)**





# National Park Service

## Krejci Dump Site, *Brecksville, OH*

The 48-acre Krejci Dump Site (Site) was a privately owned and operated industrial and municipal dump and salvage yard that operated from approximately 1950 to 1980. During the active years of operation, a large volume of industrial waste materials were disposed at the dump, including metal castings and drums; paint; solvents; tars; oils, fuels, and degreasers; slag; fly ash; nickel oxide; and pressurized gas cylinders. Hazardous substances identified at the Site included PCBs, dioxin/furan, PAHs, pesticides, benzene, and numerous metals including cadmium, copper and lead.



Krejci Dump Site is located in Cuyahoga Valley National Park in Northeast Ohio

In 1980, the Site was acquired by NPS as an addition to the Cuyahoga Valley National Park (Park), though the property was not transferred to the NPS until 1985. Shortly after NPS took over control of the Site, NPS and the EPA investigated the Site and determined that the risks posed by Site contamination were sufficient to necessitate an emergency removal action. Extensive litigation against the Site's responsible parties ensued, resulting in a successful trial, cost damage awards to NPS, and settlements with various parties. Under the 2002 Consent Decree, the responsible party agreed to implement the Site remediation, subject to NPS oversight. By 2012, comprehensive post-excavation soil sampling confirmed that the rigorous soil remediation goals were attained, and re-vegetation began. To achieve these goals, approximately 375,000 tons of contaminated soils and debris were excavated and disposed at an appropriate off-site facility.



The dump and salvage yard when it was transferred to NPS



After completion of contaminant excavation and initial re-vegetation of the Site





# National Park Service

## Krejci Dump Site, Cuyahoga Valley National Park, OH (cont.)

The Department's CHF has provided NPS approximately \$14.9 million dollars from FY 1994 through FY 2013 to manage the Site and assist Department of Justice in preparation for enforcement activities.

The litigation was successful and, combined with subsequent negotiations, resulted in the recovery of approximately \$24 million from all of the responsible parties. The cost recoveries both restored the CHF and provided NPS oversight money for the Site's cleanup. The responsible parties also agreed to perform work at the Site including implementing the remedial action, subsequent monitoring, and re-vegetation efforts, totaling an estimated \$48 million. Not included in the above total, the responsible parties also agreed to pay over \$2 million in natural resource damages.

The remediation of the Krejci Dump Site has benefitted the Park and the public. This has become a model remediation in NPS, by taking a contaminated former industrial site, restoring the ecology to its native condition (including three acres of wetland and wet meadow habitats) for unrestricted use by Park visitors, animals, and plants alike, and transforming the additional open space that can be used for recreation near a very urban environment.

The responsible parties continue to control erosion and invasive plants until the re-vegetation performance standards are met, and NPS continues to monitor surface and ground water.

***For more information about the Site and cleanup status, please visit: [www.nps.gov/cuva/parknews/krejci](http://www.nps.gov/cuva/parknews/krejci)***



Three acres of wetland and wet meadow habitats have been created

### Accomplishments

- **Excavation and removal of approximately 375,000 tons of contaminated soils and debris**
- **Achievement of rigorous soil remediation goals**
- **The CHF has provided approximately \$14.9 million to support the Site**
- **Total recovery of approximately \$24 million from responsible parties, and cost avoidance of approximately \$48 million**





# National Park Service

## Palmerton Zinc Pile Site, *Palmerton, PA*

The Palmerton Zinc Pile Superfund Site (Site) is located in and around the town of Palmerton, Pennsylvania. The site consists of more than 4,000 acres of land that has been impacted by the phytotoxic effects of airborne emissions from two primary zinc smelting facilities operating from 1898-1980.



During the years of operation, smelting operations deposited around 33 million tons of slag at the Site, creating a cinder bank that extends 2 ½ miles and measures over 100 feet high and 500 to 1,000 feet wide. The smelting operations also emitted heavy metals throughout the valley. As a result, approximately 2,000 acres on the adjacent Blue Mountain, was defoliated, leaving a barren mountain side. Surface water, ground water, and soil were contaminated and airborne dust remains a concern. Contaminants identified included zinc, cadmium, copper, sulfur dioxide, and lead. Shallow ground and surface water are affected by elevated levels of heavy metals on Blue Mountain. Aquashicola Creek flows through the impacted area and has been contaminated from leachate and surface runoff.

The Palmerton Zinc Pile Superfund Site is located in and around the town of Palmerton, Pennsylvania

NPS manages approximately 800 of the 2,000 acres impacted on Blue Mountain, as a part of the Appalachian National Scenic Trail (AT). In the impacted area, the AT runs across the crest of Blue Mountain and crosses the Lehigh River at the Lehigh Gap. Heavy metal contamination may pose unacceptable risk in springs used by hikers along the AT.

The EPA placed the Site on the National Priorities List in 1983. The EPA is the lead regulatory agency for the larger Site. NPS has review and approval authority for work performed on NPS-managed lands.

The Site is divided into four OUs. NPS-managed land is part of OU 1 and OU 4. OU 1, Blue Mountain, focuses on re-vegetating defoliated acres from historical operations. OU 4, is in the Remedial Investigation Phase, and is comprised of surface water, groundwater, and site-wide ecological risk.

NPS implemented a Time-Critical Removal Action (TCRA) to address imminent and substantial risks to public health, welfare, and the environment presented by site conditions in a 71 acre area in OU1.



AT along Palmerton showing impacts from smelter deposition





# National Park Service

## Palmerton Zinc Pile Site, *Palmerton, PA* (cont.)

This action focused on the stabilization of the areas of the Lehigh Gap identified as posing the greatest risk of rock-fall to the State Highway below.

The measures were to reduce the on-going release of hazardous substances from the unstable area and improve the long-term effectiveness and permanence of the OU1 remedy. The TCRA was funded through the American Recovery and Reinvestment Act.

At OU 1, aerial application of native seed, fertilizer, and lime was completed in 2012. Resource island construction and planting was completed in 2014. Monitoring of the success of the re-vegetation effort and management of invasive species will continue through a ten-year period. Early indications suggest that the re-vegetation effort is successful in reestablishing a native Eastern hardwood forest on the former moonscape of Blue Mountain.

To facilitate remedial action, it was necessary to temporarily re-route approximately 5 miles of the AT from Little Gap to Lehigh Gap. The Design and permanent realignment of this section will be reimbursed by the PRP as part of the remedial action. Trail design is underway and installation may begin as early as 2015. Remediation efforts on the Site have facilitated the enhancement of natural habitat. Reopening of the re-vegetated and realigned segment of the AT will transform this back into an Eastern hardwood forest, providing for the enjoyment of this land and the experience it brings for future generations.

The CHF provided NPS approximately \$2,175,776 for the project beginning in FY 2002. The Department has recovered \$729,000, and has received approximately \$22.4 million worth of work performed by the responsible parties. Also, NPS received approximately \$7 million in funding from ARRA to support the project and is pursuing cost recovery from the PRPs.

***For more information about the Site and cleanup status, please visit:***

***<http://www.nps.gov/appa/parkmgmt/upload/May-2010-LehighGapProject-FactSheet.pdf>***

### Accomplishments

- **Remediation efforts at the Site have enhanced natural habitat and NPS' long-term stewardship of the trail**
- **The CHF has provided approximately \$2.2 million to the project**
- **Approximately \$730,000 has been recovered, and approximately \$22.4 million has been cost avoided**



18 months after aerial application

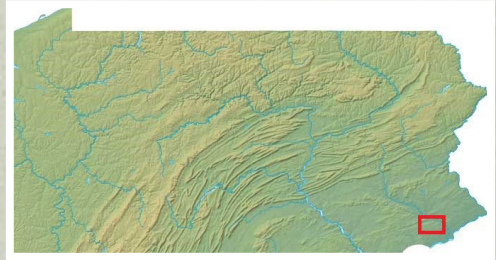




# National Park Service

## Valley Forge Site, *King of Prussia, PA*

The Valley Forge National Historical Park (VFNHP) is located approximately 21 miles northwest of Philadelphia, Pennsylvania in Chester and Montgomery Counties and has been managed by the NPS since 1976. VFNHP was the site of the 1777-78 winter encampment of the Continental Army, and the purpose of the park is to commemorate the sacrifices and perseverance of the Revolutionary War Generation. Prior to becoming a National Park, it was a State Park in the Commonwealth of Pennsylvania (Commonwealth). VFNHP is approximately 3,466 acres, one of the largest open spaces in southeast Pennsylvania. The Asbestos Release Site (ARS) is approximately 112 acres. It is currently closed to the public, and will be re-opened for recreation and historic preservation use once the site has been remediated.



VFNHP is located approximately 21 miles northwest of Philadelphia, Pennsylvania

In January 1997, VFNHP encountered asbestos contamination in soil while constructing a fiber optic cable through the Amphitheater Quarry. From the early 1890s to the 1970s, an asbestos manufacturer disposed of waste in the State Park. The Commonwealth permitted the company to dispose of manufacturing waste by pumping it through a pipeline into the former limestone quarries in the State Park. This process caused soil and air on the site to become contaminated with asbestos semi-volatile organic compounds: specifically, PAHs and three metals (lead, mercury, and arsenic).

In 1997, at the request by NPS, the EPA conducted an emergency response to address the immediate risks to public health, welfare, and the environment posed by the airborne asbestos. The action closed and fenced the contaminated area conducted air monitoring and soil sampling, maintained the asbestos in a wet condition to avoid friability, excavated and removed asbestos contaminated soil for off-site disposal, and covered exposed asbestos in-place with soil, grass seed, and a cement-like soil binding agent. Following EPA's response, NPS undertook interim response measures such as maintaining the fencing, putting up signage, conducting additional soil sampling and air monitoring, and covering and seeding exposed asbestos.



The Keen Quarry, before ownership was transferred to NPS





# National Park Service

## Valley Forge Site, *King of Prussia, PA (cont.)*

NPS and the Commonwealth entered into an agreement in 1999 by which the Commonwealth, under NPS direction and oversight, conducted a CERCLA Remedial Investigation and Feasibility Study for the ARS. The remedial action selected for the site is shallow excavation and off-site disposal of contaminated soils that exceed Remediation Goals. NPS issued a Record of Decision in 2007. In 2010, a cost-sharing agreement was reached with Pennsylvania and funds were dedicated for the remediation of the site to be undertaken by NPS.

NPS initiated the remedial action in 2013. It is anticipated that the excavation of contaminated soil for off-site disposal will be completed in 2015, and re-vegetation of the area will continue for an additional one to 2 years. Once the re-vegetation performance standards are met, the site will be re-opened for public use and the enjoyment of future generations consistent with the purposes for which the park was established.

The CHF has provided the project \$14.9 million dollars, of which, \$12.5 million has been recovered as a result of the settlement agreement. The responsible parties have also performed work at the site, resulting in an additional approximately \$1.3 million in cost savings.

***For more information about the site and cleanup status, please visit:***  
<http://www.nps.gov/vafo/parkmgmt/asbestos.htm>



After completion of part of the remedial action

### Accomplishments

- **The remedial investigation has been initiated and it is anticipated that the excavation and off-site disposal will be completed in 2015**
- **The CHF provided approximately \$14.9 million to the project**
- **Approximately \$12.5 million has been recovered as a result of the settlement agreement and approximately \$1.3 has been cost avoided**





## U.S. Geological Survey

The U.S. Geological Survey (USGS) was established in 1879. It is the Nation's largest water, earth, and biological science and civilian mapping agency, and is the sole science agency for the Department of the Interior. The primary role of the bureau is to collect, monitor, analyze, and support the scientific understanding about natural resource conditions, issues, and problems.

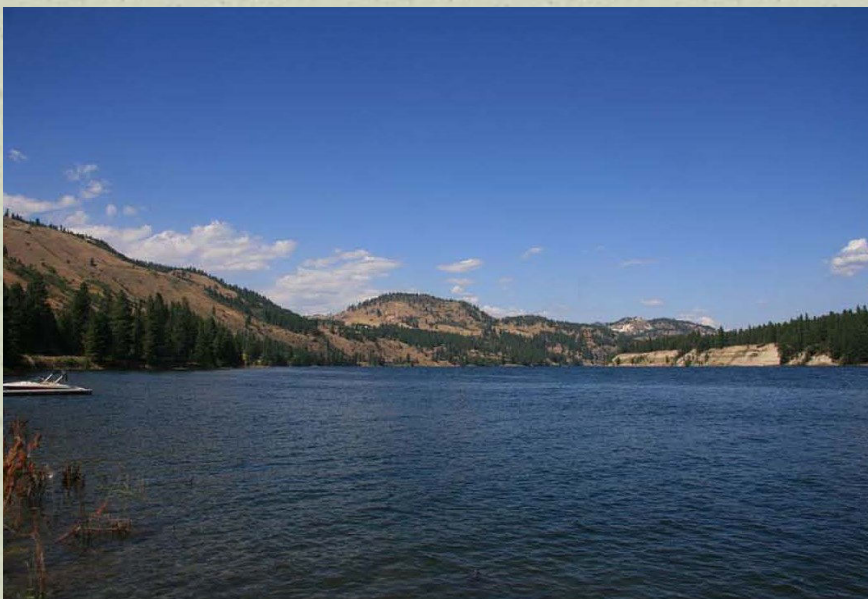
***Mission: “serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life”***

The USGS is made up of seven regions and has over fifty science centers. USGS provides support to other federal agencies, international agencies, academia, and other organizations.

USGS does not manage much land, and therefore does not have many projects funded by the CHF. USGS does provide technical support for many of the other land managing bureaus' projects. Bureaus will

provide USGS with funding to conduct scientific research and studies for their projects.

The CHF has provided USGS approximately \$1.7 million in funding to support the Lake Roosevelt and Government Hill projects. Approximately \$600,000 of this funding has been recovered at the Lake Roosevelt project.



Lake Roosevelt National Recreation Area

The Lake Roosevelt National Recreation Area project is led for the Department by NPS. The project is supported by the BIA, BLM, BOR, and USGS. EPA is also involved at the site. In the early 1980s, water quality concerns were identified - primarily that there were elevated levels of arsenic, cadmium, lead, and zinc in fish.

Follow up studies identified the source located upstream in Canada conducting lead-zinc smelting operation.





## U.S. Geological Survey

As part of the CHF funded project, USGS has conducted sediment and water quality analysis and assessed the impacts the contaminants on fish, primarily sturgeon.

The bureau also supports a number of other CHF funded projects including the Idaho Phosphates Project. This project, located in the southwest corner of Idaho, consists of mitigation of environmental impact from phosphate mining operations. In 1996, selenium toxicosis was identified in six horses grazing on private land downstream of the South Maybe Canyon Mine, one of several mines making up this project. Subsequent studies conducted in 1997, 1998, 2001, 2003, 2010 and 2012 identified elevated selenium levels in sheep and horses. USGS supports the EPA, BLM, FWS, and the U.S. Department of Agriculture's U.S. Forest Service (FS) on this project.

USGS' main focus for the Idaho Phosphates project is to operate the Blackfoot River Gauging Station. The Gauging Station monitors the total amount of selenium in the Blackfoot River which establishes the health of the watershed and verifies the status of the cleanup efforts. BLM, FWS, EPA, FS, Idaho Department of Environmental Quality, and the responsible parties utilize the data provided by USGS. USGS has been and continues to be a very valuable resource for CHF funded projects.

**For more information about USGS, please visit: [www.usgs.gov](http://www.usgs.gov)**



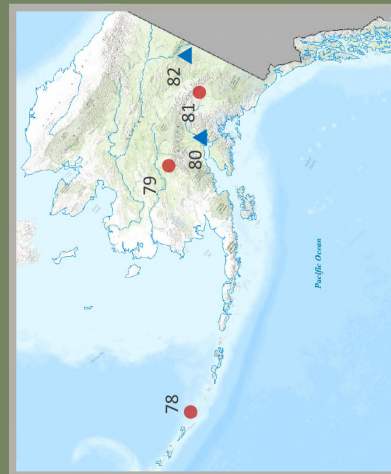
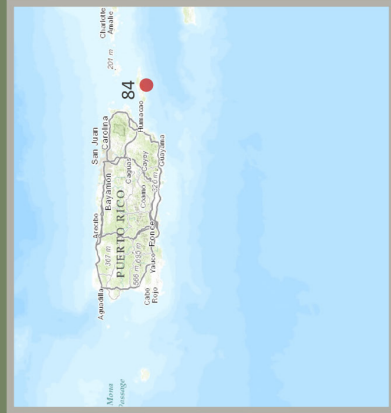
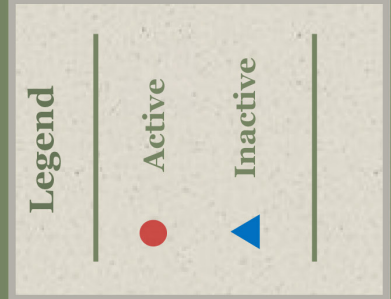
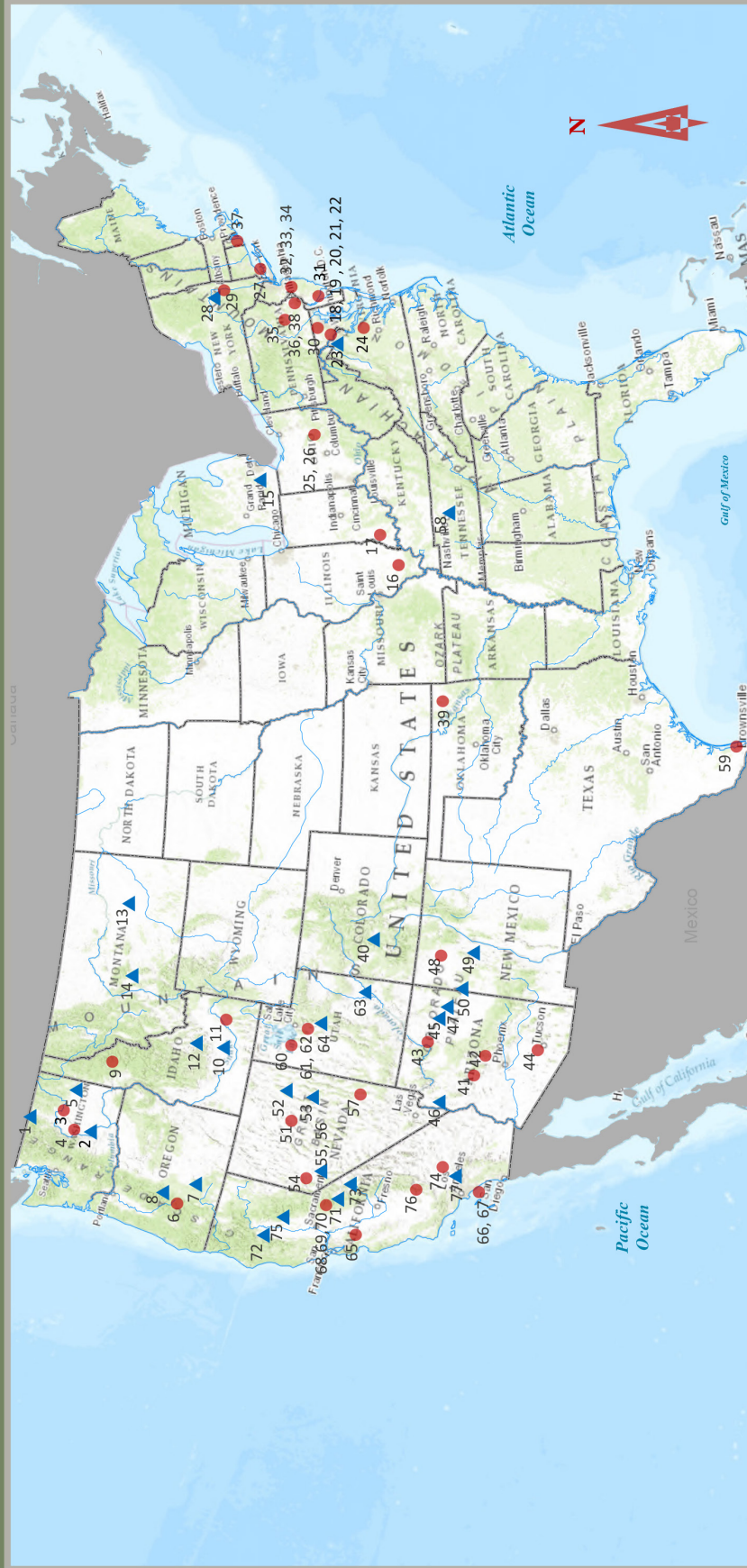
Lake Roosevelt National Recreation Area

### Accomplishments

- **USGS has provided their technical expertise to the Department's land managing bureaus and other federal agencies**
- **The CHF has provided approximately 1.7 million to USGS and 3.8 million to the rest of the bureaus to support the Lake Roosevelt project**
- **The project has recovered over \$7.4 million and received in-kind support saving additional money to the Department**



# Central Hazardous Materials Fund Projects



An interactive map can be found at: <http://www.doi.gov/pmb/oepc/eclm/CHF-Map.cfm>



1. Oroville Landfill—BLM
  2. Wapato Irrigation—BIA
  3. Lake Roosevelt—BIA, BOR, NPS, and USGS
  4. Leavenworth Fish Hatchery—FWS
  5. Midnight Mine—BLM
  6. Formosa Mine—BLM
  7. Klamath Marsh—FWS
  8. Poorman Balm Creek Mill Site—BLM
  9. Cour d'Alene—BLM
  10. Murtaugh Landfill—BLM
  11. Idaho Phosphates—BIA, BLM, and FWS
  12. Triumph Mine—BLM
  13. Mosby Jet Fuel Refinery—BLM
  14. Grant-Kohrs Ranch National Historic Site—NPS
  15. Grassy Island—FWS
  16. Crab Orchard NPL Site—FWS
  17. George Rogers Clark Former Manufactured Gas Site—NPS
  18. Poplar Point—NPS
  19. Washington Gas and Light—NPS
  20. Oxon Cove—NPS
  21. Anacostia Sediment Site—NPS
  22. Kenilworth Landfill—NPS
  23. Barney Circle Landfill—NPS
  24. Fort Darling Landfill—NPS
  25. Krejci Dump Site—NPS
  26. Jaite Paper Mill—NPS
  27. Great Kills Landfill—NPS
  28. Cortese Landfill—NPS
  29. Hudson River PCBs—NPS
  30. Patuxent Research NWR—FWS
  31. Prime Hook NWR—FWS
  32. Great Swamp NWR Asbestos OU3—FWS
  33. Great Swamp NWR Rolling Knolls—FWS
  34. Great Swamp NWR Harding Landfill—FWS
  35. Palmerton Zinc Pile—NPS
  36. John Heinz NWR—FWS
  37. Sachuest Point—FWS
  38. Valley Forge Asbestos Release Site—NPS
  39. Tar Creek NPL Site—BIA
  40. Ute-Ulay—BLM
  41. Hillside—BLM
  42. Wickenburg—BLM
  43. Orphan Mine—NPS
  44. Saginaw Hill—BLM
  45. Tuba City—BIA
  46. Tyro Mill—BLM
  47. Hopi Dip Vats—BIA
  48. Lee Acres—BLM
  49. Grants Uranium Belt—BLM
  50. Navajo Dip Vats—BIA
  51. Tybo Tailings—BLM
  52. Rip Van Winkle—BLM
  53. Norse Windfall—BLM
  54. Yerington—BLM
  55. Veta Grande—BLM
  56. Monite Dynamite Site—BLM
  57. Caselton Tailings—BLM
  58. Redoubt Brannan—NPS
  59. Palo Alto Battlefield—NPS
  60. U.S. Magnesium—BLM
  61. Silver Maple Claims—BLM
  62. Manning Canyon—BLM
  63. La Sal Creek—BLM
  64. Jacobs Smelter—BLM
  65. Klau Buena Vista—BLM
  66. Sweetwater Marsh—FWS
  67. Gunpowder Point—FWS
  68. El Capitan Dump—NPS
  69. Curry Landfill—NPS
  70. Cascade Creosote Dip Tank—NPS
  71. El Portal Mine and Mill Site—NPS
  72. Matheson Ore Transfer Station—BOR
  73. Black Rock Mine—BLM
  74. Morning Star Mine—NPS
  75. California Historic Mercury Sites—BLM
  76. Rand Historic Mining District Complex—BLM
  77. Atlas Asbestos Site—BLM
  78. Alaska Maritime—FWS
  79. Red Devil Mine—BLM
  80. Government Hill—USGS
  81. Nabesna—NPS
  82. Fort Egbert Dump—BLM
  83. Midway Atoll—FWS
  84. Vieques and Culebra NWR—FWS
- Note, there are sites on this map that have not received CHF funding, but have had the site's cost recoveries submitted to the CHF's account.*
- For more details on the funding provided to a specific site, or associated cost recoveries, please visit: <http://www.doi.gov/pmb/oepc/eclm/CHF-Map.cfm>*
- Last updated, December 2014*
- U.S. Department of the Interior**  
<http://www.doi.gov>
- Central Hazardous Materials Fund**  
<http://www.doi.gov/pmb/oepc/eclm/index.cfm>