

# RETURN TO USE INITIATIVE

## 2010 Demonstration Project

### ROCKY MOUNTAIN ARSENAL

#### Commerce City, Colorado

**THE SITE:** The Rocky Mountain Arsenal Superfund site (the Site) is located 10 miles northeast of Denver, in a residential area next to Commerce City. The U.S. Army established the Arsenal in 1942 to manufacture chemical weapons. After World War II, the Army leased parts of the Arsenal to private industry. The Army and chemical manufacturers disposed of liquid wastes in basins and trenches, which leaked and contaminated ground water. Since 1982, the Army, Shell Oil, the State of Colorado and EPA have been involved in enforcement and legal actions to ensure cleanup. EPA added the 17,000-acre Site to the Superfund program's National Priorities List (NPL) in 1987. Five years later, Congress passed a Refuge Act designating the transfer of cleaned-up site lands for use as a wildlife refuge. Construction of the Site's remedy finished in 2011.

**THE OPPORTUNITY:** The Site is located in a rapidly growing area and EPA deleted four cleaned-up portions of the Site from the NPL. Local stakeholders were interested in locating mixed uses on parts of these areas, and the U.S. Fish and Wildlife Service (USFWS) established the Rocky Mountain Arsenal (RMA) National Wildlife Refuge on site.

**THE BARRIER:** Interested parties were unsure if potential future uses of the Site and nearby lands were compatible with the Site's remedy and the expansion of the RMA wildlife refuge. The Site's remedy requires land use restrictions or institutional controls to minimize the potential for exposure to contamination and/or protect the integrity of a cleanup. With the growth of the RMA refuge, some institutional controls are difficult to maintain.

For example, the USFWS reintroduced the American Bison to the RMA refuge in 2007. The bison have thrived in the short-grass prairie habitat reestablished after the soil remedy was put in place. The RMA bison are a pure genetic strain and the USFWS would like to exchange them with other national wildlife refuges across the United States to maintain genetic diversity. Eventual consumption of the transferred bison is possible; however, an institutional control at the Site prohibits the consumption of fish and



**PICTURED:** Former chemical weapons manufacturing facility. (Source: USFWS)

**BARRIER:** Complex institutional controls and history of contamination affected commercial and residential development opportunities as well as wildlife refuge plans.

**SOLUTION:** An RfR Determination stating that part of the Site is ready for residential use and will remain protective of human health and the environment as long as remedy conditions are maintained. Further institutional control clarification efforts for the RMA refuge are ongoing.



**PICTURED:** Fishing at the Rocky Mountain Arsenal National Wildlife Refuge. (Source: USFWS)

**BEFORE:** Cleaned-up and underused property.

**AFTER:** Mixed-use redevelopment and the largest urban wildlife refuge in the United States.

game. This restriction complicates the USFWS's goal to reestablish genetically pure American Bison and makes it difficult to manage the herd size and prevent overgrazing of the RMA refuge land.

**THE SOLUTION:** EPA took several actions to clarify site use restrictions to allow for future development and support the expansion of the RMA refuge. In September 2009, EPA issued a Ready for Reuse (RfR) Determination ([http://www2.epa.gov/sites/production/files/documents/rma\\_final\\_rfr\\_shellproperty.pdf](http://www2.epa.gov/sites/production/files/documents/rma_final_rfr_shellproperty.pdf)) for 294 acres along the northern edge of the Site. The RfR determination documented EPA's technical determination that the surface of the property is ready for, but not limited to, residential use and will remain protective of human health and the environment, subject to operation and maintenance of the remedies. The document also reiterates use limitations specified in site decision documents, including institutional controls preventing the use of ground water, and continued EPA access to the Site's network of ground water monitoring wells.

In addition, a multi-agency working group has formed to conduct a risk evaluation for the RMA bison. This workgroup includes risk managers, toxicologists, risk assessors, scientists and engineers. The team will evaluate health risks associated with the possible consumption of bison tissue and the findings may serve as the technical foundation to change the institutional control prohibiting consumption of RMA refuge bison.

**THE SITE NOW:** In 2003, EPA deleted the Western Tier Parcel and Commerce City purchased the property. Commercial and municipal development on that parcel includes the Colorado Rapids soccer stadium, an Adams County high school and county offices. Proceeds from the Western Tier Parcel purchase went to the USFWS to fund a new visitor center for the RMA refuge. In 2004, two partial deletions provided land for road expansions in Commerce City and Denver, and about 5,000 acres were deeded to the USFWS for the RMA refuge. In 2006, EPA deleted another 7,000 acres from the NPL to prepare them for the RMA refuge.

EPA completed the fifth partial deletion at the Site in September 2010. The Rocky Mountain Arsenal was originally 27 square miles, which is roughly the size of Manhattan Island. To date, about 15,000 acres have been successfully cleaned up and turned into the largest urban wildlife refuge in the country. It is a national cleanup success, winning the 2007 Revitalization Award from EPA. The RMA refuge supports environmental education programs and various forms of wildlife-dependent outdoor recreation. The refuge provides catch-and-release recreational fee fishing, nearly 10 miles of trails, a nine-mile wildlife drive auto tour, and site tours for the public. Currently, nearly 300,000 visitors enjoy the RMA refuge each year.

Components of the Superfund remedy continue to operate – five ground water treatment plants are running and the U.S. Army monitors and maintains just over 1,000 acres of soil covers and two closed hazardous waste landfills. The Site is an example of how a large and complex cleanup can occur concurrently with reuse efforts.



PICTURED ABOVE: Exhibits at the RMA refuge visitor center. (Source: EPA).

PICTURED BELOW: The RMA refuge visitor center entrance. (Source EPA)



**FOR MORE INFORMATION, PLEASE CONTACT:** Greg Hargreaves, Remedial Project Manager, at (303) 312-6661 or [hargreaves.greg@epa.gov](mailto:hargreaves.greg@epa.gov); or Frances Costanzi, Region 8 Superfund Redevelopment Coordinator, at (303) 312-6571 or [costanzi.frances@epa.gov](mailto:costanzi.frances@epa.gov).