

Situation Assessment

Twin Cities Air Force Reserve Base Small Arms Range Landfill



Twin Cities Air Force Reserve Base
Small Arms Range Landfill Superfund Site
Minneapolis, Minnesota
June 1, 2010
FINAL

U.S. EPA Region 5

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Forward

EPA's primary responsibility at Superfund sites is to ensure the protection of human health and the environment. Consideration of a site's potential future use is an important part of this responsibility under the National Contingency Plan (NCP). The Superfund Redevelopment Initiative (SRI) was created by EPA in 1999 to help communities and stakeholders in their efforts to return environmentally impaired sites to protective and productive use. Conducting a reuse assessment that engages site owners and other stakeholders in evaluating future use options for a site can help facilitate site stewardship and support the long-term effectiveness of the remedy.

Executive Summary

The Small Arms Range Landfill (SARL) is within the boundaries of the U.S. Air Force property at the Minneapolis-St. Paul International Airport Air Reserve Station. Fort Snelling State Park borders the site to the north and the Minnesota Valley National Wildlife Refuge borders to the south. The Minnesota Department of Natural Resources would like to establish a public access trail to connect trail networks to the north and south. However, the Air Force, together with the Metropolitan Airports Commission and the Minnesota Department of Transportation who have access easements for use of the site, has public safety and security concerns. If security and public safety concerns can be addressed, and site stakeholders determine a revised trail alignment that involves removing the site fence is preferable, EPA is willing to work with the interested parties to accommodate their interests while still ensuring the protectiveness of the SARL site.



Introduction

At the request of EPA Region 5, E² Inc. conducted a site visit of the Twin Cities Air Force Reserve Base Small Arms Range Landfill site in Minneapolis, Minnesota on March 23, 2010 to determine the site reuse potential and assess the need for reuse planning services. E² Inc. met with representatives from EPA Region 5, the Twin Cities Air Force Reserve, the Minnesota Department of Natural Resources and the Metropolitan Airports Commission, reviewed local planning documents, and participated in a tour of the site. The purpose of the meeting and site visit was to discuss reuse goals for the property, to identify relevant planning initiatives for the area, and to outline preliminary considerations, opportunities and challenges for the potential site reuse.

Meeting Participants included:

- Doug Yocum, Environmental Manager, 934th Airlift Wing, U.S. Air Force Reserve
- Leslie Canarr, Base Civil Engineer, 934th Airlift Wing, U.S. Air Force Reserve
- Paula Fields, Real Property Specialist, 934th Airlift Wing, U.S. Air Force Reserve
- Bob Piotrowski, Park Manager, Fort Snelling State Park, Minnesota Department of Natural Resources
- Toni Howell, Manager, Environmental Affairs, Metropolitan Airports Commission
- Tom Bloom, Superfund Reuse Coordinator, EPA Region 5
- Romona Smith, Reuse Project Coordinator, EPA Region 5
- Casey Williams, E² Inc.

Summary of Site Conditions

The Small Arms Range Landfill (SARL) is within the boundaries of the U.S. Air Force property at the Minneapolis-St. Paul International Airport Air Reserve Station. It occupies approximately 2 acres of land on a piece of property the Air Force refers to as the Snelling Small Arms Range Annex (see map on page 3). The site is bounded to the north and west by the airport, to the south by Interstate 494, and to the east by the Minnesota River. Fort Snelling State Park extends from the north of the site to the south and southeast, and the northern boundary of the Minnesota Valley National Wildlife Refuge is 500 feet from the landfill. A stormwater detention pond, constructed by the Metropolitan Airports Commission in 1983, lies between the landfill and Minnesota River.



The 2-acre SARL Superfund Site adjacent to the Minnesota River and I-494 Bridge.

History of the Site

The Snelling Small Arms Range Annex was part of an 850-acre piece of property that the U.S. Army acquired in 1905, and was used as a rifle range until the late 1940s. Several property transfers reduced the size of the Annex to 27 acres. The Air Force gained ownership in 1951. Starting in 1962, the SARL was used for burning and burying refuse from the main Air Force Reserve base, including industrial wastes, paints, solvents and leaded aviation gasoline sludge. Upon closure in 1972, native soil was used to cover the fill area.

History of Response Actions

The site was first identified as a possible hazardous site in 1983. Preliminary studies indicated low concentrations of groundwater contaminants possibly migrating from the site. Based on these preliminary studies, the site was placed on the EPA National Priorities List in 1987. The principal public health concerns were potential contact with contaminated landfill materials or ingestion of contaminated ground water.

A Federal Facility Agreement signed in 1989 established the procedural framework for remedial action at the site. The Air Force and EPA signed a Record of Decision (ROD) in 1992 selecting natural attenuation of ground water contaminants in conjunction with access restrictions, site maintenance and monitoring as the preferred remedy. The Air Force and EPA concluded that, due to site characteristics, natural attenuation of contamination would readily occur through adsorption, biodegradation, physical/chemical degradation and dispersion.

The installation of ground water monitoring wells and the construction of a perimeter fence were completed in 1992. Monitoring performed in 1993 – 1995 demonstrated levels of contamination remained low or were diminishing, so EPA removed the site from the NPL in 1996. Since the remedy for the SARL allows wastes to be left in place, five year reviews are conducted to verify that the remedy remains protective of human health and the environment. The last five year review report, prepared by the 934th Airlift Wing of the Air Force Reserve in May 2008, concluded that the site remains protective of human health and the environment based on confirmatory sampling and evaluation of current access restrictions and site maintenance.



The active small arms range training facility located uphill from the SARL site.

Land Use Considerations

Below is a set of considerations about site conditions and existing land use around the site.

- The Small Arms Range Annex is owned by the Air Force. The Air Force currently uses a portion of the property uphill from the SARL as a small arms range training facility. The use of the range is currently restricted to Air Force personnel and the National Guard. Public access is prohibited.
- The Metropolitan Airports Commission (MAC) leases the land between the SARL and Minnesota River for use as a high flow bypass detention pond. The pond is not one of the airport's primary detention ponds but an overflow basin when runoff rates exceed 300 cubic feet per second, which is infrequent. While subject to seasonal flooding of the Minnesota River, the detention pond is otherwise stagnant. The MAC holds an easement from the Air Force permitting airport crew access through the SARL for pond maintenance and vegetation control activities.
- The Minnesota Department of Transportation (MDOT) also holds an access easement that allows use of a gravel road adjacent to the SARL site to get access to the I-494 Bridge for inspection and maintenance purposes.
- The Small Arms Range Annex is within the statutory boundary of Fort Snelling State Park. When the state legislature established the Park in 1961, it designated the area the state was authorized to acquire for the park by gift, purchase or condemnation. In 1979, Minnesota Department of Natural Resources (MDNR) requested and was granted a lease agreement from the Department of Defense to use the Small Arms Range Annex. The lease confers to MDNR "exclusive use and occupancy" of approximately 6 acres for a park maintenance shop and storage area, and "joint use" of approximately 21 acres for "maintenance purposes." From 1993 – 2009, MDNR had a separate lease with the Department of Defense granting MDNR "joint use of roadways and land surfaces for purpose of constructing multiple use recreational trails." The trail lease expired without a trail being constructed and has not been renewed.
- The Minnesota Valley National Wildlife Refuge borders the property to the south just under the I-494 Bridge. The Refuge has multiple units and stretches over 50 miles from along the Minnesota River from Fort Snelling State Park beyond Belle Plain, Minnesota.
- There are no residential properties located within a one mile radius of the SARL. A survey of potable water wells in the area of the site indicates no current use of shallow ground water onsite or down-gradient of the site. The shallow aquifer is an unlikely groundwater resource since higher yield aquifers are available.
- The SARL is within the 100 year flood plain of the Minnesota River and is prone to flooding. The site is completely submerged on average once every ten years.



The fence separates the SARL from the MAC detention pond. The detention pond is subject to regular flooding of the Minnesota River.

Stakeholder considerations

Below is a set of considerations based on initial discussions with several key stakeholders who were available during the site visit.

Air Force Reserve

- The Air Force use of the 2-acre SARL site is currently limited to maintaining institutional controls, maintenance of the landfill cover and vegetation control. The SARL is currently fenced and no trespassing signs are posted.
- The active small arms range is an essential part of the Air Force Reserve Base. The Air Force explored the possibility of constructing a new facility on the main base, which would be a preferable location for several reasons including convenience and security, but construction costs for a new facility were cost prohibitive. Instead, the Air Force upgraded the existing facility with new utilities and a classroom for trainings. The Air Force plans to make the site safer by enclosing the existing range to eliminate the possibility of stray bullets leaving the facility. Construction of the enclosure should be complete within the next five years.
- The Air Force is aware that hikers, joggers and mountain bikers unofficially use the site to travel between Fort Snelling State Park and the Minnesota Valley National Wildlife Refuge. The Air Force may be receptive to reestablishing an easement for a public access trail through the site once the Small Arms Range is enclosed and their public safety concerns are addressed.
- The Air Force just completed a 15 Year General Plan for the Base, which considered adding a picnic area to the SARL site. The Air Force chose not to pursue the idea due to the site's susceptibility to flooding, the current security measures in place, and lack of demand for additional recreational amenities in that area.
- A previous commander had expressed interest in establishing a picnic area or "family camp" on the site, but the idea lost momentum after the regime change, which typically occurs every 2 – 5 years. The Air Force previously established a small picnic area on the northern edge of the property that borders Fort Snelling State Park, but the site was rarely used due to the abundance of nicer recreational opportunities available in the area.



The path typically used by joggers and hikers trying to get from Fort Snelling State Park to the Minnesota National Wildlife Refuge.



The entrance to the Small Arms Range Unit contains warning signs and a locked gate.

- The Air Force has concerns about site security given the site's proximity to the international airport, especially following the events of September 11, 2001. A locked entrance gate prevents vehicular access to the Small Arms Range Annex except to those who have a key. "No Trespassing" signs are also posted along the site perimeter. Illegal dumping, graffiti and shotgun shells provide evidence of trespassing on the property however, and the Air Force intends to install security cameras throughout the site.
- The Air Force Reserve Security Forces would need to approve any plans for recreational access through the site before a public access trail could become an authorized activity.

Minnesota Department of Natural Resources

- MDNR was unable to move forward with trail development plans in the past due to a lack of state funding. While the MDNR is still unsure on when funds needed to develop the trail may be available, the state would like to renew the easement with the Air Force for a public access trail connecting the trail networks to the north (Fort Snelling State Park) and south (Minnesota Valley Wildlife Refuge).
- Different trail alignments were developed in the past, none of which intersected the SARL site. An alignment was never finalized due to the uncertainty of securing funding for trail development.



The dashed orange line indicates trail alignments considered in the past, none of which intersect the SARL site. The line illustrates the two alternative alignments that were previously discussed to avoid the landfill area. It is no longer possible however to cross the spillway on the east side of the detention pond, so unless a bridge is established, this is no longer a feasible trail alignment. (Image credit: Doug Yocum, 934th Airlift Wing, U.S. Air Force Reserve)

- The MDNR proposed a new trail alignment be considered that runs through the SARL site and involves using fill to establish a trail bed on top of the landfill cap. The trail would be designed to support access by maintenance vehicles on the trail surface. Current trail specifications call for six-inches of class 5 compacted gravel and then 2-inches of blacktop construction.
- In the event the state is able to secure trail development resources in the near future, MDNR would like to explore alternative or interim safety measures that could be implemented before the Air Force is able to fully enclose the small arms range. An initial thought was to vertically extend the old concrete wall used as a firing range by the army in the early part of the 20th century. This would separate the small arms range from the trail alignment and create a security fence and visibility screen.
- MDNR believes establishing a more formal trail will discourage problematic and inappropriate behavior in the area by providing more “eyes on the trail”. The MDNR representative suggested that studies show officially sanctioned recreational uses will drive out the illicit activities. The less isolated and more visible a place, the fewer problems tend to exist.

Metropolitan Airports Commission

- MAC personnel are authorized to traverse the SARL site to access the northern end of the stormwater detention pond for maintenance purposes.
- MAC personnel have liability and public safety concerns about one of the proposed trail alignments through the site. The path currently selected by joggers illegally traveling through the site traverses over the rip rap lining the overflow spillway on the east side of the pond. The spillway was not designed for public access and poses safety hazards. Additional measures would need to be taken if this alignment was to become an authorized path, and the MAC would require formal liability protections. The MAC strongly prefers a trail alignment that shifts the path of travel away from the eastern rim of the detention pond.
- If public access is allowed adjacent to the detention pond, the MAC would like to expand the perimeter fence to completely surround the pond for enhanced security. The installation of a taller fence is not in currently in the budget however.
- The Air Force agreed to include MAC and MDOT representatives in future conversations with MDNR that may affect their site access or use. A public access agreement with MDNR would include provisions allowing MAC and MDOT continuing site access and use.



The MAC traverses the SARL site to access the northern end of the stormwater detention pond

Remedy Considerations

- The ROD selected in 1992 currently prohibits public use of the 2-acre SARL as part of the site remedy.
- The remedial site investigation indicated the toxic waste is buried at a depth of 10 -12 feet, and the landfill cap consists of 6 – 12 inches of native soil.
- The Air Force actively maintains the perimeter fence and vegetation to make sure trees do not grow over the cap. The Air Force is interested in eliminating their responsibility for maintaining the perimeter fence, which is currently 20 years old.
- Three monitoring wells are still in place; one background well and two on the downstream side of the detention pond. The monitoring data collected in 2007 from the two downstream wells indicated relatively high levels of nickel in one location and low but detectable levels of arsenic in the other location. While the results suggest there may still be something leaching from the landfill, they do not indicate a significant problem. The background well also detected a high level of nickel, so the parameter may not be attributable to the landfill.

Recommendations and Next Step

The Small Arms Range Annex could provide a link between the existing trail networks of two recreational amenities in the Minneapolis-St. Paul metropolitan area. If security and public safety concerns can be addressed, an easement for a public access trail through the property could be aligned in a way that does not intersect the SARL site. If however, site stakeholders determine a revised trail alignment through the SARL site is preferable, the current institutional controls for the SARL would need to be revised to allow for reuse.

The Air Force has indicated they prefer to eliminate site maintenance of the SARL site in the future. At that time, EPA has indicated they will work with the interested parties to evaluate a trail connection with reduced maintenance for the Air Force, while still ensuring the protectiveness of the site.

Additional studies may be required to ensure the site is protective of human health and the environment without a fence. For example EPA may require the Air Force to drill borings to confirm the depth of buried waste in order to lift or modify the legal restrictions for the site. Trail construction specifications may also be required to determine how to protect the components of the cap. Regardless, EPA is willing to determine what may be required to adapt the legal restrictions for the site while protecting the remedial components of the site.

Stakeholder Contacts

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