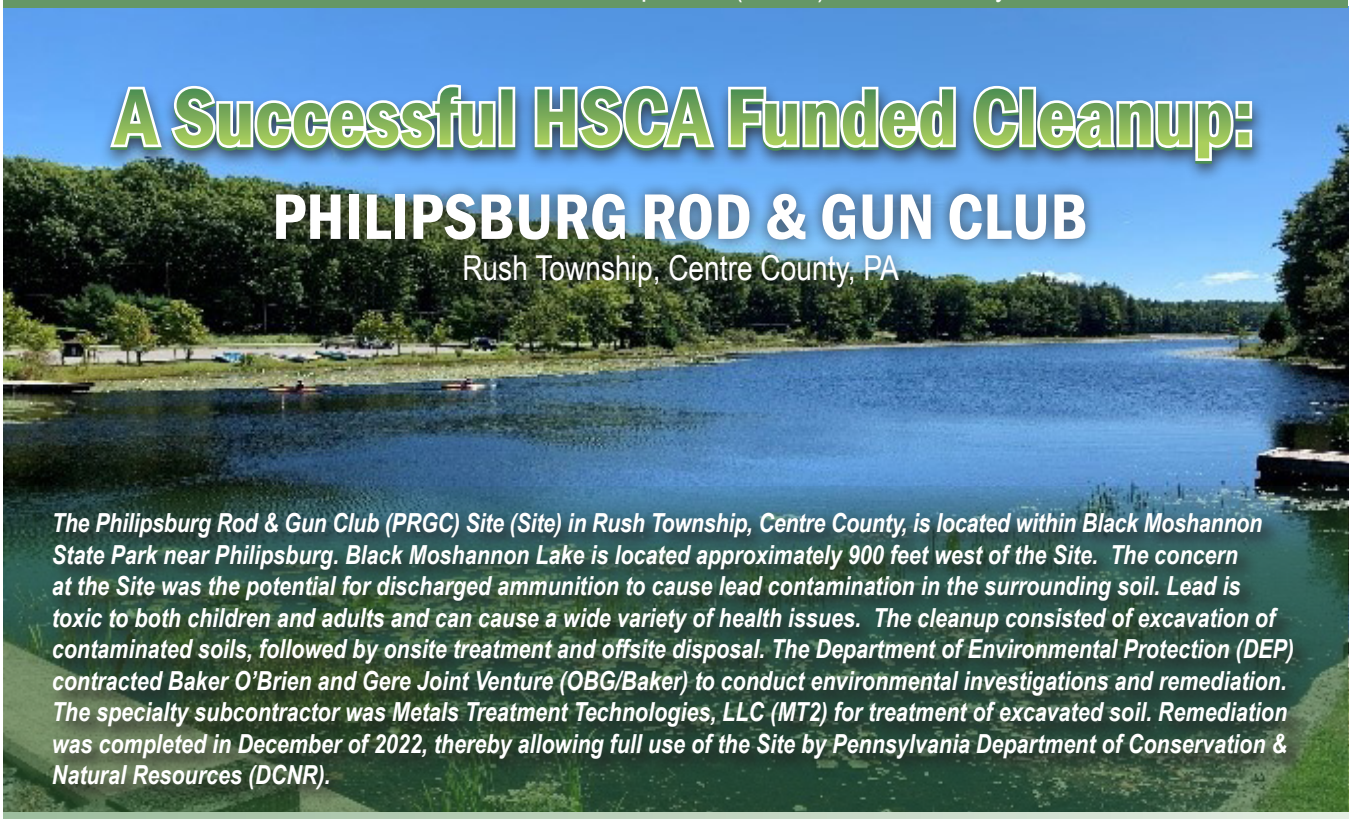
A Successful HSCA Funded Cleanup:

PHILIPSBURG ROD & GUN CLUB

Rush Township, Centre County, PA



The Philipsburg Rod & Gun Club (PRGC) Site (Site) in Rush Township, Centre County, is located within Black Moshannon State Park near Philipsburg. Black Moshannon Lake is located approximately 900 feet west of the Site. The concern at the Site was the potential for discharged ammunition to cause lead contamination in the surrounding soil. Lead is toxic to both children and adults and can cause a wide variety of health issues. The cleanup consisted of excavation of contaminated soils, followed by onsite treatment and offsite disposal. The Department of Environmental Protection (DEP) contracted Baker O'Brien and Gere Joint Venture (OBG/Baker) to conduct environmental investigations and remediation. The specialty subcontractor was Metals Treatment Technologies, LLC (MT2) for treatment of excavated soil. Remediation was completed in December of 2022, thereby allowing full use of the Site by Pennsylvania Department of Conservation & Natural Resources (DCNR).

Philipsburg Rod & Gun Club Site

The PRGC leased the 29-acre Site from the DCNR for trap shooting activities for approximately 60 years until circa 2017-2018 when the lease was terminated. DCNR took possession of the Site in 2019. The range consisted of six shooting stations and associated trap houses. The Site was mainly wooded, with a mix of hardwoods and conifers. The Site also includes a narrow wetland along the eastern shore of the Lake. Over 10 years ago, DCNR coordinated with PRGC to begin restricting trap shooting and initiated remedial obligations for the Site. Following several investigations, DCNR completed tree removal activities that cleared approximately 10 acres of downrange vegetation from the Site.

A number of environmental investigations and studies have been conducted at the Site since 2007. Investigations revealed lead contamination in the soil resulting from the discharged ammunition. Lead was identified as the primary Constituent of Concern at levels up to 155,866 milligrams per kilogram (mg/kg) in an approximate 6-acre area. Pellet counts from surface soil samples collected across the Site ranged from 37 to 131,961 pellets per square foot. Pellet size and distribution indicated that most pellets were unfragmented.

In order to move forward with plans to conduct remediation of the Site, DEP and DCNR worked to craft a Memorandum of Understanding through which the two agencies outlined their relative obligations toward completing remediation activities. In 2021, DEP brought OBG/Baker on board to complete remediation of the Site.

Project at a Glance

Name:
Philipsburg Rod & Gun Club Site

Location:
Rush Township, Centre County, PA

Project Size:
Approximately 29 acres

Principal Use:
A Pennsylvania State Park operated & maintained by DCNR, including recreation & camping areas

Total Project cost:
$5.2 M

Consultant:
Project Oversight: OBG/Baker Environmental Solutions Joint Venture,

ECOBOND Application: Metals Treatment Technologies, LLC (MT2)

Project Period:
June 2021 – December 2022 (1.5 years)

Partners:
PA DCNR
Centre County Conservation District

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Prior to starting excavation activities, a treatability study was conducted for the use of a proprietary chemical stabilization reagent (ECOBOND) to determine its effectiveness for treatment of metals in soil. Application of the ECOBOND varied depending upon the initial total lead and Toxic Characteristic Leaching Procedure (TCLP) lead concentrations in untreated soil. Use of ECOBOND successfully lowered the TCLP lead concentrations to below the post-performance criteria of 5.0 milligrams/liter leachable lead required for disposal as a nonhazardous waste.

Site preparation activities began in June 2022, with mobilization of equipment, grinding of stumps left from the previous tree-clearing activities, and collection of additional background samples. Excavation of contaminated soil began in July 2022. Soil that exceeded DEP's Act 2 Statewide health standard for lead was excavated and treated by MT2 with ECOBOND, as necessary, until the excavated material met the disposal criteria. Field samples were collected and tested using an x-ray fluorescence (XRF) analyzer. Initial samples tested using the XRF were also submitted for laboratory analysis to confirm the accuracy of the field analysis. The XRF was found to provide accurate results and provided field screening for soil post-treatment to determine whether additional application of ECOBOND was needed.

The final load of treated soil was transported offsite to the approved disposal facility in November 2022. A total of 19,800 tons of contaminated soil was removed from the Site, with 2.75 tons of lead shot being separated out and sent to a recycling facility. Following excavation and backfilling activities, 318 trees of various species approved by DCNR were planted, and a pre-approved mixture of wild seeds was applied. With the cleanup completed, the Site can be used as a productive part of the park and its ecosystem.

Highlights:

- 19,800 tons of lead-contaminated soil was removed.
- 2.75 tons of lead shot were separated from the soil and sent to a recycling facility.
- Removal of lead-contaminated soil in this 29-acre recreational State Park setting will provide unrestricted use for DCNR.

Project Photos

"Before" photo of Site in 2015

"Before" photo of Site in 2007

Excavation activities August 2022

Lead separator at work October 2022

Project Photos

Excavation area with Black Moshannon Lake in the background September 2022

Site restoration, tree planting and seeding activities December 2022

Summer 2023

The Hazardous Sites Cleanup Fund (HSCF), a special fund established under the Hazardous Sites Cleanup Act (HSCA) (35 P.S. §6020.101 et seq.), provides the funding for the Department of Environmental Protection (DEP) to carry out a number of activities to address releases and threatened releases of hazardous substances to the environment.

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