



2021 Secretary of Defense Environmental Awards Environmental Restoration, Installation Award

Each year since 1962, the Secretary of Defense has honored installations, teams, and individuals for outstanding achievements in Department of Defense (DoD) environmental programs. These accomplishments include outstanding conservation activities, innovative environmental practices, and partnerships that improve quality of life and promote efficiencies without compromising DoD's mission success. The 2021 Secretary of Defense Environmental Awards cycle encompasses an achievement period from October 1, 2018, through September 30, 2020 (Fiscal Years (FY) 2019-2020). A diverse panel of 47 judges with relevant expertise representing Federal and state agencies, academia, and the private sector evaluated all nominees to select one winner for each of the eight categories. These eight categories cover five subject areas including natural resources conservation, environmental quality, sustainability, environmental restoration, and cultural resources management.

About the Environmental Restoration, Installation Award

The Environmental Restoration, Installation award recognizes efforts to protect human health and the environment by cleaning up hazardous substances, pollutants or contaminants, and munitions in a timely, cost-efficient, and responsive manner. Restoring these sites impacted by past DoD activities protects military personnel, their families, and the public from potential human health, environmental, and safety hazards. The 2021 winner of the Environmental Restoration, Installation award is *Shaw Air Force Base, South Carolina*.

About Shaw Air Force Base, South Carolina

Shaw Air Force Base (AFB), located 7 miles west of Sumter and 36 miles east of Columbia, encompasses approximately 3,326 acres and is surrounded by a semi-rural area consisting of wooded and agricultural lands. Shaw AFB operates two satellite properties, Poinsett Electronic Combat Range, a 12,521-acre parcel 7.5 miles south of the base, and Wateree Recreation Area, a 26-acre parcel 30 miles north of the base. Shaw AFB is home to the 20th Fighter Wing, the Air Force's largest F-16 "Fighting Falcon" combat wing, whose mission is to provide combat-ready airpower and combat-ready airmen. The AFB provides essential services to the surrounding community through a variety of activities, facilities, and programs. The base supports more than 8,500 military and civilian employees, 11,000 family members on base, and 15,000 military members and retirees off base, providing a \$1.8 billion total economic impact annually in South Carolina. The Shaw AFB Environmental Restoration Program is overseen by the Remedial Project Manager (RPM) and a full-time contractor, who are supported by project teams from the Air Force Civil Engineer Center (AFCEC), U.S. Army Corps of Engineers, South Carolina Department of Health and Environmental Control (SCDHEC), base leaders, and subject-matter experts. The program's primary focus is to clean up hazardous wastes from past aircraft operation and maintenance activities that have resulted in soil and groundwater contamination.



Shaw AFB is home to the 20th Fighter Wing.

Major Accomplishments in FY 2019-2020

- Shaw AFB was one of the first bases to complete two years of intensive Installation Strategic Acquisition Planning. This new process resulted in the early award of a multi-year \$16.3 million Optimized Remediation Contract in August 2020, which replaced three expiring contracts totaling \$32 million. The 3 performance-based restoration projects achieved a record 10 site closeouts, 2 Response Completes milestones, and 11 optimized remedies. Six sites achieved dramatic reductions in groundwater plume footprints, giving them the opportunity to achieve Response Complete milestones under the new contract.
- The Environmental Restoration Program expanded a 1997 10-extraction well pump-and-treat system that treats a 2-mile-long by 1-mile-wide chlorinated solvent plume that has migrated off base. The team increased the number of extraction wells to 23, installed a second air stripper to double treatment capacity to 1,200 gallons per minute, drilled 38 new re-injection wells, and centralized the deep groundwater treatment of 3 large chlorinated solvent plumes, covering nearly one-third of the base's total footprint. The re-injection capabilities return more than 850,000 gallons of clean treated water back into the deep groundwater source and force contaminated water closer to a down gradient extraction well. This system is projected to reduce the 180-year estimated cleanup period by 50 to 75 percent.
- The Environmental Restoration Program uses innovative technology to address challenging cleanups. The base's main pump, treat, and inject system could not contain a deep trichloroethene (TCE) and tetrachloroethene (PCE) plume, and it migrated beyond the base boundary. The program conducted a demonstration project using a BOS 100® treatment barrier, a Trap & Treat® in situ remediation technology designed to degrade chlorinated solvents. BOS 100 aqueous slurries were injected into 130 temporary injection points, proactively intercepting and treating the TCE/PCE plume's leading edge to prevent further uncontrolled impacts to lands down-gradient from the base. The first semi-annual performance monitoring report recorded an average 38-percent reduction in TCE/PCE levels passing through the 20-year barrier.
- The Environmental Restoration Program developed a solution to clean up a contaminant plume beneath an airfield where aircraft weapons systems are parked, without affecting mission readiness or compromising the pavement structure. The team installed 2 3-inch high-density polyethylene injection pipes, horizontally drilled at a record 1,919 feet and 2,069 feet in length. The horizontal pipes inject atmospheric air for treatment just below the plume and 60 feet below the surface. This technology will reduce cleanup time by a decade without impacting flight operations.
- Shaw AFB successfully partners with stakeholders and the state. AFCEC's Restoration Program Management Office helped refine Shaw AFB's 30-year cost-to-complete program and provided a blueprint for future success. Shaw executed its recent \$62 million contract due to an effective core project team, headed by the RPM and supported by contract, technical, legal, and public affairs specialists. Shaw AFB is actively supported by a biennially renewed Defense and State Memorandum of Agreement, which allows the base to complete expedited regulatory reviews and participate in SCDHEC partnering teleconferences and quarterly face-to-face on-site meetings. Shaw AFB's recent collaborative achievements with the state include a pre-solicitation regulatory review of the new multi-year base-wide cleanup contract's Statement of Work and site visit participation with prospective bidders, resulting in the contract's early \$16.3 million award.



Department of the Air Force environmental restoration contractors use a geoprobe rotary sonic drill rig to drill a small diameter pipe into the ground at Sans Souci Farm in Sumter, SC, March 7, 2019. The pipes are conduits for the precise injection of the BOS 100 product.