

Marine Corps Recruit Depot Parris Island

ENVIRONMENTAL RESTORATION - INSTALLATION

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Mission - “WE MAKE MARINES.”

Marine Corps Recruit Depot Parris Island (MCRD Parris Island or the Depot) is a vital asset to our country’s national security. MCRD Parris Island’s mission has been making United States Marines since 1915. The Depot accomplishes this mission by training 20,000 quality, young men and women each year and transforming them through rigorous basic training, shared legacy, and a commitment to core values in order to prepare them to win the nation’s battles in service to the country. The Depot provides schools to train enlisted Marines as drill instructors and field staff, rifle marksmanship training for Marine officers and enlisted personnel in the southeastern United States, and Marine Reserve training. In addition to maintaining and operating facilities in support of the mission, the Depot also provides services and housing for Depot personnel.

The objective of the Environmental Restoration (ER) program at the Depot is to investigate and remediate hazards in the environment from past activities to protect human health and the environment. The ER program provides appropriate remediation so that future Marines can enjoy the entirety of Parris Island the same as Marines of the past.

Despite challenges posed by novel coronavirus restrictions, the MCRD Parris Island Tier I team devised and used innovative solutions and technologies to make incredible progress on restoration program sites in FY2021 and FY2022. A web conferencing platform proved to be a remarkable tool for work among stakeholders. Regular and effective communication among the MCRD Parris Island Tier I team was coordinated with guidance from a third-party facilitator, Ms. Laura Christ. Regular web conferencing facilitated the review and coordination of required documentation and complex fieldwork. Regular communication was key in the strategic planning of overlapping mobilizations and coordination of 64 separate tasks on multiple sites in various stages of work. Regular team discussion during planning, field work, and data evaluation stages – along with leveraging of cultural resources data as part of field work planning – were major contributors to effective and efficient completion of tasks. With guidance from Ms. Christ, web conferencing proved to be a productive tool for the Tier I stakeholders; Department of the Navy (Naval Facilities Engineering Systems Command MIDLANT and MCRD Parris Island,

and Navy contractors Tetra Tech and EnSafe); United States Environmental Protection Agency (EPA); and South Carolina Department of Health and Environmental Control (SCDHEC).

Significant recent and ongoing accomplishments achieved include:

- Completion of sampling and analysis plans (SAPs) for all eight Military Munitions Response Program (MMRP) sites and four Installation Restoration Program (IRP) sites.
- Completion of fieldwork to support investigations for two MMRP and nine IRP sites.
- Initiation of field work for two MMRP and two IRP sites; field work planning for four MMRP sites.
- Completion of SAP for base-wide PFAS investigation.
- Continued long-term monitoring, operation, and maintenance for three landfill sites.
- Initiation of reporting (e.g., Site Inspection, Remedial Investigation, Feasibility Study, and Pre-Design Investigation) for two MMRP and nine IRP sites.
- Program budget was \$2,255,525; MMRP programmed for \$236,078.00 and IRP the remaining \$2,019,447.00



Photo 1. Huguenot Monument. Built in 1562 by Jean Ribaut, the monument marks the site of Old Charles Fort. The National Historic Landmark at the MCRD Parris Island is overlapped by two sites where environmental investigations were conducted in FY2021-2022. The Cultural Resources Dept. was leveraged to provide additional data and give context to findings of site investigations by the Environmental Restoration Program.



Figure 1. Environmental Restoration Sites. At MCRD Parris Island the sheer number of sites adds to the complexity of remediating in the marine environment of the low-lying barrier island. Parris Island is shown with Environmental Restoration Sites in magenta.

Setting

Located within Beaufort County, the Depot is about six miles south of downtown Beaufort, South Carolina. The region can be described as a quiet, coastal location. The military is a major provider of local jobs. The Depot has office buildings, family and recruit housing facilities, building and vehicle maintenance shops, and community facilities.

Three miles past the inlet from the Atlantic Ocean to Port Royal Sound is Parris Island. Port Royal Sound is the deepest natural harbor south of Chesapeake Bay. The Depot encompasses the entirety of Parris Island. It is sheltered from Atlantic surf and winds by Hilton Head Island to the Southwest and Bay Point Island to the Southeast. The dynamic ocean setting

consists of a mixture of hummock islands, salt marsh, tidal creeks and rivers, upland habitat, tidal ponds, and wetlands. The land area of the Depot is approximately 8,095 acres with well over half of it classified as wetlands. Wetlands consist of mainly tidal salt marshes, and serve as nursery grounds for shrimp, crabs, and fish. The area sustains commercial and recreational marine fisheries. Port Royal sound is notable for some of the most pristine fishing waters in South Carolina, without consumption advisories on any fish species.

With the average elevation at MCRD Parris Island being five feet above sea level, special coastal/ocean challenges, as well as the shallow groundwater table present the most significant environmental and technical challenges to remedial actions.

Program Background

The Navy has been conducting ER activities at the Depot since 1986 with the identification of 55 sites for possible investigation and cleanup. The Depot was placed on the National Priorities List in 1994, and since then the U.S. Navy, U.S. Marine Corps, U.S. EPA, and SCDHEC have worked together on Depot cleanup activities. Legislation effecting the ER Program is the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), which is commonly known as Superfund. In 2006, the Federal Facilities Agreement helped give structure to the program and established the Tiered approach to partnering. Sites within the ER Program included former spill areas; landfills containing contaminated ground water, soil, and sediment; and former munition sites used to support previous military activities. The sheer number of sites adds to the complexity of remediating sites on the low-lying barrier island within the marine environment. The ER Program includes both Installation Restoration Program (IRP) and, Military Munition Response Program (MMRP) sites.

The four largest remediated sites, or Operable Units (OUs), are OU1, OU2, OU3, and OU5 where historic landfill operations existed. Third Battalion Causeway (OU3), a secondary thoroughfare on the Depot, was built over the cap remediating OU 3. The Causeway continues to be maintained by the Depot with continued involvement of relevant stakeholders. A capital improvement project for the roadway was planned in 2020. The regulators have been coordinating with the design since inception and the Technical Review Committee has also been included in review opportunities. The project continues to move forward; the contract for the work is expected to be awarded in FY 2023.

To date, six sites have been determined for no further investigation/action, four sites have remedies in place and are under long-term monitoring, 22 sites are under investigations, and six sites are awaiting initiation of investigation. In the year prior to this award period one Record of Decision (ROD) was finalized and with the significant progress made in the FY2021-2022 period, a minimum of four RODs are expected in the FY 2023-2024 period.

Processes

Human health and the environment are protected by several Depot initiatives. Environmental management training is offered quarterly on the Depot to all facilities and maintenance personnel and is required annually. This training includes information on land use controls, ground penetrating activity permit requests ('dig permit'), and Requests for Environmental Impact Review (REIR).

The dig permit process is required throughout the Depot for any intrusive work. The approval process incorporates review and approval from Depot subject matter experts including the ER Program Manager, Explosive Safety Officer, and Geographic Information System specialists. If an impact may occur within a MMRP site, then Depot coordinates with Marine Corps Systems Command (MARCORSYSCOM) for the application of an Environmental Safety Submission/Determination Request (ESS/ESSDR) when work occurs in MMRP sites.

For substantial maintenance and development projects, the Environmental Division (ENV DIV) including the ER Program conducts environmental reviews. The process for requesting a Request for Environmental Impact Review (REIR) is well established and successful. Through the REIR process, the ER program coordinates with stakeholders when development work or significant maintenance is required within the Depot's 55 ER sites.

While the program has no Restoration Advisory Board (RAB), the ER Program does have a Technical Review Committee whose members confirm their commitment annually. While no in-person meetings occurred within the reporting period, reviews are sent out electronically for comment. In the next two-year period, the Technical Review Committee will be sent the upcoming RODs currently under development. The committee is composed of environmental professionals in the local community who volunteer their time.

Team

The Site Management Plan (SMP) is updated annually by the Tier I team. The full schedule showing decision documents, drafting iterations and full range of deadlines is incorporated within the SMP. The MCRD Parris Island team consists of experienced and knowledgeable professionals who come from as far as Pennsylvania, Virginia, as well as local Region 4 members from Georgia and South Carolina. NAVFAC Midlant uses professional capabilities of environmental contractors to investigate sites and create solutions for protecting human health and the environment. With new personnel refreshing the program, cooperation and communication have thrust the program forward in recent years.

Over recent years the program has developed an excellent relationship with regulators and as a result workflow is smooth. Work is planned appropriately, and decision documents are approved by regulators so that once environmental data is collected, decisions can be made quickly, and sites move forward in the CERCLA process. Fieldwork is contracted to the national firm Tetra Tech and local companies like EnSafe and MSE. Having multiple firms helps the work on the ground move quickly. The planning and preparing for investigations takes months while the execution takes weeks. The quality of the contracted companies helps provide skilled personnel to the team, which has been one of the key challenges. In addition, the local contractors who are familiar with the coastal environment, shallow groundwater, and local ecology make significant contributions to the program.

Fieldwork runs well because of the accomplished planning. Regularly scheduled team calls (generally every week or every other week) with planning and guidance from a team facilitator – using a web conference platform that allows for screen sharing and video display – have allowed continued, open, and effective communication among team members to drive significant progress.

Accomplishments

One of the munition restoration sites, UXO 3, was a reported aerial bombing site located in a portion of the main parade deck that has been in use since before World War II. Limited

historical information is available on the site use and investigation was required within the heavily and regularly used parade deck. Investigation planning and implementation required coordination with Depot personnel to insure critical uses of the parade deck would not be disrupted (recruit training and graduations), and continued discussion with the team during planning and fieldwork to ensure that the munitions survey and resultant data would meet the needs of the investigation. The survey technique – Advanced Geophysical Classification (AGC) – provided more detailed information on potential munitions to allow decisions to be made without intrusive investigation that could disturb the parade deck and mission critical training. Groundwater and soil sampling locations were identified to provide the necessary characterization data with the least site disturbance. Investigation updates were provided during regularly scheduled team calls that facilitated team decisions during fieldwork. The report for the investigation is currently being prepared.

The completion of sampling and analysis plans for all eight munitions restoration sites marks another example of noteworthy teamwork. This accomplishment was the result of planning discussions with the team during team calls. Due to limitations on travel, in-person team meetings – which were previously held every 2 to 3 months – were no longer available to support discussions and resolution of concerns. With the facilitators’ support, team member commitment to non-reactive and productive dialogue, and desktop sharing functions, concerns were discussed openly and resolved during calls and follow-up email communications.

Over the FY 2020-2022 period an unprecedented amount of site investigations have been planned and executed. Notably 50+ monitoring wells were installed, and hundreds of locations sampled for constituents within soil and sediment. With one ROD finalized in the two years before this award cycle, four RODs at minimum are expected to be finalized in the two years following this award cycle.

Summary of Accomplishments

The team has completed 31 documents this reporting period. This is a remarkable achievement considering each document goes through multiple drafts, with comment periods and final approval from state and federal regulators. Alongside this achievement is the equally notable accomplishment of 32 distinct fieldwork completions.

With personnel challenges being the most significant, the recent accomplishment of maintaining progress even with several gapped roles points to the exemplary level of teamwork that has been achieved in the program. MCRD Parris Island had no Environmental Restoration Program Manager from April 2021 through June 2022. The South Carolina Department of Health and Environmental Control lost their team representative in June 2022, and the EPA’s Region 4 pair on the team dropped to one when one of their managers went on maternity leave. Despite the gapped positions and the significant number of sites being worked, Tier II personnel stepped in to fill gaps and the Senior EPA regulator successfully carried the extra load.

With one ROD finalized in the two years before this award cycle, four RODs at minimum are expected to be finalized in the two years following this award cycle. The projected outcomes approaching the program could not have been possible without the high level of cooperation and synergistic teamwork currently within the program.

As with many military facilities, past releases of Per- and Polyfluoroalkyl (PFAS) containing substances to environmental media from use of firefighting foams may have occurred at the Depot. Investigation of one former firefighting training site was completed in FY2022 and investigation of another former firefighting training site was initiated in FY2022. Other areas

where PFAS may have been released will be investigated in FY2023. With ever increasing knowledge of PFAS, the team continues to remain up to date on changes in screening criteria, sampling requirements, and updates in laboratory analytical methods to ensure the appropriate data collection and evaluation is being conducted.

Cost Effectiveness

Workplace changes associated with the COVID-19 pandemic, included an increased reliance on electronic files. Instead of printing and shipping reports, often in sets of multiple copies, electronic files were used. The resultant savings of this practice brought not only reductions in spending, but also in staffing required. Budgets in time management also relaxed because of the elimination of producing multiple hard copies of files and sending them through the mail. This change in file management matured in FY 2021 and continues today.

The ER Program was able to leverage the Cultural Resources (CR) Program during the current award period. With previous archaeological investigations having been done in area of several OUs, the findings of ER investigations were put into context with the use of data from the CR program. Specifically, several munitions investigations identified metals in the environment which were explained by the historical use of those areas by early settlers of Parris Island. Various artificial features in the landscape have also been collected at very high resolution surface and subsurface by the CR Program collocated at ER sites. In the past two fiscal years, value was added to those past dollars spent by the ER program using this data.

Cost savings were facilitated by the site familiarization gained through experience of field teams in FY2021-2022. Contractors and their local subcontractors remained consistent during the reporting period. With the numerous field work projects completed and initiated, the quality of work increased with the number of mobilizations. For example, for one site where chlorinated solvent contamination was previously detected in marsh sediment adjacent to a stormwater outfall, multiple phases of investigation were required to determine whether there is an ongoing source and characterize contamination at the site. Several phases of investigation were required including field characterization surveys, test pitting, groundwater, porewater, soil, and sediment sampling to conduct the necessary investigation of potential sources and obtain the necessary data to show that an ongoing source is not present at the site and to complete characterization of the contamination. Consistent field personnel were used to the extent possible, sediment sampling requiring special equipment to collect deep samples in the field marsh was conducted back to back with similar sampling at the sites, drilling, surveying, and investigation-derived waste (IDW) management subcontractors for multiple sites were coordinated to reduce the mobilization efforts. Because the area is mission critical for Marine Corps training activities, the field activities were coordinated so as not to disturb training uses.