Environmental Restoration

Project Shoal

. . .an Offsites Project

History and Site Overview

Project Shoal, located in Northern Nevada, was the site of an underground nuclear test conducted jointly in 1963 by the U.S. Department of Defense and the U.S. Atomic Energy Commission (predecessor to the U.S. Department of Energy - DOE). As part of the Vela Uniform program, the test was designed to improve the nation's ability to identify and locate underground nuclear explosions.

Project Shoal is located approximately 30 miles southeast of Fallon, Nevada, in Churchill County. Although the U.S. Department of the Interior - Bureau of Land Management maintains ownership of the land, a land withdrawal allows the DOE and the U.S. Department of Defense (DoD) to manage the site.

Drilling activities at Shoal

Site Cleanup

In 1996, the DOE Nevada Site Office (NSO) began environmental restoration activities at the Shoal site (the site had officially been demobilized in 1964) to investigate potential environmental impacts from previous testing. The Federal Facilities Agreement and Consent Order (FFACO), the agreement that governs DOE sites in Nevada, outlined the investigation and cleanup strategy. The surface and subsurface areas at the Shoal site were to be considered separately.

Surface

NSO conducted surface characterization at Shoal and determined that chemicals called hydrocarbons, which were deposited during drilling activities into a mud pit, remained in the soil. In 1997, NSO removed and transported the contaminated material offsite to a designated disposal facility at the Nevada Test Site. The Nevada Division of Environmental Protection (NDEP) approved the surface as "clean closed" in early 1998.

Shoal is one of nine Offsites managed by the Nevada Site Office's Environmental Management Program. Offsites are located off of the Nevada Test Site (two in Nevada, two in Colorado, two in New Mexico, one in Alaska, and one in Mississippi).

Subsurface

In 1996, the NSO installed four characterization wells at the Shoal site to better understand the area's groundwater system and to determine the potential migration paths of radionuclides (radioactive constituents) that were introduced during the underground nuclear test. Sampling data from these wells was used to design what is called a Flow and Transport computer model, which produces a three-dimensional illustration of this groundwater system. Four additional wells were drilled in 1999 when preliminary model results indicated a need for further data. After collecting additional information and producing a new groundwater model, NSO submitted a modeling report to NDEP in 2003.

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Status

NDEP is currently reviewing a second draft of a groundwater model for the Shoal subsurface. Once the model is accepted, the NSO will move forward to develop a corrective action plan. The plan will address the subsurface's condition and may include a full remediation effort (e.g., pumping all water out of the wells) or a less intensive alternative such as long-term monitoring.

The DOE currently maintains control over the subsurface at Shoal and will continue to do so until a five-year proof-of-concept period validates the predictions of the groundwater model. Restrictions on the subsurface, including the use of groundwater, will most likely be in place even after the land is transitioned back to another organization, such as the Bureau of Land Management or the DoD. While the Shoal surface may be considered safe for unrestricted use, public access may still be restricted under the DoD's land withdrawal.

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