

Environmental Restoration Project



ER Site No. 112: Explosive Contaminated Sump (Bldg 9956)

ADS: 1335

Operable Unit: Southwest Test Area

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Site History

ER Site 112 is located under the present Building 9956, which is located in the Coyote Test Field Area, east of Technical Area III. Building 9956 is operated by the Experimental Impact Physics Department, Organization 1433. The site is considered to be an active site. However, since June 1995, the site has remained inactive. The site is on land owned by the U.S. Air Force, permitted to DOE and SNL/NM.

ER Site 112 lies on the western margin of the Sandia Fault Zone at an elevation of 5,483 feet above mean sea level. The geologic materials underlying the site consist of thick alluvial sediments which overlie deep bedrock.

Monitoring well AVN-1, which is 5,100 feet north of Building 9956, is screened in the Santa Fe Group alluvial fan facies. Depth to groundwater in this well is 508 feet below ground surface (bgs). Monitoring well LMF-1 is 6800 feet to the southeast of the site. Depth to groundwater in this well is 347 feet bgs. This well is screened in the Abo Sandstone

Building 9956 houses an impact chamber consisting of an 89-millimeter (mm) powder gun used to conduct experiments on various small, thin metal targets. The original unit was installed in 1969, and was still operational in 1995. A small explosive charge was detonated at one end of a 60-foot tube with targets at the other end typically consisting of non-hazardous materials, except for some tests involving beryllium.

In 1980, a series of 15 experiments involving beryllium targets was conducted with the 89-mm powder gun in Building 9956. In this series of experiments, projectiles were fired at beryllium targets, expending one target per test. Powdered explosive charges were used to propel the projectiles, but black powder was reportedly never used in this gun. Each target was a small beryllium disk, 7.6-centimeters (cm) in diameter and 0.04 to 0.09-cm thick, attached to an

aluminum target holder. The beryllium targets were arranged in a 1.8 by 4.9-meter impact chamber. A negative pressure airlock was constructed around the chamber to prevent the release of hazardous materials during the tests.

SNL Industrial Hygiene (IH) Department provided guidance and monitoring during the tests. According to available site background information and an interview with personnel, all remaining target materials were collected after each experiment, bagged and disposed of by the IH organization. The impact chamber was then washed out with a surfactant and rinsed with approximately 55 gallons of potable water. This water was flushed out into a plastic-lined trench and discharged into a series of three holes in the ground on the west side of the original building. Each hole was approximately the size of a 55-gallon drum. The plastic lining in the trench was then removed and disposed of. Interviews indicated that the powder used in firing the 89-mm gun was completely expended during each experiment. Tests involving depleted uranium (DU) were never conducted in this gun. Other guns in Building 9956 were used for tests that included DU, but the impact chambers were wiped clean rather than rinsed with water.

In 1982-1983, an addition was added onto Building 9956. During construction, the soil in the sump area was reportedly excavated and removed from the area, although disposition of the excavated soil is unknown. Off-site soil was backfilled into the sump area, compacted, and an addition with a concrete floor was constructed over the site.

Constituents of Concern

DU
High Explosives
Beryllium
Lead

Current Hazards

There are no current hazards at this site related to contamination of the surface or subsurface soils.

Current Status of Work

Site characterization sampling is complete. A confirmatory sampling no further action (NFA) proposal was submitted to the New Mexico Environment Department (NMED) in May 1997. In December 1999, following review of SNL's response to a Request for Supplemental Information (RSI), NMED indicated that the site was acceptable for NFA. The NFA was approved by NMED in October 2000 after completing the public review and permit modification process.

Future Work Planned

No additional work is planned at this site.

Waste Volume Estimated/Generated

No waste was generated.

Information for ER Site 112 was last updated Jan 22, 2003.