SAND2010-3715P

ER Site 64: Gun Site (Madera Canyon)

ADS: 1333
Operable Unit: Canyons Test Area


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## Site History

ER Site 64 was used by the Department of Defense (DOD) to conduct tests on classified weapons components packaged in 155-millimeter (mm) shells that were fired from a portable gun. The site was also used to launch rockets toward suspended targets at ER Site 81 (New Aerial Cable Site). ER Site 64 consists of a concrete inclined structure, a portable shed, four metal velocity-screen towers, six electrical outlet posts, three concrete pads, and an access road that loops around the site.

The inclined structure consists of two concrete slabs. One slab (approximately 10-ft by 10-ft) was positioned upright at a 90-degree angle to the ground surface, and a second slab (approximately 10-ft by 15-ft) inclined against the first at approximately 60-degrees to the ground surface, forming an angled surface that faces south. This inclined concrete surface probably served as the blast shield during gun firing activities. Instrumentation boxes that were probably the control point for gun-firing experiments were located on the north side of the upright slab. Soil was mounded against the lower portion of the inclined face. A portable shed that housed electrical equipment was adjacent to the concrete structure.

The metal velocity-screen towers measured approximately 5-ft wide and 30-ft tall and mounted at the northeast and southwest ends of two of the three concrete pads elongated northeast-southwest measured approximately 6 ft by 25 ft. The concrete pads were spaced approximately 25 ft apart. The third concrete pad (approximately 6 ft by 20 ft) was west of the tower pads. Six electrical outlet posts were arrayed directly northeast of the towers.

Based on information derived from historical aerial photographs, it is believed that ER Site 64 was constructed between October 1967 and June 1971. In consensus with this interpretation, archival records report that the site was active in the late 1960s. Several pieces of equipment are identifiable in a 1971 historical aerial photograph. By 1983, portions of the site were covered with vegetation, but the access loop road around ER Site 64 appears well-traveled. The site roads and general area are periodically used by KAFB operations for wargame activities.

ER Site 64 was used in the late 1960s to conduct tests on classified weapons components that were packaged inside projectiles and fired from a portable 155-mm gun. The gun was located just southwest of the inclined concrete structure and fired projectiles to the southwest. The components were withdrawn from the projectile by a parachute prior to impact so that they could be recovered and examined after the tests. Double-based gun propellant, which frequently contains trace amounts of lead compounds as burn rate modifiers, was used in the tests.

The projectile flight trajectory was to the southwest through the space between the four metal velocity-screen towers toward targets located approximately 2 miles (mi) away. Instrumentation was positioned on the metal velocity-screen towers for the purpose of recording the flight time of the projectile as it passed from the first set of towers to the second set of towers. The flight time and distance between the towers was used to calculate the velocity of the projectile.

Initially, the projectiles impacted on the slope below the western cable anchor for ER Site 81 (New Aerial Cable Site). However, after a component was lost on the slope due to failure of the parachute-ejection system, an earthen-mound impact area was built to the northeast of the initial impact area to catch the 155-mm projectiles.

The earthen-mound impact area was investigated as proposed ER Site 239. In April 1980, SNL/NM Health Physics personnel conducted a radioactive survey of the proposed site and found no radioactivity above background levels. A UXO/HE survey that was conducted found no contamination. Surface soil samples were collected and analyzed for radionuclides and metals. The analytical results indicated that the site contained no constituents above action levels or background concentrations. This site was removed from consideration as an ER Site in April 1996. No evidence was found to indicate that this site should be included as an ER site.

ER Site 64 was also used to launch Chaparral, HVAR, and Zuni rockets from a portable rocket launch trailer on the west side of the loop road around ER Site 64. The rockets were fired at targets suspended from the aerial cable at ER Site 81 toward an impact area in the southeastern corner of ER Site 81. In March and April of 1982, three Chaparral rockets were fired from ER Site 64 toward ER Site 81. According to one interviewee, HVARs were probably fired during a similar test in October 1983. A comparable series of guided missile tests was conducted at ER Site 64 between October 1 and December 18, 1985.

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Corrective Action

ER Site 64 was first listed as a potential release site based upon information obtained from the Comprehensive Environment Assessment and Response Program (CEARP) in 1985. Prior to the CEARP investigation, the US EPA conducted a RCRA Facility Assessment in 1985 indicating some shrapnel was discovered. No shrapnel has been discovered during subsequent site inspections.

A visual survey for Unexploded Ordnance / High Explosive (UXO/HE) materials was conducted in October 1993, and the site was added to the HSWA module in November 1993. No UXO/HE material was found. In January 1994, a surface radiation survey was conducted, but no radioactive anomalies were detected. In September 1995, an Operable Unit 1333 RCRA Facility Investigation (RFI) Work Plan was

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submitted to NMED. Planned field activities were not applicable to ER Site 64, but confirmatory soil sampling was conducted in July 1997. Low concentrations of metals were detected. Concentrations detected were below background levels.

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Constituents Investigated

Metals

Lead

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Institutional Controls

NMED has determined the site is complete and no controls are needed. However, as a best management practice, SNL has established Corporate Institutional controls (IC) to track this site in the IC database. Additional information regarding SNL Institutional Controls can be obtained from the SNL IC tracking database. For access to and/or more information, please contact the Environmental Message line at 505 284-9883.

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Current Regulatory Status

Corrective action is complete at ER Site 64, and no further action is required. This site is acceptable for residential land use, and there are no restrictions on future activities. NMED approved completion of corrective action in September 2000.

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Results of Risk Analysis

No risk analysis was necessary

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Waste Volume Estimated/Generated

No waste was generated

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