

Environmental Restoration Project



ER Site No. 14: Burial Site (Bldg 9920)

ADS: 1335

Operable Unit: Southwest Test Area

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Site History

Sandia National Laboratories/New Mexico (SNL/NM) ER Site 14 is located in the Coyote Test Field Area 1,500 feet east of Technical Area III. The site encompasses an area approximately 140 feet west of Building 9920. ER Site 14 is on land owned by the U.S. Air Force that is permitted to the U.S. Department of Energy (DOE) and SNL/NM. The site, as defined by its boundaries, covers approximately 2.5 acres. The actual study area is within a 1.4-acre area within the boundaries. This area was determined from subsequent interviews and investigations to be the approximate area of the burial site. The elevation of the site is 5,454 feet above mean sea level. Current and projected land use for ER Site 14 is industrial.

ER Site 14 lies on the western margin of the Sandia Fault Zone. The geologic materials underlying the site consist of thick alluvial sediments that overlie deep bedrock. An alluvial fan and piedmont colluvium overlies the Santa Fe Group Strata. The Santa Fe deposits are approximately 3,000 feet thick beneath ER Site 14. Descriptions of the regional geology are detailed in the annual Site-Wide Hydrogeologic Characterization Project (SWHCP) 1994 Annual Report.

SWHCP soil surveys and surficial mapping provide general soil characteristics for the area around ER Site 14. The dominant soil groups in the area include the Tome very fine sandy loam, and the Tijeras gravelly fine, sandy loam. The soils underlying the site are defined as the Tijeras gravelly fine sandy loam. The estimated recharge rate for soils in the area range from between 0.002 and 0.071 centimeters per year (cm/yr), which yields downward seepage velocities ranging from between 0.03 and 11.8 cm/yr.

No perennial surface-water bodies are present in the immediate vicinity of ER Site 14. The site is situated between two tributaries forming its nearest surface drainage, an ephemeral watercourse of an unnamed arroyo. The arroyo flows into an internal drainage basin. ER Site 14 lies in the HR-2 geohydrologic region described in the SWHCP Annual Report. This region is an

intermediate geohydrologic zone between the HR-1 zone to the west and the HR-2 zone to the east. It is comprised of a northeast/southwest-trending fault complex that includes segments of the Sandia, the Tijeras and the Hubbell Springs Faults. The uppermost interval of groundwater saturation in HR-2 is unconfined to semiconfined aquifers in the alluvial facies of the Santa Fe Group and Piedmont alluvium and semiconfined to confined aquifers in the local bedrock units. Examples of these two aquifer models are found in two wells located near the site. Monitoring well STW-1, which is 6,100 feet southeast of Building 9926, is screened in Tertiary conglomerates. Depth to groundwater in this well is 155 feet below ground surface (bgs). Monitoring well LMF-1 is 6,800 feet east of the site. Depth to groundwater in this well is 347 feet bgs. This well is screened in the Abo Sandstone.

Sources associated with activities at SNL/NM in the mid 1970s state that an above-ground explosives test was conducted with 6,000 to 8,000 fluorescent light bulbs in order to determine whether the vacuum in the bulbs, when broken, would suppress the shock wave of the detonation. Mercury was present within the fluorescent bulbs. It is estimated that approximately 0.5 kilograms (kg) of mercury were expended at this test site. The light bulbs were first placed in wooden boxes 2 by 2 by 8 feet, then around a 10-pound explosives charge. After detonation, the light bulb and box debris were removed from the site and disposed of. The remaining debris (scattered fragments of glass) was graded into a low spot in the test area approximately 2 feet deep. There are conflicting reports regarding the specific area of burial at ER Site 14. The glass debris may have been buried in one of the two locations which are the focal points of the investigation at ER Site 14. No other testing or burial was known to have been associated with this site. Constituents of concern (COC)s at the site include mercury and HE derived from the testing performed at the site. It is believed that most of the mercury would have been consumed during the test, leaving only trace amounts in the soil. Other potential COCs include DU and metals that may have been mixed from the firing tests at [ER Site 85](#), which is co-located with ER Site 14.

Building 9920 is used only for test control, so the testing mentioned in [ER Site 85](#) is actually conducted in the "graded area" at this site.

Constituents of Concern

- Depleted Uranium (DU)
- Mercury
- High explosives
- Metals

Current Hazards

There are no current hazards at this site related to contamination of the surface or subsurface soils. There are no structures or stored materials that remain at the site that could pose a potential hazard.

Current Status of Work

Site background investigation for the Resource Conservation and Recovery Act (RCRA) Field Investigation (RFI) is complete. The RFI Work Plan was completed in 1996 and was submitted for approval. In July 1997, as agreed to by New Mexico Environment Department (NMED), nine shallow exploratory trenches were excavated in the area and sampled. This activity was implemented rather than the proposed RFI sampling plan. A risk-based no further action (NFA) proposal was submitted to NMED in June 1998. NMED accepted Site 14 for NFA in June 1999. The NFA was approved by NMED in July 2000 after completing the public review and permit modification process.

Future Work Planned

No further work is planned.

Waste Volume Estimated/Generated

The Phase I Surface Radiation VCM for Sites 14/[85](#) has generated 22 55-gallon drums of radioactive waste.

Information for ER Site 14 was last updated Jan 22, 2003.