DOE/NV/26383–109

A Historical Evaluation of the U12t Tunnel, Nevada Test Site, Nye County, Nevada

Prepared by

Harold Drollinger, Robert C. Jones, and Thomas F. Bullard, Desert Research Institute
Laurence J. Ashbaugh, Southern Nevada Courier Service
and
Wayne R. Griffin, Stoller-Navarro Joint Venture

Prepared for

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office, Las Vegas, Nevada
and
U.S. Department of Defense
Defense Threat Reduction Agency
Nevada Test Site Office, Mercury, Nevada

Colleen M. Beck, Project Director
Division of Earth and Ecosystem Sciences
Desert Research Institute, Las Vegas, Nevada

Cultural Resources Technical Report No. 105
Division of Earth and Ecosystem Sciences
Desert Research Institute
Las Vegas, Nevada

February 2009

The work upon which this report is based was supported by the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office under Contract #DE-AC52-06NA26383.

ABSTRACT

This report presents a historical evaluation of the U12t Tunnel on the Nevada Test Site in southern Nevada. The work was conducted by the Desert Research Institute at the request of the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office and the U.S. Department of Defense, Defense Threat Reduction Agency (DTRA). The U12t Tunnel is one of a series of tunnels used for underground nuclear weapons effects tests on the east side of Rainier and Aqueduct Mesas. Six nuclear weapons effects tests, Mint Leaf, Diamond Sculls, Husky Pup, Midas Myth/Milagro, Mighty Oak, and Mission Ghost, and one high explosive test, SPLAT, were conducted within the U12t Tunnel from 1970 to 1987. All six of the nuclear weapons effects tests and the high explosive test were sponsored by DTRA. Two conventional weapons experiments, Dipole Knight and Divine Eagle, were conducted in the tunnel portal area in 1997 and 1998. These experiments were sponsored by the Defense Special Weapons Agency.

The U12t Tunnel complex is composed of the Portal and Mesa Areas and includes an underground tunnel with a main access drift and nine primary drifts, a substantial tailings pile fronting the tunnel portal, a series of discharge ponds downslope of the tailings pile, and two instrumentation trailer parks and 16 drill holes on top of Aqueduct Mesa. A total of 89 cultural features were recorded: 54 at the portal and 35 on the mesa. In the Portal Area, cultural features are mostly concrete pads and building foundations; other features include the portal, rail lines, the camel back, ventilation and cooling system components, communication equipment, and electrical equipment. On the mesa are drill holes, a few concrete pads, a loading ramp, and electrical equipment.

The principal modifications to the landscape are historic and associated with the development and use of the U12t Tunnel complex. In the Portal Area, these primarily include road building, mine tailings as construction fill, disposal of mine tailings on slopes during tunnel development, and construction of retention ponds. On the mesa, primary landscape modifications include road construction, trailer park pads, drill hole pads, electrical transmission lines and generating stations, and local quarry and bedrock excavation for building the pads and roads.

The U12t Tunnel complex is eligible to the National Register of Historic Places under criteria a and c, consideration g of 36 CFR Part 60.4 and is recommended to be maintained in place as a historic landscape. Scientific research conducted at the tunnel has made significant contributions to the broad patterns of our history, particularly in regard to the Cold War era that was characterized by competing social, economic, and political ideologies between the former Soviet Union and the United States. The tunnel also possesses a distinctive type and method of construction and engineering for conducting nuclear weapons effects tests underground.