

HISTORY

Radionuclides and other hazardous constituents were released into Acid Canyon beginning in the Manhattan Project during World War II. Prior to 1951, chemical and radioactive liquid wastes (including solvents, metals, plutonium, uranium, tritium, and other radioactive materials) from laboratories in the former Technical Area (TA)-1 (what is now in the area around the County Building and Ashley Pond) were discharged directly into a tributary drainage of Acid Canyon informally called the "South Fork". This area became known as Acid Canyon because the industrial waste line was called an "acid" line.

Former TA-45 was located at the top of the South Fork of Acid Canyon and served as the radioactive liquid waste treatment plant and vehicle decontamination facility for the Laboratory. The liquid waste treatment plant operated from 1951 through June 1964, treating the waste and discharging the remaining liquids from the mesa top down the canyon to the stream channel.



The Atomic Energy Commission transferred ownership of the TA-45 site, Acid Canyon, and a portion of Pueblo Canyon to Los Alamos County on July 1, 1967. The Laboratory placed no restrictions on the use of the sites because sampling results were below the cleanup standards of the time.

The county used the TA-45 site for the storage and staging of equipment and supplies for the Utility Department until these operations were moved to county property off Trinity Drive during the early to mid-1990s, leaving the property empty for several years. The county built a skateboard park on the site in 1997.

LOS ALAMOS NATIONAL LABORATORY

Los Alamos National Laboratory (the Laboratory) is a multidisciplinary research facility owned by the US Department of Energy (DOE) and managed by the University of California. The Laboratory is located in north-central New Mexico approximately 60 miles northeast of Albuquerque and 20 miles northwest of Santa Fe. The Laboratory covers 43 square miles of the Pajarito Plateau; the Plateau consists of a series of finger-like mesas that are separated by deep canyons containing intermittent and perennial streams running from west to east.

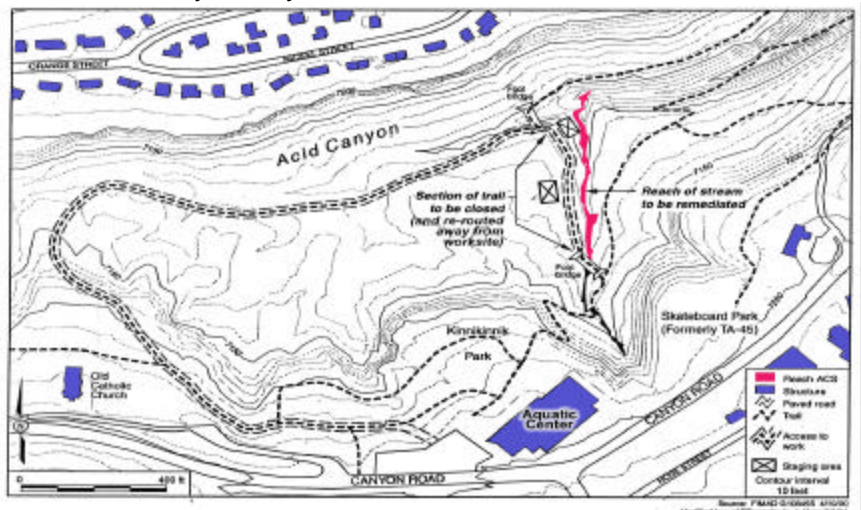
RISK REDUCTION AND ENVIRONMENTAL STEWARDSHIP ENVIRONMENTAL RESTORATION PROJECT

The Laboratory's Environmental Restoration (ER) Project (implemented by the Risk Reduction and Environmental Stewardship [RRES] Division) is a part of a DOE nationwide program. DOE's environmental restoration efforts began in 1989. The ER Project investigates whether hazardous chemicals and/or radioactive wastes are present as a result of past Laboratory operations and cleans up and restores such sites as needed.

ACID CANYON PRE-CLEANUP RISKS

Estimates of the potential health risks of using Acid Canyon for outdoor recreation were made in 2000. Personnel developed three activity-specific scenarios: the "trail user-hiker" scenario; the "trail user-jogger" scenario; and the "extended backyard" scenario, which was developed because children living in adjacent residential areas could use the canyon and play along the stream channel.

These scenarios, designed to be "reasonable maximum exposures," incorporated guidance provided by the US Environmental Protection Agency (EPA) and professional judgment, incorporating input from staff of the DOE, the New Mexico Environment Department, and the EPA. The scenarios provided a protective estimate of how intensely people could use an area and the potential radiation dose they could receive under conditions of relatively high use. The potential dose is in excess of what the average resident would receive from their normal day-to-day activities.



INFORMATION SHEET: ACID CANYON



Plutonium and other contaminants occurred in varying concentrations in a narrow strip along the stream channel. A well-used public trail directly crosses the stream channel in one location, crosses the channel on a bridge in a second location, and lies within 50 feet of the channel along 400 feet of its length.

DID YOU KNOW?

An average person in the Los Alamos area is estimated to receive

- 320 millirem per year of radiation from non-Laboratory sources, including naturally occurring radioactive materials such as radon and cosmic radiation;
- 100 millirem per year from medical and dental procedures, consumer products, and radioactive materials naturally occurring in our bodies; and,
- 3 millirem from Laboratory operations.

Based on the contaminant levels and using the activity-specific exposure scenarios described, the ER Project determined that there was no unacceptable radiation dose to recreational users of the South Fork of Acid Canyon from radionuclides in sediments without any cleanup. This is because the estimated potential doses (1.5 millirem per year for hikers, 0.9 millirem per year for joggers, and 12.7 millirem per year for a child in the extended backyard scenario) did not exceed the proposed EPA cleanup guideline of 15 millirem per year for a dose that comes from a contaminated site and is in addition to the background dose.

THE 2001 CLEANUP

Although the levels of contaminants were not believed to pose an immediate health risk, the DOE directed the ER Project to remove the sediments with the highest levels of plutonium from the South Fork of Acid Canyon following "ALARA" ("As Low As Reasonably Achievable") guidelines. This cleanup, completed in November 2001, significantly reduced the potential additional radiation dose (in excess of the background radiation) at a relatively low cost, which is the essence of the ALARA principle.

The Northern New Mexico Citizens Advisory Board recommended the cleanup option of removing sediment where the average concentration of plutonium 239/240 exceeded 280 pCi/g. The DOE and Los Alamos County supported this recommendation. The removal of this material has reduced the potential radiation dose to a recreational user to well below EPA guidelines.

Following approval by DOE, field work for the South Fork of Acid Canyon Interim Action began on August 22, 2001, and was completed on November 15, 2001. A total of approximately 480 cubic yards of sediments were removed from the canyon floor. This material was transported to TA-54 for disposal as low-level radioactive waste. The remediation work was completed without any accidents or safety incidents. The site was restored using native grass seed, fertilizer, mulch, jute matting, straw bales, and straw wattles.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

Contact the Communications & Outreach Team

Carmen M. Rodriguez
Phone: (505) 665-6770
Fax: (505) 665-7369
Email Address: carmenr@lanl.gov

Web site: <http://erproject.lanl.gov>