

Title:

**PARTNERING WITH PUEBLOS:
INVOLVING AMERICAN INDIANS IN
ENVIRONMENTAL RESTORATION
ACTIVITIES AT LOS ALAMOS NATIONAL
LABORATORY, NEW MEXICO**

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PARTNERING WITH PUEBLOS: INVOLVING AMERICAN INDIANS IN ENVIRONMENTAL RESTORATION ACTIVITIES AT LOS ALAMOS NATIONAL LABORATORY, NEW MEXICO

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History

Los Alamos National Laboratory, located in the northern mountains of New Mexico, approximately 32 miles northwest of Santa Fe, occupies a unique position in the Department of Energy's nuclear complex. It was in Los Alamos during the "Project Y" years that scientists from Europe and the United States worked together to develop and test the first nuclear weapon, thus heralding the beginning of the "nuclear age."

Development of the first nuclear weapon also initiated the problems of what to do with the radioactive and hazardous waste generated by this Project. Although the dangers of acute radiation were known at that time, no one knew with any certainty what problems could be created if waste products were buried for long periods. Liquid waste also was disposed in a few of the canyons that drain the Pajarito Plateau where the town of Los Alamos is located.

Los Alamos National Laboratory and the town of Los Alamos are surrounded by the communities of Santa Fe, Española, and several smaller, predominantly Hispanic villages. A number of Indian Pueblos, the closest of which are San Ildefonso Pueblo, Santa Clara Pueblo, San Juan Pueblo and Cochiti Pueblo also are the Laboratory's neighbors.

The area surrounding the Laboratory is rich in Pueblo history. According to oral tradition, some of the Anasazi or "old ones" who inhabited Mesa Verde (in the four corners area of Colorado) migrated to Chaco Canyon. In the early 1200's, some of these inhabitants established themselves on the Pajarito Plateau. During the 1500's, many of the villages first established on the Plateau moved to the Pueblo villages that now are located along the Rio Grande.

Many archeological sites are located on the Pajarito Plateau and in the canyons. For instance, Bandelier National Monument contains several beautiful ruins that have been excavated and stabilized and are open to the public. Ceremonial rooms ("kivas"), the first "solar" dwellings, and Tiyuoni and Tsankawi villages are examples of what villages may have looked like in the 1300s. Artifacts can still be seen in many places on the plateau.

The area of the Pajarito Plateau occupied by the Laboratory contains many archeological sites, and over the years most of these sites have been documented and numbered. These sites range from simple field houses to large pueblo villages.

Because of the evidence of prehistoric pueblo habitation, several of the Pueblos consider the Pajarito Plateau their ancestral lands. Laboratory operations have affected the Pajarito Plateau, the surrounding communities, and particularly the Pueblo of San Ildefonso, whose western boundary adjoins the Laboratory land.

The Environmental Restoration (ER) Project at the Laboratory therefore, considered it important to establish a way for the Pueblos to become involved in the environmental restoration activities for the cleanup of the canyons that drain the Pajarito Plateau.

ER Project Goals

The ER Project was established at the Laboratory in 1989 in its present form and has as its goal to:

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- protect human health and the environment from exposure to releases of hazardous and mixed wastes from historical treatment, storage and disposal practices at the Laboratory.
- meet the environmental cleanup requirements of the Laboratory's permit to operate under the Resource, Conservation and Recovery Act (RCRA), specifically Module VIII (known as the Hazardous and Solid Waste Amendment (HSWA) Module, which governs the Environmental Restoration Project activities. The Environmental Protection Agency issued Module VIII in May, 1990 and modified it in May, 1994.
- perform these activities faster, better, and cheaper.

Regulatory Process

The ER Project follows a complex regulatory process for investigation and characterization activities.

1. The **RCRA facility investigation** identifies the nature and extent of contamination that could lead to exposure of human and environmental receptors. When the need is identified, the Laboratory will take voluntary corrective action (expedited cleanup), which is an option to accelerate a cleanup.
2. The **Corrective measures study** will evaluate cleanup alternatives to reduce risks to human and environmental health and safety in a cost-effective manner. This step will be taken if the investigation indicates that corrective measures are needed.
3. The **Corrective measures implementation** applies the chosen remedy, verifies its effectiveness, and establishes ongoing control and monitoring measures.

Laboratory Impact on the Pueblos

Many communities in the area surrounding Los Alamos (show a map of the Pueblo communities) are very concerned about the environmental

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impact past and current Laboratory operations have on their communities. Their main concerns are contamination of water, soil and air as well as the hazardous and radioactive wastes stored at the Laboratory site.

Environmental surveillance results show that contamination may have migrated off-site through the canyons of the Pajarito Plateau to the Rio Grande. San Ildefonso Pueblo and Cochiti Pueblo are located downstream from the canyons that drain the Los Alamos town site and Laboratory lands. Several other pueblos are also located downstream from the Laboratory. The Pueblos located upstream from the Laboratory indicated that contamination of air and worry about the contamination of the animals they hunt for food is a more important concern to them.

There are many canyons that drain the areas where Los Alamos and Laboratory property are located. To be able to characterize those canyons that are known or suspected to have received contamination, the ER Project needs to prepare RCRA Facility Investigation (RFI) work plans for approval by the Environmental Protection Agency (EPA). Once EPA approves the work plan, characterization activities can start for the specific areas identified in the work plan.

Interactions with San Ildefonso Pueblo

The first of the work plans to be developed for the Canyon Field Unit is the Los Alamos and Pueblo Canyons work plan. These canyons run through Laboratory and San Ildefonso Pueblo lands before joining the Rio Grande. (map). It seemed only courteous as well as sensible to invite the affected Pueblos to participate in the preparation of the first Canyon Field Unit work plan so cultural and religious concerns could be addressed at the time of writing.

The ER Project staff was invited to make a presentation to a meeting at San Ildefonso Pueblo in March, 1994. The Governor of San Ildefonso, a representative from Santa Clara Pueblo and several tribal members were favorably impressed by the presentation and the opportunity for the tribes to actively participate in activities that would so directly affect their Pueblos. In June the ER Project received a recommendation for a tribal member from San Ildefonso Pueblo to join the technical team for the

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Canyons. When the representative from San Ildefonso Pueblo joined the technical team in July 1994 ER Project staff were made aware of San Ildefonso's concerns about their environment and their religious and cultural issues and could immediately start incorporating those concerns into the work plan.

To enable our tribal representative to perform work in the field, he received all the appropriate radiological and waste operations training as well as training in safety operating procedures for specific sites.

The beginning of August 1994, ER Project staff met with the Governor and received permission to do an ecological survey of the part of Los Alamos Canyon that is on San Ildefonso Pueblo land. This was quite a breakthrough; not only could ER staff go directly on Pueblo land, but without that permission, the ER Project would have been able to only characterize Los Alamos Canyon to the Laboratory's boundary instead of to the Rio Grande. This would have created a considerable data gap between what contamination might be found on Laboratory land and found in the Rio Grande.

In September and the early part of October, the San Ildefonso Tribal Government gave permission to the Environmental Assessment/Resource Evaluation Group at the Laboratory to perform the first phase of the biological characterization activities for Los Alamos and Pueblo Canyons on San Ildefonso Pueblo land. The team members conducting the survey were accompanied by our tribal representative. The surveyed area borders the Rio Grande west of the Pueblo to Basalt Springs on the eastern boundary of the Laboratory.

The purpose of the survey was to identify habitat types and their potential for harboring threatened and endangered species.

The first phase of the biological survey consisted mainly of identification of different types of vegetation within the canyon area. Members of the biological survey team laid out seven vegetation transects consisting of a series of 20-x-50-cm quadrats. The canopy cover and diameter at breast height for trees over 3 ft high were measured in circular plots with a radius of 30 ft. The team sampled plant communities on the banks of the Rio Grande, on canyon slopes and in the bosques (wooded areas). Percentages of grass, forbs, and litter cover were determined for each

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quadrat. The team also identified different plant species and prepared herbarium specimens.

When the survey is completed, the team will have established a total of 10 to 15 transects which should yield a clear picture of the plant communities inhabiting the canyon. These transects will be monitored every five years and should provide San Ildefonso Pueblo with a clearer picture how the physical canyon environment is affected by Laboratory operations.

In addition, as part of the technical team for the Canyon Field Unit, our tribal representative needed to learn about the unique geological environment in Los Alamos, the distribution of the perched aquifers within this geological environment and the possible pathways which could be followed by contaminants.

Because his knowledge has proven to be so valuable to the ER Project, our tribal representative has also been involved in working with a different Field Unit. This field unit includes a canyon, Bayo Canyon, which adjoins San Ildefonso Pueblo lands and was used for testing high explosives with small quantities of radioactive materials. He has joined the Bayo Canyon field team to make them aware of the unique tribal cultural and religious concerns that exists in this part of the Laboratory lands.

These studies will be of great value to the Pueblo, and the data collected from the biological survey will be important information that the Pueblo will be able to use for their Environmental Program once it is fully established.

The Laboratory and the Pueblo of San Ildefonso signed a Memorandum of Understanding (MOU) in the early part of 1987. This MOU addresses some of the concerns of the Tribal Government and the pueblo community regarding contamination of air, water, soil, and ceremonial plants. Additional tribal concerns relate to possible contamination of the deer and elk population. The MOU establishes a formal process for sampling of soil, foodstuffs, air, and water at the Pueblo.

During the time the MOU was in effect, LANL environmental surveillance personnel would go down to the pueblo and take soil and water samples,

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and also sample food grown in vegetable gardens and sample cattle raised on the reservation. The Laboratory agreed to share the results with the Tribal Council members who would review the documentation.

In November 1994, the Laboratory signed Cooperative Agreements with three Pueblos, San Ildefonso, Jemez and Cochiti. These agreements were witnessed by Charles Curtis, Undersecretary for the Department of Energy. These Cooperative Agreements complement a 1992 Accord that exists between the Pueblos and the Department of Energy and promise to build confidence and trust and a cooperative working relationship between the Pueblos and the Laboratory. It also establishes a Los Alamos Pueblos Project that will carry out the purposes and objectives of the Cooperative Agreement.

This Cooperative Agreement formalizes the government-to-government relationship between the Pueblos and the Laboratory. All interactions between the ER Project and the Pueblos have to use these formal channels. The Tribal Government Liaison in the Stakeholder Involvement Office facilitates any activities for the ER Project with the Pueblos.

So far, the collaboration with San Ildefonso has very positively impacted the ER Project. We have been able to accomplish the following:

1. Started on development of a work plan detailing the investigation and characterization activities for Los Alamos/Pueblo Canyons to include San Ildefonso Pueblo land to the Rio Grande;
2. Established a positive working relationship with the Pueblo of San Ildefonso;
3. Raised ER Project and subcontractor staff's consciousness about the Pueblo's cultural and religious concerns;
4. Provided the opportunity for members of other neighboring Pueblos to participate in the ER Project;
5. Provided opportunities for training so we can have tribal members as part of field teams.

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A future goal of the ER Project in soliciting tribal participation is to train field personnel in characterization activities. This will include attending classes as well as on-the-job training. This will enable tribal members to become part of the environmental programs the Pueblos are developing. It is envisioned that the Laboratory technical staff and the Pueblos' environmental staff can work together on splitting samples. The Pueblos can also assist the Laboratory in sampling in areas on tribal land that are off-limits to non-tribal members.

This goal also includes providing the opportunity for more participation by Native American students from neighboring pueblos on field teams.

The Pueblo of San Ildefonso has benefited from the more open and positive relationship with the ER Project and the Laboratory. In addition, the Pueblo is appreciative of the economical benefit of employment at the Laboratory. The Governor now has designed an environmental representative for the San Ildefonso Pueblo who regularly attends meetings for the Canyons' technical team.

Several other Pueblos who have heard about the ER Project's initiative have indicated an interest in the ER Project's work on the canyons. Hopefully, the Laboratory will be able to accommodate their participation in the future.

The ultimate success of this initiative will be measured by whether the Pueblos are confident that the chosen cleanup remedy for the canyons is the most beneficial for their people. For the Laboratory's ER Project, the ultimate success will be that the cleanup has happened faster, better and cheaper and that we have developed a mutually trusting, respectful relationship with the Pueblos.

Acknowledgments: This partnership with San Ildefonso Pueblo would not have been possible without the assistance of the Tribal Government liaison in the Stakeholder Involvement Office at the Laboratory. Gilbert Suazo was instrumental in providing access to the tribal leadership and made us aware of the unique government to government relationship the Laboratory has with our Pueblo neighbors.

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Without Everett Springer's and Pat Longmire's (LANL) vision and support, this partnership effort might not have come to fruition. Both of them as well as Allyn Pratt (LANL) continue to provide their support and technical knowledge to our Pueblo neighbors.

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