



**Los Alamos**  
NATIONAL LABORATORY

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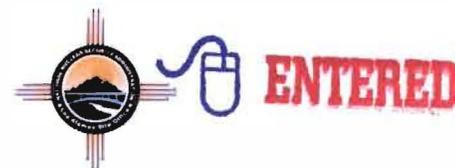
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Date: September 29, 2009

Refer To: EP2009-0494

James Bearzi, Bureau Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505-6303

**Subject: Submittal of the Completion Documentation for Construction of Three Cross-Vane Structures in Pueblo Canyon**

Dear Mr. Bearzi:

Enclosed please find two hard copies with electronic files of the Completion Documentation for Construction of Three Cross-Vane Structures in Pueblo Canyon. Submittal of this completion documentation fulfills a requirement in the New Mexico Environment Department's Approval with Modifications letter dated February 20, 2009, to document completion of the cross-vane structures by October 1, 2009.

If you have any questions, please contact Danny Katzman at (505) 667-6333 (katzman@lanl.gov) or Nancy Werdel at (505) 665-3619 (nwerdel@doeal.gov).

Sincerely,

Sincerely,

*B. G. Schuppel for MSG.*  
Michael J. Graham, Associate Director  
Environmental Programs  
Los Alamos National Laboratory

*David R. Gregory*  
David R. Gregory, Project Director  
Environmental Operations  
Los Alamos Site Office



MG/DG/PH/DK:sm

Enclosures: Two hard copies with electronic files – Completion Documentation for Construction of Three Cross-Vane Structures in Pueblo Canyon (LA-UR-09-6173)

Cy: (w/enc.)  
Neil Weber, San Ildefonso Pueblo  
Nancy Werdel, DOE-LASO, MS A316  
Danny Katzman, EP-LWSP, MS M992  
RPF, MS M707 (with two CDs)  
Public Reading Room, MS M992

Cy: (Letter and CD and/or DVD only)  
Laurie King, EPA Region 6, Dallas, TX  
Steve Yanicak, NMED-DOE-OB, MS M894  
Kristine Smeltz, EP-WES, MS M992

Cy: (w/o enc.)  
Tom Skibitski, NMED-OB, Santa Fe, NM  
Keyana DeAguero, DOE-LASO (date-stamped letter emailed)  
Michael J. Graham, ADEP, MS M991  
Alison M. Dorries, EP-WES, MS M992  
Paul Huber, EP-LWSP, MS M992  
IRM-RMMSO, MS A150 (date-stamped letter emailed)

## **Completion Documentation for Construction of Three Cross-Vane Structures in Pueblo Canyon**

The project to construct three cross-vane structures in Pueblo Canyon has been completed. The following discussion documents the construction of the cross-vane structures.

### **Construction**

The cross-vane structures were constructed between September 11 and 14, 2009, at the locations described in the "Supplemental Interim Measures Work Plan to Mitigate Contaminated Sediment Transport in Los Alamos and Pueblo Canyons". The channel distance between the upper and lower of the three structures is 0.8 km (0.5 mi).

The cross-vane structures were constructed in accordance with the conceptual design submitted to NMED on June 29, 2009, and approved by NMED on August 11, 2009. Each of the three cross-vane structures consists of rocks buried in the channel in a "V-shaped" configuration with rocks set adjacent to each other. The apex rock of each structure is set lowest into the channel with a height approximately 20 in. above the channel bed. The downstream rocks are keyed into the channel bank. The top of the buried rocks form a slope of approximately 3% from the apex to the downstream rocks at the channel banks.

Sediments within the channel that were disturbed for placement of rocks were spread along the up-channel and down-channel faces of the rocks. It is anticipated that initial flows through these structures will establish a stable condition around the structures.

The sites of these cross-vane structures will be monitored and cross-vane configurations, stabilization features, or other aspects will be adapted as necessary. Monitoring of these structures will be conducted in accordance with the monitoring plan for Los Alamos and Pueblo Canyons due to the New Mexico Environment Department on October 15, 2009.

Figures 1a and 1b show the western (upcanyon) structure. Figures 2a and 2b show the middle structure. Figures 3a and 3b show the eastern (downcanyon) structure.



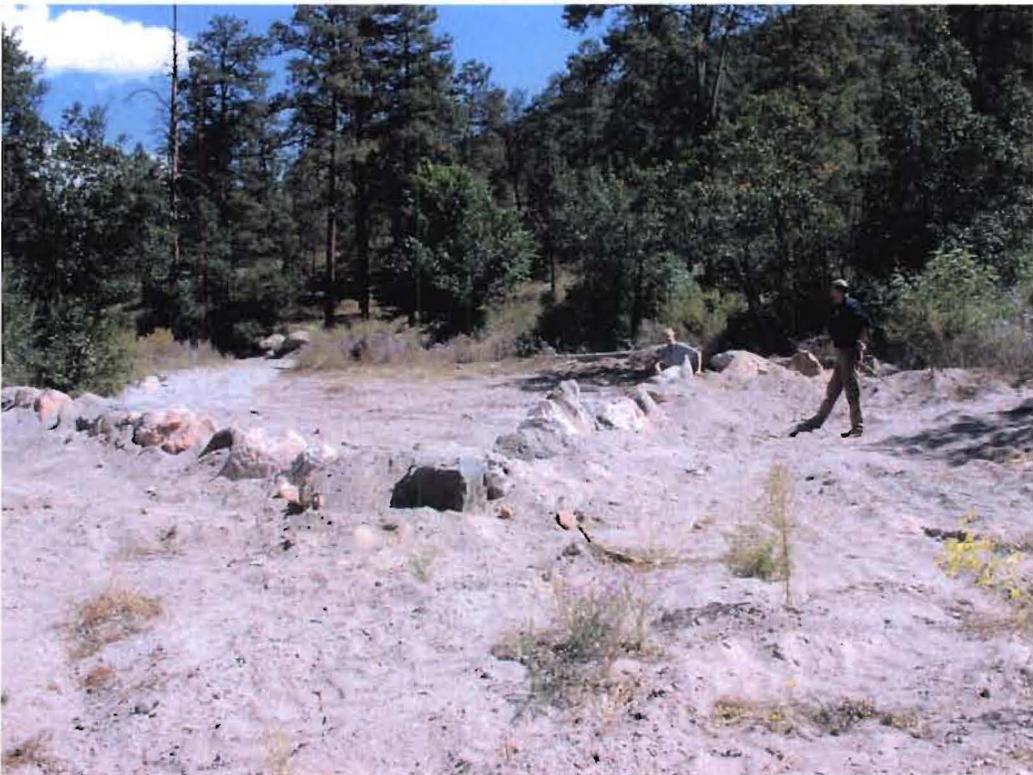
**Figure 1a** View of upper cross-vane structure looking north across the Pueblo Canyon channel



**Figure 1b** Downcanyon view of the upper cross-vane structure



**Figure 2a** Upcanyon view of the middle cross-vane structure



**Figure 2b** View looking downcanyon at the middle cross-vane structure



**Figure 3a** View looking north across the lower cross-vane structure showing rehabilitation of access road



**Figure 3b** View looking upcanyon at the lower cross-vane structure