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ENTERED



NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 3, 2009

David Gregory, Federal Project Director
Department of Energy
Los Alamos Site Office
3747 West Jemez, Mail Stop A316
Los Alamos, New Mexico, 87544

David McInroy
Remediation Services Deputy Director
Los Alamos National Security, LLC
P.O. Box 1663, Mail Stop J591
Los Alamos, New Mexico 87545

**RE: DIRECTION TO CORRECT
CROSS-VANE STRUCTURES IN PUEBLO CANYON
LOS ALAMOS NATIONAL LABORATORY
EPA ID# NM0890010515
LANL-HWB-08-047**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the Los Alamos National Security, L.L.C. and U.S. Department of Energy (collectively, the Permittees) document entitled *Submittal of the Completion Documentation for Construction of Three Cross-Vane Structures in Pueblo Canyon* (Documentation) dated September 29, 2009 and referenced by EP2009-0494. Construction of the cross-vane structures is required by NMED's *Approval with Modifications Supplemental Interim Measure Work Plan (SIWP) to Mitigate Contaminated Sediment Transport in Los Alamos and Pueblo Canyons* dated February 20, 2009.

NMED representatives met on-site with the Permittees on October 29, 2009 to inspect the design and the performance of the cross-vane structures. NMED observed evidence of erosion and incorrect installation. The structures are therefore likely not performing as anticipated or required. NMED hereby directs the Permittees to modify, repair, and otherwise correct the cross-vane structures to fully comply with the aforementioned approval and NMED's *Approval of Design for Installation of Cross Vane Structures Pueblo Canyon Stream Channel* dated August 11, 2009.

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Specifically, the Permittees must implement the following modifications to the structures:

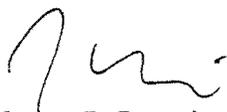
1. Each structure must be modified to comply with the design requirements specified in Item 3 of NMED's February 20, 2009 letter, specifically with regard to the upward taper of the top surface of the structures from their mid-channel points to the stream banks. The top surface of the structures at the stream banks must be positioned at bank full elevation and the rocks at the point of each structure must be at the elevation of the existing stream bed.
2. In plan view, the structures must extend into the stream channel at approximately 30 degree angles from the banks to the upstream point of each structure. The structures must be keyed into the stream banks to a distance equivalent to approximately two times the diameter of the rocks comprising the main structure.
3. The upstream point of each structure must be near the channel center and the structures must be oriented to direct flows toward the existing active channel. The structures must be keyed into the stream banks such that water flow velocities are reduced adjacent to the structures in the vicinity of the stream banks, resulting in direction of water pooled upstream behind the structures toward the center of the stream channel.
4. The variation in the elevation of the top surface of the rocks forming each structure must be reduced to less than one foot, and the distance from the top of the rocks to the point where they come in contact with adjacent rocks must be minimized. Additional rocks may be placed on the upstream side of the structures to fill in gaps in order to prevent erosion and the development of scour channels between the large rocks comprising each structure.

The Permittees must correct the emplacement and construction of the three cross-vane structures and provide revised Documentation that incorporates the completed modifications. The revised Documentation must include as-built drawings that depict the dimensions and elevations of the structures, adjacent streambed and stream banks, and photographs of the modified structures. The corrections to the structures must be completed by January 31, 2010. The revised Documentation must be submitted to NMED by February 28, 2010.

Messrs. Gregory and McInroy
December 3, 2009
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Please contact Dave Cobrain of my staff at (505) 476-6055 if you have questions.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:dc

cc: D. Cobrain, NMED HWB
K. Roberts, NMED HWB
T. Skibitski, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
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file: Reading and [REDACTED] (Los Alamos and Pueblo Canyons, Surface Water)