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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 18, 2008

David Gregory, Federal Project Director
Department of Energy
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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: APPROVAL WITH MODIFICATIONS
INTERIM MEASURE WORK PLAN TO MITIGATE CONTAMINATED SEDIMENT TRANSPORT IN LOS ALAMOS AND PUEBLO CANYONS
LOS ALAMOS NATIONAL LABORATORY
EPA ID# NM0890010515
LANL-HWB-08-004

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 (the Permittees) document entitled *Interim Measure Work Plan to Mitigate Contaminated Sediment Transport in Los Alamos and Pueblo Canyons* dated February, 2008 and referenced by LA-UR-08-071/EP2008-0084 (IM Plan). NMED hereby issues this Approval of the IM Plan with the following comments and modifications:

1. **Page 1, Section 2.0, Regulatory Context**
   The actions required by NMED correspondence are intended to address documented transport of polychlorinated biphenyls (PCBs) at concentrations exceeding water quality cleanup criteria (20.6.4 NMAC) by up to five orders of magnitude in storm water. Section VII.C of the March 1, 2005 Order on Consent (Order) requires the Permittees to demonstrate compliance with the surface water quality standards outlined in the Clean Water Act (33 U.S.C. §§ 1251 to 1387), the New Mexico WQCC Regulations (20.6.2 NMAC) and the State

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of New Mexico Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC). The Permittees have not demonstrated such compliance.

2. **Page 2, Section 2.2.1, Consent Order**
The Permittees state that "contaminated sediments pose no current unacceptable risk to human health or the environment within the Los Alamos and Pueblo watershed, although continued migration of contaminated sediment occurs within the watershed during storm water runoff events." This statement is contradicted by storm water quality data in NMED's administrative record. Although the Interim Measure (IM) watershed approach proposed by the Permittees addresses some issues related to sediment and contaminant transport in Los Alamos and Pueblo Canyons, other measures may be required to control contaminant migration based on the performance of the proposed interim measures in the IM Plan and the additional actions required by NMED in this letter.

3. **Page 3, Section 3.1 Sources and Current Distribution of Polychlorinated Biphenyls (PCBs)**
NMED has acquired data indicating that the drainage associated with storm water management area LA-SMA-2 is a source of PCB contamination. The Permittees must submit a work plan that proposes interim measures for LA-SMA-2 and the associated source area (SMWU-01-001(f) that includes Hillside 140 and the related drainage) to control contaminant migration from LA-SMA-2 into the main Los Alamos Canyon stream channel. The work plan must a provide a discussion of analytical results from previous sampling and monitoring of sediments and surface water at storm water management area LA-SMA-2, a discussion of the contaminant source(s), and provide detailed plans to mitigate contaminant migration including source and inventory removal and diversion and control of storm water run-on and run-off at the site.

4. **Page 7-10, Sections 4.1 through 4.5 Proposed Actions**
In addition to the actions listed in Sections 4.1 through 4.5 of the IM Plan, the Permittees must provide the following as part of a supplemental IM Plan:

   a) A detailed design of the installation of a grade control structure to be constructed at the east end of Reach DP-2 in DP Canyon to reduce flow velocities during flood events resulting from storm water drainage to DP Canyon. The structure must be capable of reducing flow rates to levels that will result in a decrease in surface water contaminant concentrations to less than the surface water quality standards included in Order Section VIII.C.1. The Permittees may combine or add other controls to achieve this performance standard. The structure must also be designed to enhance sediment accumulation in the channel and flood plain in Reach DP-2.

   b) A detailed design and proposed locations for three cross vane structures consisting of rock barriers similar to those defined on pages 8-20 to 8-22 of "*Applied River Morphology*" (Rosgen, 1996) set in the Pueblo Canyon channel between the confluences of Graduation and Kwage Canyons with Pueblo Canyon to reduce flow rates and

suspended sediment concentrations, decrease erosion rates, and enhance sediment deposition in Pueblo Canyon.

c) A detailed design and proposed location of a cross vane structure consisting of a rock barrier similar to those defined on pages 8-20 to 8-22 of "*Applied River Morphology*" (Rosgen, 1996) set in the Pueblo Canyon channel downstream of the confluence of Acid Canyon and Pueblo Canyon in the vicinity of the location where the Los Alamos County sewer line is exposed in the Pueblo Canyon stream channel.

d) A detailed design and proposed location of a pilot wing ditch at the west end of Pueblo Canyon Reach P-4W to divert water to the flood plain and decrease surface water flow velocities in the vicinity of the observed head cut in the stream channel. Alternately, the Permittees may propose to construct two or more check dams to reduce flow velocities and enhance sediment accumulation rates at the west end of Reach P-4W.

5. Page 10, Section 5.0, Monitoring

The Permittees must submit a monitoring plan that describes the methods and frequency of monitoring the effectiveness of all of the Interim Measures to achieve the surface water quality standards and also to reduce erosion rates and enhance sedimentation rates in Los Alamos and Pueblo Canyons. The monitoring plan must include monitoring flow rates and sampling at Reach DP-2 in DP Canyon, LA-SMA-2, surface water monitoring stations E042 and E050 in Los Alamos Canyon, monitoring station E060 (at its new location) in Pueblo Canyon as well as at locations appropriate to monitor all other measures implemented to reduce contaminant transport within the Los Alamos and Pueblo Canyon watersheds. The plan must also propose methods to measure the progress of sediment accumulation in Los Alamos and Pueblo Canyons at locations where interim measures are implemented to enhance channel bank stabilization and wetland aggradation.

6. Schedule for Submittals

The schedule for submittals required by this letter is listed below.

The Permittees propose to submit a status report, referred to as an Initial Interim Measure Report in IM Plan Section 6.0, by January 31, 2009 that will include documentation of the completion of: 1) excavation of sediment from the sediment retention basin located at the Los Alamos Canyon low-head weir; 2) planting of willows in Pueblo Canyon; 3) installation of jute matting in Acid, South Fork Acid and DP Canyons; 4) installation of a new monitoring (gaging) station in Pueblo Canyon west of the Los Alamos Waste Water Treatment Plant; 5) upgrading of monitoring stations E042 and E050 in Los Alamos Canyon; 6) construction of a pilot wing ditch in the Pueblo Canyon wetland at the west end of Reach P-3E; and 7) completion of the engineering design of a grade control structure located in Pueblo Canyon in the vicinity of the intersection between New Mexico Highways 4 and 502.

NMED concurs with the proposed schedule with the following changes and additions.

a) The Permittees must collect characterization samples from the sediments proposed to be excavated from the retention basin at the Los Alamos Canyon low-head weir at a distance of approximately 25 and 75 feet from the weir. One sample from each location must be collected from the finest grained materials deposited during the five largest depositional events that have accumulated at the low-head weir since its construction. The samples from each depositional event must be analyzed for all analytes required for proper disposal of the materials should such a need be identified. The results of the analyses must be submitted to NMED no later than 30 days prior to excavation of any materials from behind the low-head weir as part of a request for a determination on whether the materials may be disposed on- or off-site. The request must be submitted to NMED no later than **October 17, 2008**.

b) The Permittees must submit the supplemental Interim Measures Work Plan, referenced in Item 4 above, that includes a detailed preliminary design for the grade control structures in DP Canyon and in Pueblo Canyon in the vicinity of the intersection between New Mexico highways 4 and 502, the cross vane structures in Pueblo Canyon and the pilot wing ditch referenced in Item 4 of this letter no later than **October 17, 2008**. The preliminary design of each structure must provide sufficient detail such that a contractor will be able to provide a final design that includes completion of construction within 210 days after NMED approval of the preliminary design

c) The Permittees must submit the work plan for surface water management area LA-SMA-2 required by Item 3 above to NMED no later than **November 3, 2008**.

d) The Permittees must submit the status report referenced above no later than **March 31, 2009**, rather than January 31, 2009.

The Permittees must limit the use of jute matting in Acid and DP canyons to slopes less than 15 degrees from horizontal and use hard armoring for slopes greater than 15 degrees to prevent erosion. The Permittees must continue to monitor surface water monitoring station E060 at its present location until a replacement monitoring station becomes operational

Finally, the Permittees must submit the monitoring plan required by Item 5 above to NMED no later than **May 1, 2009**.

Please contact Dave Cobrain of my staff at (505) 476-6055 if you have questions regarding this Approval with direction.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:dc

cc: D. Cobrain, NMED HWB
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