Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: March 12, 2001
In Reply Refer To: ESH-18/WQ&H:01-071
Mail Stop: K497
Telephone: (505) 665-1859

HSWA LANL GIP 2001

Mr. John Young, Program Manager
Hazardous Waste Bureau
N.M. Environment Department
2044 Galisteo Street
Santa Fe, NM 87505

SUBJECT: FLOOD FLOW MODELING AND FLOOD PLAIN MAPPING ACTIVITIES IN SUPPORT OF THE LABORATORY'S RCRA PERMIT

Dear: Mr. Young:

This letter is being provided in order to update you on the status of flood flow modeling and flood plain mapping activities which are being conducted in support of the Laboratory's Resource, Conservation and Recovery Act (RCRA) Permit Application.

As you know from previous discussions, the Laboratory initiated a new flood flow modeling effort following the Cerro Grande Fire in May, 2000, based upon HEC-1 and HEC-RAS models developed by the U.S. Army Corps of Engineers. These models were used by the Laboratory to develop the original flood flows and surface water elevations as described in a Laboratory publication entitled "Determination of 100-Year Floodplain Elevations at Los Alamos National Laboratory", by Stephen G. McLin dated August, 1992 (LA-12195-MS). This publication was previously used to support the Laboratory's RCRA Permit and is scheduled to be revised and updated to reflect current conditions and improvements to the model.

Since the Cerro Grande Fire, significant changes have been incorporated into these models. Increased curve numbers, based upon changes in vegetation cover and soil infiltration rates, were selected to reflect the increased runoff potential from burned areas above and within the Laboratory. The resulting new model simulations for Pueblo, Los Alamos, Pajarito, Valle and Water Canyons, and last year's storm events suggest that post-fire flood flows and surface water elevations will be significantly greater than those previously reported in 1992. Significant improvements to the model including more accurate cross-sectional elevations of the watercourses also have enhanced the model simulations since the original work was reported in 1992.

Over the next three to five years, burned areas above and within the Laboratory are expected to recover and flood flows should return to pre-fire conditions. It is anticipated that flood flow simulations and flood plain maps for the six-hour 100-year flood conditions without burned area recovery will be available by September 30, 2001. A revised report describing these changes also will be available September 30, 2001. As recovery of these watersheds progresses, additional simulations and flood plain maps will be generated as required to support the Laboratory's RCRA Permit.

15909

TC

Please advise if you desire additional information related to Laboratory's flood flow modeling and flood plain mapping activities at this time. Members of the Laboratory's Flood Flow and Sediment Transport Modeling Team are available to meet with you and your staff if such would be helpful. Please call Steven Rae at 665-1859 if you have any questions or would like me to arrange a meeting.

Sincerely,

James L. White
Hazardous and Solid Waste Group

Sincerely,

Steven Rae
Water Quality and Hydrology Group

SR/sc

Cy: James Bearzi, NMED/HWB, Santa Fe, NM
John Paker, NMED/HWB, Santa Fe, NM
Steve Yanicak, NMED/DOE/OB, MS J993
Michael Dale, NMED/DOE/OB/, MS J993
Dennis J. Erickson, ESH-DO, MS K491
Lee McAtee, ESH-DO, MS K491
Alice Barr, ESH-19, MS K498
Jack Ellvinger, ESH-19, MS K490
Julie Canepa, ER Project, MS M992
David McInroy, ER Project, MS 992
Joe Vozella, DOE/LAAO, MS A316
Gene Turner, DOE/LAAO, MS A316
Mat Johansen, DOE/LAAO, MS A316
WQ&H File, MS K497
IM-5, MS A150