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**RETURN RECEIPT REQUESTED**

April 15, 2003

Mr. G. Pete Nanos, Interim Director  
Los Alamos National Laboratory  
P.O. Box 1663, Mail Stop A100  
Los Alamos, New Mexico 87545

Mr. Mat Johansen, Groundwater Program  
Compliance Manager  
DOE-OLASO  
Mail Stop A316  
Los Alamos, New Mexico 87544

**SUBJECT: COMMENTS ON HYDROLOGIC TESTING IN CHARACTERIZATION WELLS AT LOS ALAMOS NATIONAL LABORATORY  
EPA ID# NM0890010515**

Dear Mr. Nanos and Mr. Johansen:

The New Mexico Environment Department (NMED) Hazardous Waste Bureau has reviewed Los Alamos National Laboratory's (LANL) March 2003 report, "Hydrologic Tests at Characterization Wells R-9i, R-13, R-19, R-22, and R-31" (LA-13987-MS) and has the following general comments regarding the recommendations and conclusions contained in the report.

NMED agrees in principle with the objectives of LANL's hydrologic testing program and with its usefulness in determining the hydraulic properties of the geologic materials beneath the Pajarito Plateau and in refining the Laboratory's regional flow and transport model. NMED disagrees with the report's recommendation to avoid placing screens across the water table. The authors are reminded that NMED requires wells to be screened across the top of the regional aquifer for contaminant detection. The intent of the well drilling program at LANL is to install RCRA-compliant (Resource Conservation and Recovery Act) wells that provide accurate and defensible characterization information and facilitate detection of any potential contaminants. Hydrologic testing is a secondary objective when designing the wells.

The report accurately states that ideal hydrologic test conditions occur when a well fully penetrates the thickness of an aquifer and that short single-screen completions and multi-screen



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completions represent only partial penetration. NMED reiterates that the primary purpose of the wells is RCRA characterization and contaminant detection. Consequently, short single screens and multiple screens, if there are multiple zones of groundwater within a well, are appropriate and justified for the regional aquifer wells being installed at LANL.

NMED agrees with several of the report's recommendations regarding well design, including avoiding placing screens across geologic contacts and avoiding excessive filter pack intervals. NMED is concerned about wells with screens placed across hydrostratigraphic contacts and the possibility of correspondence between separated zones of saturation. NMED agrees that excessive filter packs impede both water-quality sampling and hydrologic testing and notes that there is an increased potential for adverse consequences from improperly designed wells and cross-contamination between saturated zones.

NMED further agrees with report's conclusion that tests should be repeated and verified with other testing methods to the extent feasible, since the data is used to develop and refine the conceptual model. However, as stated in the December 14, 2001 letter from NMED to LANL, NMED does not consider slug tests to be an acceptable aquifer testing method at this time. Introducing water into a well has the potential to affect groundwater chemistry, and there is considerable uncertainty associated with the complete removal of the introduced water. NMED believes that the recommendation to focus testing on the selected hydrostratigraphic units that have sparse data is reasonable and may provide LANL with the most useful information for improving its model. However, hydrologic testing needs must not determine the placement of screens in wells.

If you have any questions regarding these comments, please contact Ms. Carolyn Cooper of my staff at (505) 428-2539.

Sincerely,



John Young  
LANL Corrective Action Project Leader  
Permits Management Program

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