

General

**State of New Mexico
ENVIRONMENT DEPARTMENT**



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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

June 24, 2005

Mat Johansen, Groundwater Project Manager
Department of Energy-Los Alamos Site Office
Mail Stop A316
Los Alamos, NM 87544

G. Pete Nanos, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, NM 87545

**RE: RESPONSE TO DRILLING SCOPE FOR CALANDER YEAR 2005
LOS ALAMOS NATIONAL LABORATORY
EPA ID No: NM0890010515**

Dear Messrs. Johansen and Nanos:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy and Regents of the University of California (collectively the Permittees) letter entitled *Drilling Scope for Calendar Year 2005*. NMED has reviewed the proposed well construction and well decommissioning activities and hereby approves the document with the modifications outlined in this letter. If the Permittees fail to implement the required modifications, the approval for this document will automatically be rescinded.

NMED approves the sequence of proposed wells for 2005 that include the regional wells, R-3, R-16A, R-17, R-24, R-27, R-10A, R-16A and the intermediate wells LAOI-3.2a, LAOI-7, LADP-5 and CDV-16-3(i)r. However, based on the results of the information acquired during the 2005 well installations, other groundwater sampling and monitoring activities, potentially including the installation of additional wells, may be required by NMED. This may include replacing well TW-2A.



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NMED understands the information in Attachment 1 is an overview of the data to be collected from each well; however, NMED requires that the Permittees provide more detailed information outlining well drilling methods and data collection procedures. Each submittal must be received by NMED a minimum of 30 days prior to drilling each well. The more detailed drilling work plan shall describe the methods and procedures for characterization. The work plans shall also include a schedule of well drilling and completion activities (e.g., well development and first sampling round). All activities must be conducted in accordance with applicable Order requirements. Drilling methods shall be selected based on the objectives specific to each well and in accordance with Order Section X. Although not preferred, if drilling fluids are used, their use shall be minimized. The selection of drilling fluids shall also be based on the following minimum criteria: ease of removal and the least detriment to the aquifer and groundwater chemistry.

The Permittees shall sample TW-1, TW-1A, TW-3 and TW-4 before they are plugged and abandoned. In order to monitor the regional aquifer at O-4, NMED recommends TW-3 be replaced with a deep multiple-screened or multi-port monitoring well in addition to being plugged and abandoned. Also, in the case of TW-3, it must not be plugged until all useful hydrogeologic and contaminant characterization activities are completed. These characterization activities will provide valuable information on the regional aquifer. For example, NMED recommends a tracer test between TW-3 and the replacement well and/or a pump test utilizing O-4 and TW-3 and the replacement well. The current test wells can still provide valuable information on hydrologic characteristics and contaminant transport between wells and NMED strongly recommends taking advantage of conducting tests using these wells before they are plugged and abandoned. Additionally, NMED recommends completing a tracer test and/or pump test utilizing wells POI-4 and TW-1A as these tests will provide relevant information on groundwater flow characteristics within the basalts.

The Permittees shall assess the information from core collected from the nearby intermediate well POI-4 prior to coring R-3. The Permittees must provide a more detailed written statement in a future work plan as to how perchlorate characterization will be addressed in well O-1 by drilling R-3. For example, discuss how the depth(s) of the perchlorate contamination and other contaminants will be discerned.

The Permittees must be consistent with the types of contaminant analyses performed on the core for wells such as R-17 and R-27. In LAOI-3.2a, the Permittees shall evaluate the presence and distribution of contaminants in the weathered and non-weathered tuff just below the saturated alluvium. The Permittees must propose an analytical suite for soil/sediment and groundwater for each well in the previously mentioned work plans.

Messrs. Johansen and Naves

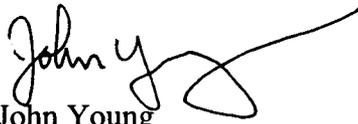
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NMED understands that the Permittees want to move the location of R-17 from a previously agreed upon location to a different location. NMED requires R-17 to be located near the axis of Parajito Canyon approximately $\frac{1}{4}$ mile downstream of the flood retention structure in order to increase the likelihood of encountering perched intermediate groundwater which is the primary purpose for installing this well. The Permittees must provide more detail as to the data needs from each well and the methods for collecting information in the subsequent work plan. To insure that well development is adequate to remove drilling fluids that have been used, an accurate inventory of the fluids used and removed must be documented. Furthermore, several borings should penetrate the regional aquifer at a deeper interval to provide information regarding deeper levels of the Regional aquifer that were not addressed by the Hydrogeologic Work Plan investigations.

Please contact me at (505) 428-2538 to discuss proposed well locations and depths or if you have any other questions.

Sincerely,



John Young
LANL Corrective Action Project Leader
Permits Management Program

cc: J. Kieling, NMED HWB
L. Trevizo, NMED HWB
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file: Reading and LANL (Groundwater, HWP)

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