



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

General



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
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: REVIEW OF PILOT GEOPHYSICAL STUDIES IN MORTANDAD CANYON
LOS ALAMOS NATIONAL LABORATORY
EPA ID# NM0890010515

Dear Mr. Nanos and Mr. Johansen:

The New Mexico Environment Department (NMED) Hazardous Waste Bureau has reviewed the March 2003 report, "Pilot Geophysical Studies in Mortandad Canyon -- Los Alamos National Laboratory, Los Alamos County, NM." Geophex, Ltd. prepared the report for the Department of Energy (DOE). Geophex and DOE staff gave a brief presentation to NMED on September 26, 2002 with the preliminary results of the DC resistivity and seismic reflection surveys that were performed in Mortandad Canyon during May and June 2002.

NMED is interested in both the results and the potential utility of these geophysical tests and takes into account DOE's cautionary note to exercise care in interpreting the results. NMED encourages DOE and Los Alamos National Laboratory (the Permittees) to perform subsurface investigations, including drilling boreholes and installing piezometers and monitoring wells, to correlate the results from the geophysical surveys with actual field data and in-situ well data. We agree that the test results may be useful in developing the Groundwater Work Plan for Mortandad Canyon and in selecting locations that may have a greater potential to contain alluvial or perched intermediate groundwater. NMED further encourages the Permittees to continue exploring activities that may increase the efficiency and cost effectiveness of the drilling program at the Laboratory.



13776

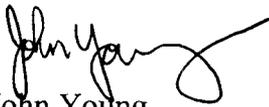
Mr. Nanos and Mr. Johansen
April 15, 2003
Page 2

It is NMED's understanding that additional geophysical surveys may be conducted, possibly in Los Alamos, Pueblo, and DP Canyons. NMED recommends that the contractors should be "blind" to the locations and depths where groundwater is known to be present when the data from the surveys is being processed. Additionally, a clarification of the data processing procedure described as "editing any outlying data points" (Section 3.0) would help explain the reasons for eliminating data from the data set. NMED understands that data with poor quality should not be included in the results; however, a discussion of why the data is considered to be of poor quality, and not usable, should be provided.

The interpretations detailed in the report seem reasonable and appropriate. Plate 2 (2-D, Dipole-Dipole Resistivity) appears to show some relation between the locations that contain known zones of shallow groundwater and the areas of low resistivity (the inferred "moist" zones). Although the resistivity data provide acceptable resolution to only 200 feet depth, the combined seismic, resistivity, and in-situ results on Plate 4 (Interpreted Section with Line 1 Resistivity Overlay) look promising. Therefore, we reiterate the importance in carrying out subsurface exploration to compare the geophysical results with field data. Additionally, the interpretation in Section 4.0 that the "moist" zones may indicate preferential groundwater flow pathways during a recharge event is interesting and worth further investigation.

We suggest that additional geophysical techniques, such as the resistivity methods employed at Technical Area-16, be further evaluated to potentially provide more efficient, cost effective placement of characterization and monitoring 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

Mr. Nanos and Mr. Johansen

April 15, 2003

Page 3

Cc: C. Cooper, NMED HWB
D. Cobrain, NMED HWB
J. Parker, NMED DOE-OB
S. Yanicak, NMED DOE-OB, MS J993
M. Leavitt, NMED GWQB
L. King, EPA, 6PD-N
D. Gregory, DOE OLASO, MS A316
J. Vozella, DOE OLASO, MS A316
B. Ramsey, LANL, RRES-DO, MS J591
D. Stavert, LANL, RRES-DO, MS J591
N. Quintana, LANL, RRES-ER, MS M992
C. Nylander, RRES-WQH, MS K497

File: Reading and ~~LANL HWT~~ (General)