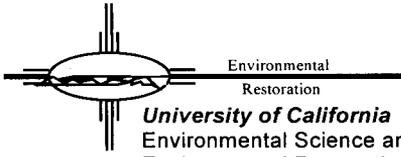


HSWA LANL G/M/HWP/99 [R-97]



Environmental Restoration  
**University of California**  
Environmental Science and Waste Technology (E)  
Environmental Restoration, MS M992  
Los Alamos, New Mexico 87545  
505-667-0808/FAX 505-665-4747



**U.S. Department of Energy**  
Los Alamos Area Office, MS A316  
Environmental Restoration Program  
Los Alamos, New Mexico 87544  
505-667-7203/FAX 505-665-4504



Date: October 19, 1999  
Refer to: E/ER:99-300

Mr. John Kieling  
NMED-HRMB  
P.O. Box 26110  
Santa Fe, NM 87502

**SUBJECT: COMPLETION STRATEGY FOR WELL R-9**

Dear Mr. Kieling:

The purpose of this letter is to document conversations the ER Project staff had with you during the External Advisory Group (EAG) meeting in Los Alamos on October 14 and with Mr. Bearzi at the EAG Meeting with senior Laboratory management and New Mexico Environment Department (NMED) on October 15. During those meetings we discussed alternative methods of completing the R-9 well due to unexpected problems while extracting the casings.

Borehole R-9, located in Los Alamos Canyon near the eastern Laboratory boundary, is currently being completed as a well for characterizing groundwater in the regional aquifer as part of the Hydrogeologic Workplan. Depth to the regional aquifer is 688 ft in this area. During the well completion operations, we encountered problems extracting one of the drill casings while placing backfill material in the annular space around the 5-in well casing. The 5-in well casing has become locked to the 10-in well casing, and our attempts to decouple them have been unsuccessful. The well is not damaged, but further attempts to pull back on the 10-in drill casing may cause severe damage to the well completion string. Our options are rather limited at this point, and we believe the best course of action is to cement in place the 10-in casing and the two other remaining drill casings rather than risk losing the well.

At total depth the R-9 borehole contained four telescoped drill casings with diameters of 14-in, 12-in, 10-in, and 8-in. During backfilling operations, the 8-in well casing was successfully pulled back in increments while annular materials were placed around the well with a tremie line. The 8-in casing was completely removed from the borehole and the annular backfill materials are currently at a depth of 450 ft, 30 feet below the bottom of the 10-in drill casing. We believe 238 ft of annular materials between the top of the regional aquifer and the bottom of the 10-in casing and the two uppermost drill casings that currently seal off two perched groundwater zones provide adequate protection of the regional aquifer from perched groundwater in the vadose zone. Nonetheless, we will

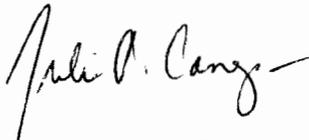
TK



pressure inject cement into the annular space between the 14-in and 12-in casings and between the 12-in and 10-in casings to further isolate the perched water zones in the upper part of the borehole. The final step in the well completion will be to pour cement inside the 10-in casing, sealing in the well casing.

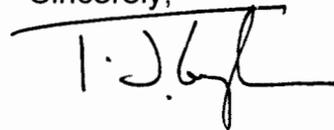
Per the agreement reached with Mr. Bearzi on October 15, the ER Project has begun to implement the backfilling strategy outlined above. Once this protective and technically sound backfilling strategy has been successfully implemented and the well has been properly developed, we agree with Mr. Bearzi that the R-9 well will produce Resource Conservation and Recovery Act compliant water samples and our ability to achieve the data quality objectives of the Hydrogeologic Workplan will be achieved. We thank the NMED for their cooperation and quick response in resolving this matter.

Sincerely,



Julie A. Canepa, Program Manager  
Los Alamos National Laboratory  
Environmental Restoration

Sincerely,



Theodore J. Taylor, Program Manager  
Department of Energy  
Los Alamos Area Office

JC/TT/DB/eim

Enclosure:

Cy:

D. Broxton, EES-1, MS M992  
M. Buksa, E/ET, MS M992  
J. Canepa, E/ER, MS M992  
T. George, E/ER, MS M992  
J. Mose, LAAO, MS A316  
A. Pratt, EES-13, MS M992  
T. Taylor, LAAO, MS A316  
J. Bearzi, NMED-HRMB  
S. Yanicak, NMED-HRMB  
J. Parker, NMED-AIP  
ER Catalog # 19990151  
RPF, MS M707  
E/ER File, MS M992  
Tracker, RM 604, MS M992