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*Date:* November 27, 2007  
*Refer To:* EP2007-0712

James P. Bearzi, Bureau Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505-6303

**Subject: Request for Revised R-36 Schedule**

Dear Mr. Bearzi:

This letter provides the basis for the Los Alamos National Laboratory's (Laboratory's) request to the New Mexico Environment Department (NMED) to amend the estimated date for completion of regional well R-36. The tentative date for completion that was presented in the Drilling Work Plan for Regional Well R-36 is December 2, 2007. The new completion date is estimated to be January 28, 2008. This new estimated completion date is based on encountering a number of unexpected and challenging drilling conditions, specifically within the Cerros del Rio basalt and underlying saturated units within the vadose zone and encountering some mechanical problems with the drilling rig early in the campaign. The details are provided below and are a consolidation of information provided in the weekly status reports and other communications to NMED, including a site visit by Hai Shen on November 12, 2007.

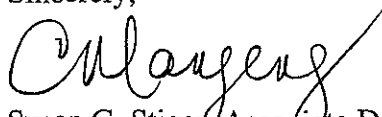
The Cerros del Rio basalt encountered in this borehole is highly fractured and yielding large blocks that are causing problems for the drill bits. For example, as the hammer bit was advanced through the basalt, carbide buttons on the outside of the bit were sheared off. This same bit was used successfully through the same stratigraphic section at nearby R-35a and R-35b with no unusual wear and/or damage. The discharged cuttings from R-36 contained a significant amount of large basalt chunks as opposed to the more typical smaller-sized chips encountered at R-35, indicating the presence of large-scale fracturing and caving of the borehole walls. A downhole video log of this zone verifies these observations.

Additionally, an apparent perched-intermediate groundwater zone has been encountered within or slightly beneath the Cerros del Rio basalt. This water, in combination with apparent swelling clays at approximately 570 ft below ground surface, apparently caused the borehole to swell closed. Measures have been taken to resolve the situation, but several days were required to collect samples from the perched zone, identify the best means for sealing off the perched-zone water, run video and other geophysical logs, and develop an approach to advance the borehole with confidence that perched-zone water would not follow the advancement.

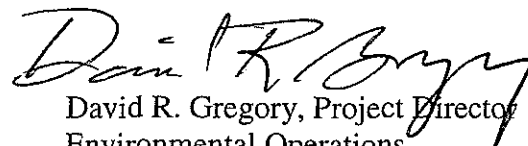
The Laboratory has reviewed a number of options to expedite the completion of R-36, including implementing changes in tooling and considering longer or possibly even 24-hr shifts. Our review of all the factors relating to the quality of the finished well, the collateral data that can be gained during the drilling operations, and especially the safety considerations of the crew lead us to the updated estimated completion date of January 28, 2008. This schedule will have R-36 online for inclusion in the next Sandia Canyon sampling campaign implemented under the approved 2007 groundwater monitoring plan.

If you have any questions, please contact Danny Katzman at (505) 667-6333 (katzman@lanl.gov) or Mat Johansen at (505) 665-5046 (mjohansen@doeal.gov).

Sincerely,

  
Susan G. Stiger, Associate Director  
Environmental Programs  
Los Alamos National Laboratory

Sincerely,

  
David R. Gregory, Project Director  
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