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TA-05



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**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

March 25, 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 DRAFT CHARACTERIZATION WELL R-13  
COMPLETION REPORT, ER 2003-0160  
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 Draft Characterization Well R-13 Completion Report and transmitted our comments via email to Department of Energy and Los Alamos National Laboratory (LANL) staff on March 20, 2003. A hard copy of our comments is attached.

To reiterate NMED's position, the primary objective of the well completion reports is to present all of the data that was collected during the drilling and installation of the well. In addition, screening data from borehole groundwater, collected core, and cuttings should be included. Rationale for any changes made to the scope of work must also be provided in the completion report and should be part of the cross-referenced table of planned versus actual work. The use of drilling fluids is a concern to NMED due to the potential impacts on the aquifer and groundwater quality. The types and volumes of drilling fluids used and recovered during drilling must be reported.



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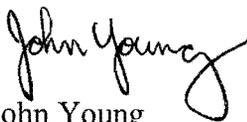
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Any problems or irregularities with well completion should be described in detail in the report. The description should include the resolution to the problem and any potential future impacts to the well's integrity that may result. The report should also propose periodic testing and/or inspection procedures and schedules to ensure that information about the future integrity of the well is collected and evaluated. The well completion report for R-16, for example, should include a section describing the drilling difficulties that resulted in leaving more than 700 feet of drill casing in the ground and isolating the top well screen behind the casing. Inclusion of the as-built diagram of the well will be essential to illustrate the well's final configuration. The well completion report for R-21 should include an explanation of the events in which tremie pipe was dropped into the borehole, any damage that resulted, any potential problems with well soundness or reliability, and methods to evaluate future well integrity. The report should also provide a description of the additional videos and geophysical surveys run in the borehole to assess the integrity of the well casing and screen.

NMED and LANL need to agree on a definition of when a well is considered to be complete. There have been unnecessary delays in surveying several of the wells; consequently, NMED does not agree with LANL's intent to link the well completion date to the date of the well head survey. We intend to discuss this issue further.

If you have any questions or would like to discuss NMED's comments on the draft report, please contact Ms. Carolyn Cooper of my staff at (505) 428-2539.

Sincerely,



John Young  
LANL Corrective Action Project Leader  
Permits Management Program

Cc: C. Cooper, NMED HWB  
D. Cobrain, NMED HWB  
J. Parker, NMED DOE-OB  
S. Yanicak, NMED DOE-OB, MS J993  
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B. Ramsey, LANL, RRES-DO, MS J591  
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File: Reading and LANL HWP (General)

## **Comments on Draft Characterization Well R-13 Completion Report, ER 2003-0160**

### **General Comments**

NMED is currently considering and drafting an acceptable definition for when a well is considered to be “complete.”

### **Abstract**

1. Page vii, ¶ 3: Change “these wells” to “this well”.

### **Introduction, 1.0**

2. Page 1, ¶ 1: Clarify where the well is located, “north of ...”
3. Page 2: This page is missing. Include Figure 1.0-1, the map showing the location of R-13.

### **Preliminary Activities, 2.0**

4. Pages 3-4: These pages are missing.
5. Based on the well completion report for MCOBT-4.4/8.5, Section 2.0 is not needed in the report.

### **Summary of Drilling Activities, 3.0**

6. Page 5: Figure 3.0-1, Well Summary Data Sheet for R-13: Include the date of the survey on the figure.
7. Page 6: Delete Table 3.1-1.
8. Page 6: Include a table or text with the volumes of drilling fluids (muds, dispersants, etc.) used, the volumes of these fluids recovered, and the depth intervals at which each type of fluid was used. This information can be included in this section (Drilling Activities, 3.1) or as a separate section within the Summary of Drilling Activities Section.
9. Page 7: ¶2: Include results from all groundwater samples analyzed and/or text describing whether there are any future concerns due to this hydraulic oil leak into the borehole. Include a reference to the Borehole Geophysics Section (5.0). Also include a reference to the Schlumberger Geophysics report (Appendix E), if the geophysics report contains the resolution to this issue.

### **Sampling and Analysis of Core, Drill Cuttings, and Groundwater, 4.0**

10. Page 8: Include borehole groundwater screening data. For wells where core is sampled, include contaminant screening data. For wells where alluvial or other perched groundwater is present/sampled, include the borehole screening data for these zones.

### **Borehole Geophysics, 5.0**

11. Page 9, ¶3: Clarify whether the conclusions regarding the hydraulic oil contamination are in the Schlumberger Geophysics report (Appendix E). Include a summary statement on the issue here. Include a reference to the Schlumberger Geophysics report (Appendix E), if appropriate.

12. Page 9, ¶3: Include a reference to Section 8.1 (Well Development) for resolution of the issue of the bentonite slug in the well.

13. Page 9, Section 5.2: Include the Important Results/Conclusions section from the Schlumberger geophysics report (Appendix E)(ex: see section 9.6.1.2 in the WCR for MCOBT 4.4/8.5).

### **Lithology and Hydrogeology, 6.0**

14. Page 10, Section 6.1: Replace “in order of younger to older occurrence” with “in descending order.”

15. Page 11, ¶5: Upper Puye Formation: Correct the reference to the thickness of the unit. It is 35 feet thick (268’-303’).

16. Page 12, Section 6.2, ¶2: Discuss whether drilling fluids were used from 0-37 feet. Clarify where the water may be originating. Include data from sample that was analyzed. See also the comment in Section 3.0 to include drilling fluid information in the report.

### **Well Design and Construction, 7.0**

17. Page 13, ¶1: Correct the reference cited. It should refer to Sections 7.1 and 7.2.

### **Well Development and Hydrologic Testing, 8.0**

18. Page 15: Section 8.0, ¶1: Clarify whether slug tests were performed in this well. If they were, include information and data from the tests (and include description of tests in Appendix A). If slug tests were not performed, delete this reference. This paragraph should mention the draw-down pumping test that was performed.

19. Page 17, ¶1: Correct the reference cited. It should refer to Table 8.1-1.

20. Page 17: Hydrologic Testing, 8.2: Include a reference to this pumping test in Appendix A in the R-13 Actual Work column.

### **Wellhead Completion and Site Restoration, 9.0**

#### **Appendix A – Activities Planned Compared with Work Performed**

21. Include rationale for changes made to the scope of work in either the R-13 Actual Work column or in a separate column.

22. Page A-1, Amount of Core activity: Include rationale for why no core was taken.

23. Page A-1, Number of Water Samples Collected for Contaminant Analysis activity: The table states that groundwater was sampled at 903 feet bgs. Section 4.0 (page 8) states that groundwater was sampled at 834 feet bgs. Correct the table in Appendix A.

24. Page A-2, Core/Cuttings Sample Analytes activity: Include rationale for why no cuttings samples were submitted for contaminant analysis.

25. Page A-3, Geophysics activity: The table lists different depths for the geophysics surveys that were run in the borehole than the depths that are listed in Table 5.0-1 (page 8). Correct the table in Appendix A.

26. Page A-3, Field Hydraulic Property Tests activity: Include the draw-down pumping test that was performed on October 13, 2001 (as described in Section 8.2, page 17). If slug tests were performed, include that information here.

**Appendix B – Operations Chronology Graph**

27. Delete Appendix B.

**Appendix C - Lithologic Log**

28. Include descriptive moisture terms (i.e. dry, slightly moist, moist) in the lithologic descriptions column. Alternatively, include percent moisture data on lithologic log.

**Appendix D - Borehole Video**

29. Include the borehole video(s) with the final version of the well completion report.

**Appendix E – Schlumberger Geophysical Report/Montage**

30. Include the Schlumberger geophysical report and montage with the final version of the well completion report.