

General

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 27, 2007

David Gregory
Federal Project Director
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Los Alamos, NM 87544

David McInroy
Remediation Services Deputy Project Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop M992
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL OF THE WORK PLAN FOR R-WELL
REHABILITATION AND REPLACEMENT, REVISION 1
EPA ID #NM0890010515**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the Department of Energy and Los Alamos Nation Security, LLC (collectively, the Permittees) document entitled "Work Plan for R-Well Rehabilitation and Replacement Revision 1" [Plan] dated June 2007 and referenced by LA-UR-07-3370 and EP2007-0300. NMED hereby issues this Notice of Disapproval (NOD) and provides the following comments:

Section 2.3 Results of Pilot Summary Report

1. The text states that "multiple-screen wells could be redeveloped effectively." Although NMED agrees that rehabilitation can improve the quality of the samples collected from a monitoring well, the statement is somewhat misleading. Overpumping was the only technique implemented during the pilot rehabilitation test and produced mixed results. By only utilizing "over pumping" and no other technique, the sole conclusion that can be drawn is that extensive purging of wells impacted by residual drilling and development



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fluids has the potential to improve sample quality. This suggests that sampling systems that can effectively purge the well prior to sample collection is as important, if not more important, than redevelopment of a well. The results from the pilot study indicate that while one screen at R-16 has shown "slight" improvement, the other screen has shown "slight degradation" since redevelopment activities. In the future, a combination of jetting and surging concurrent with pumping to remove any fines is required to improve the chances of successful rehabilitation. Other procedures must be approved by the NMED prior to implementation. In addition, sampling systems that allow purging of the screened interval prior to sampling are required unless otherwise approved by the NMED.

Section 3.1 Conversion and Rehabilitation Decision Factors

2. This section states that the well location and the vertical position of well screens are important factors for identifying whether or not a well or well screen can provide samples representative of groundwater quality. Well construction issues, the sampling system used, and contaminants of concern, among other factors, must also be considered in the well evaluations to identify wells that need well rehabilitation or replacement.

Section 3.2.2 Limitations to Well Conversion

3. This section indicates that the typical construction of regional wells included fabricated pipe-based screens. The Permittees must provide a list of wells and screened intervals where fabricated screens were utilized for well construction. Details of the design and construction, how the fabricated screens were made, and the rationale for the final design/construction of the screen must be included. The Permittees must also provide rationale for why the screens were constructed in the field rather than supplied by a commercial manufacturer of well screens.

Section 3.3 Sampling Systems

4. Although factors such as design, materials, and cost are important when considering possible sampling systems, the sampling system should be selected based primarily on the monitoring objectives for each well, taking into account the geochemical and the hydrogeologic conditions as well as the parameters proposed for monitoring at that location. It is not clear how the ranking of the sampling systems will be used to design wells or select sampling systems for newly installed, replaced, or rehabilitated wells. The Permittees must clarify how the ranking system will be used.

Section 3.4 Well Redevelopment Methods

5. The Permittees must provide brief descriptions of how the proposed 3-hour specific capacity tests will be conducted, what parameters will be measured, and how the results

will be used for the rehabilitation process and final assessment of the rehabilitation efforts.

Section 3.6.1 Assessing Geochemistry-Methodology

6. The section describes how turbidity, specific capacity (conductance?), total organic carbon and concentrations of sulfite, iron and manganese will be used to assess the effectiveness of well rehabilitation. Although the well screen assessment methodology utilizes several of these factors, ultimately, the final appraisal of the well rehabilitation efforts will be evaluated using the well screen assessment procedures. Provide clarification that this section, including the listed field parameters and in-house analyses, will only be used to direct the field operations during well rehabilitation. The final assessment of whether the well rehabilitation is successful must be determined according to the procedures and criteria specified in the Well Screen Analysis Report (Revision 2) approved by NMED.
7. The Permittees must clarify whether the reference to “specific capacity” as a field parameter, in this section is in error and whether it should read “specific conductance.”
8. Descriptions of the methods and quality assurance/quality control procedures for the field or in-house analyses of turbidity, specific capacity (conductance?), and total organic carbon, sulfate, iron, and manganese concentrations must be provided.
9. Section 3.6.1 also indicates that “additional field and bench-scale laboratory tests may be conducted to provide a better site-specific confidence” of the conditions around a well screen. The Permittees must provide more information, including the methods and their purpose, on the possible tests as well as the rationale for conducting the tests.

Table 4-1 Proposed Well Conversion and Rehabilitation Actions

10. The proposed schedule dates listed in this table must be specific. For example, “FY08” must be more specific for those wells requiring rehabilitation and sample system replacement (R-20, R-22, R-32 and R-25) based on requirements outlined in the April 5, 2007 NMED letter entitled “Well Evaluations for Intermediate and Regional Wells.” Recommendations and specific plans for other wells must be provided in the area-specific well evaluations. If not proposed, the NMED will establish deadlines for well rehabilitation and reporting of results. For wells that are not covered in the area-specific well evaluations, individual well evaluations identifying the need for rehabilitation or replacement shall be submitted under separate cover.

10. There is no rationale provided for why the wells listed in Table 4-1 are identified as having priority over the other wells potentially available for rehabilitation or replacement. The Permittees must provide the rationale for including or omitting wells from Table 4-1.

Appendix A

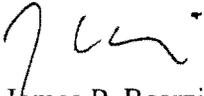
11. The necessity for the inclusion of Appendix A of the Plan is not clear. The Permittees must provide clarification on its relevance and use in the Plan.
12. The tables providing construction information for the identified wells appear to be incomplete and or incorrect. For example, CdV-R-15-3 indicates under the "Well Installation Fluids" column indicates that a combination of water and water plus EZ-Mud was *probably* used to place filter pack and bentonite pellet and slurry seals in CdV-R-15-3. Also, the information provided for R-12 under "Well Development Methods and Volumes Added/Removed" is the same for all three screened intervals. This is unlikely. The volumes or amounts of the various drilling fluids, additives or well development fluids used is also not provided, potentially indicating that record keeping may not have been complete. Complete records and a full accounting of well construction materials and any fluids used during construction or removed during development must be documented.

The Permittees may not reference standard operating procedures in lieu of providing descriptions of methods and procedures per section IX.A of the Consent Order. Specific plans and schedules for individual well rehabilitations and replacements are expected as part of the required well evaluation reports (i.e., TA-16, TA-54, TA-50, and Los-Alamos Pueblo Canyon/TA-21). Although the NMED acknowledges that rehabilitations of a well or well screen, cannot guarantee that quality data can be obtained from a well impacted by drilling and development fluids, the NMED recognizes that an attempt to rehabilitate wells or well screens may be preferred to well replacement. If rehabilitation is shown to be ineffective, the Permittees will be required to replace the wells or well screen unless the well is demonstrated to in an unfavorable location.

Messrs. Gregory and McInroy
Notice of Disapproval for the Work Plan for R-Well Rehabilitation and Replacement
June 27, 2007
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A revised Plan must be submitted to the NMED no later than July 31, 2007. Should you have any questions or comments, please contact John Young at (505) 476-6038.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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file: Reading and LANL General, Groundwater