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National Nuclear Security Administration
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Date: SEP 10 2010
Refer To: EP2010-0407

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

**Subject: Proposed Activities to Improve the Performance of the Technical Area 16
Pilot Permeable Reactive Barrier**

Dear Mr. Bearzi:

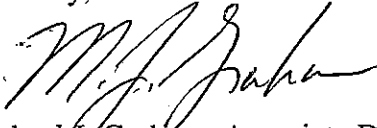
Based on the meeting between your staff and the U.S. Department of Energy and Los Alamos National Laboratory (collectively, the Laboratory) personnel on Friday, August 27, 2010, concerning the Technical Area 16 pilot permeable reactive barrier (PRB), the Laboratory proposes several adjustments described below to improve the performance of the PRB. Monitoring data collected to date indicate that the PRB system is not operating as intended based on concentrations observed in monitoring ports associated with the PRB vessel.

- (1) The order of the zero-valent-iron (ZVI) and zeolite media within the treatment cell will be reversed in an attempt to remove barium that may be precipitating as carbonate (and causing media plugging) because of the high pH values measured within the ZVI media. During this operation, the Laboratory will sample the ZVI and other media to evaluate whether carbonates are precipitating.
- (2) The gaskets will be reinstalled and the PRB vessel lid will be replaced to ensure good seals between the cells and the top of the vessel.
- (3) The vessel ports will be monitored weekly for field parameters following these initial activities. In addition to field parameters, the Laboratory proposes to collect additional data, including Earth and Environmental Sciences laboratory cation and anion screening, as needed, at the vessel inlet and outlet and within the vessel to diagnose potential flow problems more rapidly. The Laboratory will perform geochemical modeling (e.g., eH-pH diagrams) to help with these evaluations.
- (4) If these modifications are ineffective, the Laboratory will consider using granular activated carbon or other replacement media for RDX (hexahydro-1,3,5-trinitro-1,3,5 triazine) treatment. The Laboratory will consult with New Mexico Environment Department staff before such a change is made.

Per the email from Mr. Michael Dale, dated August 31, 2010, the Laboratory will inform your staff 3 days in advance of implementing any of these activities. The Laboratory will also keep your staff apprised of the progress of these efforts.

Thank you for your consideration of this request. If you have any questions please contact John McCann (505) 665-1091 (jmccann@lanl.gov) or Woody Woodworth (505) 665-5820 (lwoodworth@doeal.gov).

Sincerely,



Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,



George J. Rael, Manager
Environmental Projects Office
Los Alamos Site Office

MG/GR/DM/JM/DH:sm

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