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mwL 07
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07-021
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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 19, 2007

Patty Wagner
Manager
Sandia Site Office/NNSA
U.S. Department of Energy
P.O. Box 5400, MS 0184
Albuquerque, NM 87185-5400

Francis B. Nimick
Deputy Director
Nuclear Energy & Global Securities Technologies
Sandia National Laboratories
P.O. Box 5800, MS 0701
Albuquerque, NM 87185

**RE: NOTICE OF DISAPPROVAL: MONITORING WELL PLUG AND
ABANDONMENT PLAN AND REPLACEMENT WELL CONSTRUCTION
PLAN, DECOMMISSIONING OF GROUNDWATER MONITORING WELL
MWL-BW1, INSTALLATION OF REPLACEMENT GROUNDWATER
MONITORING WELL MWL-BW2,
APRIL 9, 2007
SANDIA NATIONAL LABORATORIES NM5890110518
HWB-SNL-07-014**

Dear Ms. Wagner and Mr. Nimick:

The New Mexico Environment Department (NMED) has reviewed the subject document dated April 9, 2007 (with transmittal letter dated April 17, 2007), and has determined that there are several deficiencies in the plan for replacement of the background monitoring well at the Mixed Waste Landfill (MWL). The U. S. Department of Energy and Sandia Corporation (“Permittees”) must respond to the following comments within 60 days of receipt of this letter.

1. Page 5, Section 5 – the one sentence in this paragraph references well TAV-MW10. This appears to be a typographical error and likely should refer to proposed replacement well MWL-BW2. If in error, modify the plan to correct the error.
2. Page 5, Section 5.1 – this section states that MWL-BW2 will be installed a minimum of 25 feet away from the existing well (MWL-BW1) location. Later, the text states that

MWL-BW2 will be located about 700 feet northeast of MWL-BW1, but that the actual location will be selected with concurrence from NMED. The proposed location for MWL-BW2 as shown on Figure 1 is acceptable to the NMED. A location about 200 feet east of the Mixed Waste Landfill (MWL) should be sufficient. Modify the plan to more precisely indicate the location of proposed well MWL-BW2.

3. Page 5, Section 5.2.1 – This section states that the total depth of the borehole in which MWL-BW2 is to be constructed will be determined by a field geologist. The anticipated well screen depth as discussed in the subject plan is 472-502 feet below ground surface. NMED expects MWL-BW2 to be screened in the uppermost part of the saturated zone, with about 5 feet of screen above the water table. Because of the proposal to use 30 feet of screen, instead of 20 feet, and because of the significant vertical gradient that exists at the MWL site, the water level in MWL-BW2 is expected to be significantly lower than that observed in existing well MWL-BW1. This will need to be considered when generating future water-level maps. Modify the plan to indicate that the well screen for MWL-BW2 will be set with about 5 feet of screen situated above the water table.
4. Page 5, Section 5.2.1 – The Permittees shall log the geology of the borehole during drilling, given that MWL-BW2 is to be located a substantial distance from the well it will replace. Modify the plan to state that the geology of the borehole will be logged during drilling.
5. Page 5, Section 5.2.1 – The Permittees shall log the depth of the first encounter with regional groundwater and any perched groundwater, during drilling. Modify the plan to state that the depth of regional groundwater and the depth of any perched groundwater will be logged during drilling.
6. Page 6, Section 5.2.2 – The screen shall be constructed of slotted schedule 80 polyvinyl chloride (PVC). Although the transmittal letter implies that the screen will be made of PVC, the plan does not. Modify the plan to state that the screen will be made of PVC.
7. Page 6, Section 5.2.2 – At the MWL, sediments making up the uppermost part of the saturated zone are fine-grained. The subject plan calls for the use of 10-20 silica sand for the primary filter pack and 0.020 inch slotted screen. The Permittees need to ensure that the screen slot size and gradation of the filter pack material is of proper size to prevent water samples collected from the well from exhibiting high turbidity. Modify the plan to state that primary filter pack and screen slot size will be changed in the field if necessary based on the gradation of sediments actually encountered in the interval to be monitored.
8. Page 6, Section 5.2.2 – The plan calls for the installation of grout in at least two lifts. Please note that during the installation of well MWL-MW5, grout intruded the well screen. Although there are several possible explanations for what caused this grout

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intrusion to occur, the emplacement of grout in lifts that were too long may have led to this problem. Modify the plan to place the grout using more lifts, with a minimum of 24 hours of setting time between the first two lifts.

9. Page 6, Section 5.2.2 – The plan states that PVC centralizers will be placed at the top and bottom of the screen. Modify the plan to state that additional centralizers will be added from the top of the screen to the surface, not to exceed an interval of 100 feet.
10. Page 6, Section 5.2.2 – Modify the plan to indicate that the well location (easting/northing or latitude/longitude and top of casing) will be surveyed. Indicate also the degree of accuracy for the survey.
11. Page 8, Section 5.2.3 – Modify the plan to state the parameters that are to be measured during well development.
12. Page 8, Section 5.2.3 – Modify the plan to indicate that the method of development, the volume of water added or removed, the parameters measured, the results of the measurements, and the time these activities take place are to be documented in writing during well development. Indicate in the plan that only potable water shall be used to develop the well.
13. Modify the plan to specify in detail the criteria for which well development will be considered adequate and complete.

If you have any questions regarding this matter, please contact Mr. William Moats of my staff at (505) 222-9551.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
W. Moats, NMED HWB
L. King, EPA-6
P. Freshour, SNL, MS 1089
File: SNL 2007 and Reading