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NEW MEXICO ENVIRONMENT DEPARTMENT **ENTERED**

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DAVE MARTIN  
Secretary

BUTCH TONGATE  
Acting Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

November 22, 2011

Colonel David Hornyak  
Base Commander  
377 ABW/CC  
2000 Wyoming Blvd. SE  
Kirtland AFB, NM 87117-5606

John Pike  
Director, Environmental Management Section  
377 MSG/CEANR  
2050 Wyoming Blvd., Suite 116  
Kirtland AFB, NM 87117-5270

**RE: NOTICE OF DISAPPROVAL: LNAPL CONTAINMENT INTERIM MEASURE  
WORK PLAN, PART 1 – CHARACTERIZATION PLAN, BULK FUELS  
FACILITY SPILL, SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111,  
JULY 2011  
KIRTLAND AIR FORCE BASE, EPA ID# NM9570024423  
KAFB-10-037**

Dear Col. Hornyak and Mr. Pike:

The New Mexico Environment Department (NMED) has reviewed the document *Light Non-Aqueous Phase Liquid (LNAPL) Containment Interim Measure Work Plan, Part 1 – Characterization Plan, Bulk Fuels Facility, Solid Waste Management Units ST-106 and SS-111*, dated July 2011 (hereafter referred to as the “Plan”). The Plan was prepared by the U. S. Air Force (Permittee) in response to Part 1 of the Notice of Disapproval issued by the NMED on March 31, 2011, for the first version of the Plan dated November 2010.

NMED has identified several deficiencies in the Plan that require correction and which are presented in the below comments.

1. The Permittee was directed in the NOD issued March 31, 2011, to include a table that details where all revisions have been made to the Plan and that cross-references NMED’s numbered comments in the NOD. Such table was not provided. The Permittee must submit this table to the NMED.
2. ES-1, Executive Summary – In the 2<sup>nd</sup> paragraph, the February 1, 2012. deadline

KAFB3819



pertains to the characterization report, not the Plan. Revise the Plan accordingly.

3. Section 5.1.3.3 – It appears that this section should reference Figure 5-4 instead of Figure 5-3. Correct the figure citation if it is erroneous.
4. Section 5.1.2 – NMED suspects that the presence of LNAPL will affect the outcome of the slug tests conducted in wells where significant LNAPL exists. It is therefore critical that the thickness of LNAPL be measured immediately prior to and after the slug tests are performed, and the results recorded. Specify how the presence of LNAPL will be addressed during field data collection and how it may affect the slug test results.
5. Section 5.1.2 – Explain in detail the methods that will be used to evaluate slug test data.
6. Section 5.1.2 – Specify the size of slug or slugs that will be used.
7. Section 5.2 – In addition to the locations specified in Section 5.2, collect and analyze LNAPL and groundwater samples from well KAFB-10628, the extraction wells, and any additional observation wells installed for conducting the pumping tests. Revise the Plan accordingly.
8. Section 6.3.5 states that the thickness of bentonite seal will be a minimum of 5 feet but Figure 6-1 shows the thickness as 10 ft. Correct the specification as applicable.
9. Specify the approximate length of the 13-3/8-inch surface casing shown on Figure 6-1 and include it in Section 3.5, Pumping Well Construction.
10. Section 5.1.3.2 and 5.1.3.3 -- Indicate which wells will be used for the specific drawdown tests discussed in Section 5.1.3.2 and specify which monitoring wells will be used as observation wells for the specific drawdown tests discussed in Section 5.1.3.3. For each of the well pumping tests, specify the observation wells and their distances from the pumping well. Discuss the minimum drawdown that the Permittee believes can be measured in the field with reasonable certainty that the measurements are accurate.
11. In Figure 5.4, Wells KAFB-106023, KAFB-106033, and KAFB-106034 appear to be located in the wrong positions. Check and correct, as necessary, all locations and distances of all wells in Figure 5.4.

12. Update the screen intervals in Table 5.3 and correct anticipated screen intervals for the pumping wells.
13. Add a section discussing how the pumping tests will be evaluated and propose a plan to determine specific yield from the pumping tests.
12. Add to the Plan that if appreciable drawdown is not observed for at least one observation well for a given pumping test, and taking other actions fail to produce appreciable drawdown, at least one observation well closer to the pumping well will be installed, and the pumping test for the well repeated. The locations of new observation wells must be approved by NMED prior to their installation.
13. Section 7.7 –The volume of wastewater expected from the pumping tests could exceed 200,000 gallons. Discharge of pumping-test water to the ground may not be acceptable given that the water may potentially contain hazardous waste (benzene). Even if treated, the wastewater from the pumping tests must be contained, sampled, and disposed of in accordance with Permit Part 6.5.7. Discharge to the ground surface must be approved in advance by NMED’s Ground Water Quality Bureau. Discuss in detail in the Plan the means by which investigation-derived wastewater and other investigation-derived waste will be managed and disposed of.
14. Section 6.3.4 – Under “Stratification,” split-spoon samplers are mentioned; however, split-spoon samplers are not proposed in Section 6.3.4. Instead, samples will consist of cuttings retrieved from the air rotary hopper. Revise the text accordingly.
15. Section 6.3.5 – The first bullet indicates that 10-20 graded silica sand will be used for the sand pack, but this does not match Figure 6-1, which indicates 8-12 gradation. Also, the second bullet indicates a minimum five (5) ft thick bentonite seal, but the figure indicates 10 ft. Correct the text as appropriate.
16. Section 6.5 – Quarterly reporting to NMED has still not been adequately provided for in the Plan. Although this section is entitled “Reporting” it only addresses geophysical logging activities. The Permittee must report all Plan activities, not just the geophysical logging. At a minimum the characterization report should include the following:
  - a. Boring logs, well construction diagrams and well development records for extraction wells, and any observation wells installed to complete the pumping tests;
  - b. Groundwater, soil and LNAPL chemical and physical analyses;
  - c. Slug test and pumping test data, analyses and results; and an

d. Updated hydrogeologic model.

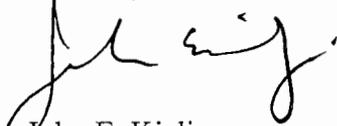
17. Table 5-4 – Regarding the treatability testing during the pumping test, NMED suggests also analyzing samples from between the primary GAC bed and the guard bed or provide some other assessment of treatment. Also, NMED suggests daily analysis of total organic loading with TPH.

18. NMED also notes that the WUA has submitted on August 19, 2011, comments on the Plan to the Permittee, and urges the Permittee's thoughtful consideration of the WUA's comments. In particular, the Permittee should consider carefully the WUA's comments in Section 3.1.2, second and third bullets, and Section 3.1.3, fourth bullet. Several of the WUA comments concern the design of the LNAPL Containment System and should be considered for incorporation into the final design of the system.

### Final Direction

The revised Plan must address the comments noted herein and incorporate the requirements set forth in this letter. The revised Plan must be submitted to the NMED no later than **February 3, 2012**. As part of the response that accompanies the revised Plan, include a table that details where all revisions have been made to the Plan and that cross-references NMED's numbered comments in this letter. Submittals (including maps and tables) must be in the form of two paper copies and one electronic copy in accordance with Permit Part 1.36 of the Permittee's Hazardous Waste Operating Permit for the Open Detonation Unit. Respond to this letter to my attention, with copy to Mr. Jerry Schoeppner of the NMED Ground Water Quality Bureau, and Mr. William Moats of my staff (NMED HWB, 5500 San Antonio NE, Albuquerque, NM 87109). Please contact me should you have any questions at 505-476-6035.

Sincerely,



John E. Kieling  
Acting Chief  
Hazardous Waste Bureau

cc: W. Moats, NMED HWB  
W. McDonald, NMED HWB  
S. Brandwein, NMED HWB  
J. Schoeppner, NMED GWQB  
S. Reuter, NMED PSTB  
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R. Shean, ABCWUA  
L. King, EPA-Region 6 (6PD-N)  
File: KAFB 2011 and Reading