DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)

MAY 05 2011

Mr. Thomas F. Berardinelli
377 ABW/DS
2000 Wyoming Blvd SE
Kirtland AFB NM 87117-5000

Mr. John Kieling
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Dr East, Bldg 1
Santa Fe NM 87505-6303

Mr. Kieling

This letter is to summarize the decisions agreed to at the 7 March 2011 Kirtland Air Force Base (AFB)-New Mexico Environment Department-Hazardous Waste Bureau (NMED-HWB) meeting. The meeting was held to discuss the 21 February 2011 NMED letter (Atch 1) requiring continuous coring with laboratory measurements for grain size, hydraulic conductivity, porosity, specific yield, and compressibility. As agreed, the desired hydraulic parameters of hydraulic conductivity, specific yield, and grain size will be obtained through a combination of pumping tests, slug tests, and samples collected during drilling. Collecting hydraulic data in this fashion will result in the most suitable data to evaluate and design the LNAPL containment system and inform future final remedy evaluations.

Pumping tests of the planned extraction wells will result in estimations of hydraulic conductivity, as well as specific yield. The pump test will also allow for the estimation of both vertical and horizontal hydraulic conductivity, through the monitoring of monitoring wells at the three depths (shallow, intermediate, and deep).

Slug tests will be conducted on all of the field groundwater monitoring well locations, as shown in the attached Figure 1-1. The slug test results will be analyzed following the oscillating slug test method (provided separate) and will yield hydraulic conductivity data most suited to monitoring contaminant migration rates. The other wells in a cluster may also be monitored during slug testing to provide an additional estimate of aquifer anisotropy.

In addition to these tests, drill cutting samples will be collected from the cyclone collection device at five foot intervals across the screened interval. The most representative sample, submitted for analysis, will be reconsolidated and tested for hydraulic conductivity, specific

yield, and grain size. The grain size analysis results will be used to estimate porosity for the screened intervals.

Based on the above information, it was agreed that continuous coring of the screened interval will not be required. Also, analysis of samples for compressibility will not be required.

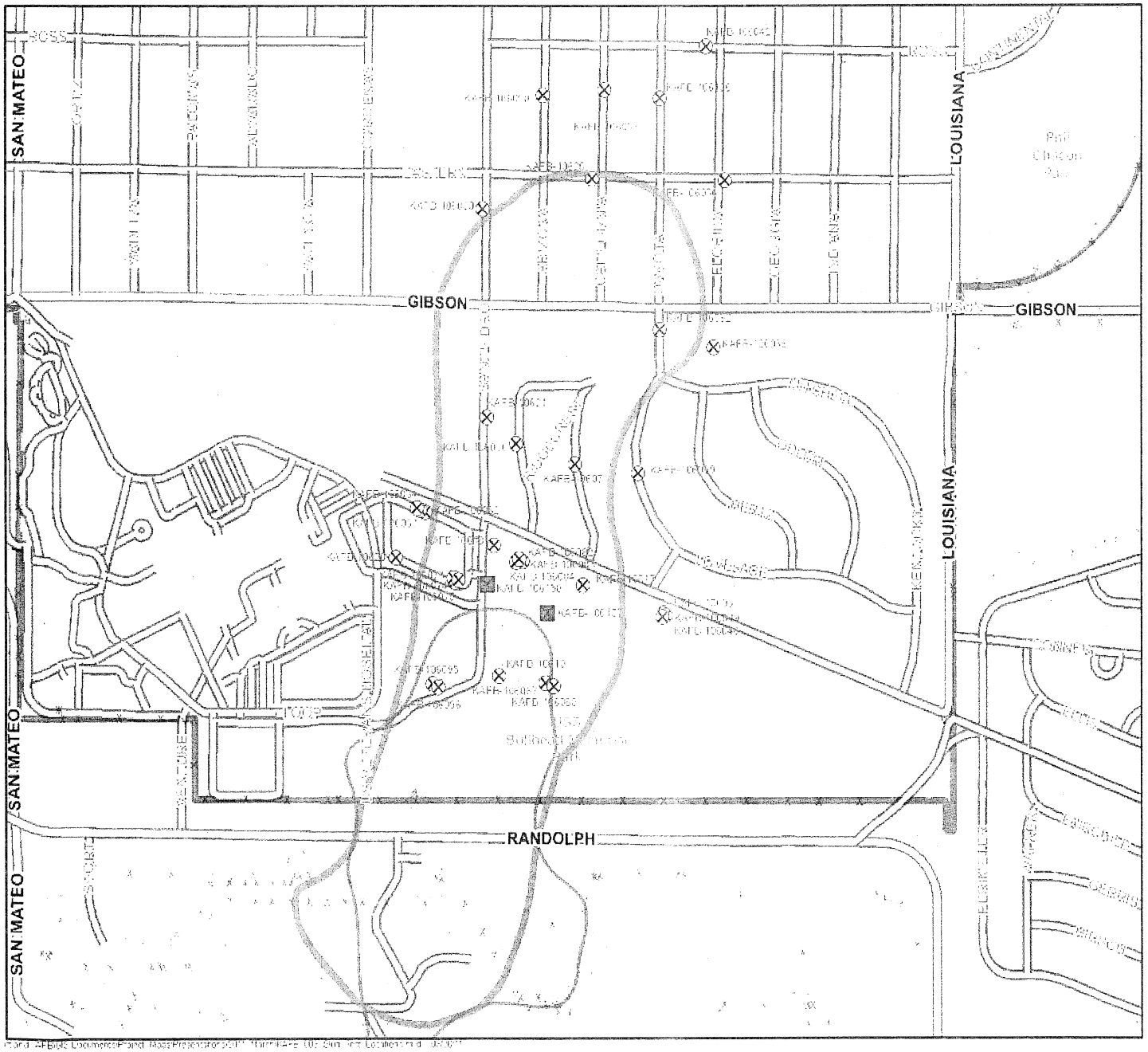
If you have any questions with regard to these submittals, please contact Mr. John Pike at (505) 846-8546.

Sincerely

THOMAS F. BERARDINELLI
Director of Staff

2 Attachments:
1. 21 Feb 2011 NMED LETTER - "DIRECTION TO ACQUIRE HYDRAULIC INFORMATION BULK FUELS FACILITY SPILL (SWMUS ST-I06 AND SS·111) KIRTLAND AIR FORCE BASE EPA ID# NM9570024423"
2. Figure 1-1: KAFB_003_Slug_Test _Locations

cc:
NMED HWB - Mr. Moats, w/ atchs electronic and hardcopy
NMED GWQB - Mr. Olson, w/ atchs electronic and hardcopy
NMED HWB - Mr. McDonald, w/o atchs
NMED HWB – Mr. Brandwein, w/o atchs
USEPA-Region 6 (6PD-N), Ms. King, w/o atchs
AFCEE, Mr. Oyelowo, w/o atchs
USACE, Mr. Midgal, w/o atchs
Admin. Record, CNM, Montoya Campus w atch
File

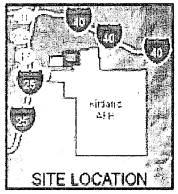


Legend

Field Sample Point

Location Type

- Monitor Well
- Containment Well
- NAPL Area
- Dissolved Plume



N

500 250 0 500

Feet

1 inch = 500 feet

SLUG TEST LOCATIONS

KIRTLAND AIR FORCE BASE

FIGURE 1-1

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

DAVE MARTIN
Secretary

RAJ SOLOMON, P.E.
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 21, 2011

Colonel Robert L. Maness
Base Commander
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

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

RE: DIRECTION TO ACQUIRE HYDRAULIC INFORMATION
BULK FUELS FACILITY SPILL (SWMUS ST-I06 AND SS-111)
KIRTLAND AIR FORCE BASE
EPA ID# NM9570024423

Dear Col. Maness and Mr. Pike:

On December 1, 2010, the U.S. Air Force (the Permittee) submitted a plan to contain light nonaqueous phase liquid (LNAPL) at Solid Waste Management Units (SWMUs) ST-106 and SS-111, Kirtland Air Force Base (KAFB) Bulk Fuels Facility Spill. While the plan is conceptual in nature, it calls for extraction wells designed to create a capture zone for the LNAPL and an infiltration well to disposition the extracted and treated water. To refine the plan, and collect data crucial for development and design of final remedies for groundwater contamination, key aspects of the geologic and hydrologic conditions of the groundwater need to be determined. The need for this information was previously communicated to the Permittee in correspondence dated August 6 and April 2, 2010.

The ongoing drilling for the Bulk Fuels Facility Spill project provides an excellent opportunity to obtain this information and assess the horizontal and vertical variability of several important hydraulic parameters through the sampling of aquifer materials, likely at a reduced overall cost for the project. Thus, pursuant to Part 6.5.17.1 of the Permittee's Hazardous Waste Facility Permit, the Permittee must collect undisturbed, representative samples of the saturated zone encountered at the location of each well screen for each groundwater monitoring well listed under NMED's letter of August 6, 2010, for which drilling begins on or after **February 25, 2011**. The samples must be analyzed in the

laboratory for grain-size distribution, saturated hydraulic conductivity (vertical and horizontal by the constant or falling head methods, as appropriate), porosity, and specific yield. Samples must also be collected from the saturated zone encountered at the location of each well screen for the wells screened across the water table at locations # 14, 16, and 22 of NMED's letter of August 6, 2010, and analyzed in the laboratory for compressibility. All samples must be described for their geologic characteristics (mineralogy and texture) and assigned the appropriate classification under the Unified Soil Classification System. The field data and results of the sampling and laboratory analysis must be submitted in a report to the NMED by **August 1, 2011**.

NMED invites the Permittee to meet to discuss this direction in more detail, and to consider additional or alternative parameters that might be useful in future corrective actions at the Bulk Fuels Facility Spill project. NMED will provide its comments on the LNAPL containment plan under separate cover.

Please contact William Moats at (505) 222-9551 of my staff to arrange the aforementioned meeting, or if you or your staff have any questions.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: R. Solomon, Acting Director, NMED WWMD
J. Kieling, NMED HWB
W. Moats, NMED HWB
W. McDonald, NMED HWB
S. Brandwein, NMED HWB
B. Olson, HWB GWQB
B. Swanson, HWB GWQB
L. Barnhart, NMED OGC
B. Gallegos, AEHD
B. Gastian, ABCWUA
L. King, EPA-Region 6 (6PD-N)
File: Reading and KAFB 2011