NEW MEXICO
ENVIRONMENT DEPARTMENT

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

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

BUTCH TONGATE
Cabinet Secretary

J. C. BORREGO
Acting Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 7, 2016

Adam Kusmak
Chief, Installation Flight Management
49th CES/CEI
550 Tabosa Avenue
Holloman AFB, NM 88330

RE: DISAPPROVAL
MAY 12, 2016 RESPONSE TO JANUARY 7, 2016 NOTICE OF DISAPPROVAL,
FINAL NITRATE CHARACTERIZATION REPORT, JANUARY 2014
HOLLOMAN AFB, EPA ID# NM6572124422
HWB-HAFB-14-001

Dear Mr. Kusmak:

On May 13, 2016, the New Mexico Environment Department (NMED) received a document from Holloman AFB (the Permittee) responding to NMED's second Notice of Disapproval (NOD) for the above referenced Nitrate Characterization Study Report (the Report). As stated in the NOD, dated January 7, 2016, "...the Permittee proposes that the background screening concentration for nitrate be set at 37.77 milligrams per liter (mg/L), which exceeds the New Mexico Water Quality Control Commission standard and the U.S. Environmental Protection Agency Maximum Contaminant Level for nitrate (both set at 10 mg/L). In the August NOD [August 21, 2015], NMED stated that it cannot accept a screening background concentration that exceeds water quality standards unless the Permittee demonstrates that it is based on water quality data that are representative of natural conditions. Therefore, the NMED directed the Permittee to:

a. Collect groundwater samples at all 24 monitoring wells (MWs) designated as background wells and analyze them for perchlorate. Appreciable concentrations of perchlorate in association with nitrate could suggest an anthropogenic source for both compounds, and

b. Collect groundwater samples at all 24 MWs and analyze them for stable isotopes of nitrogen and oxygen (specifically $^{15}N/^{14}N$ and $^{18}O/^{16}O$). The data, in the form of $\delta^{15}N$ and $\delta^{18}O$, must be plotted on a graph similar to the one shown on Figure 1 (enclosed with [the January 7, 2016] letter) to support interpretation of the data."

In the Permittee's May 16, 2016 response to the January 7, 2016 NOD, the Permittee states that "... it is Holloman's position, that any additional effort with nitrogen and oxygen ratios would most likely not produce results to support either man-made or naturally occurring sources for nitrates in groundwater". The Permittee then requested that NMED "... accept the site specific background condition for nitrate in groundwater at Holloman to be 37.7 mg/L".

NMED maintains that it cannot accept a screening background concentration that exceeds water quality standards unless the Permittee demonstrates that it is based on water quality data that are representative of natural conditions.

The Report did not include a map of nitrate concentrations in groundwater; therefore, NMED has manually plotted the nitrate results for all 24 MWs on Figure 3-1 of the Report (see attached). The approximate locations and nitrate results from 18 of the MWs used in the 2009 Basewide Background Study were also plotted on the Figure to attempt to define the southern boundary of nitrate background concentrations. It is readily apparent from the plotted data that the concentrations of nitrate in excess of 10 mg/L (plotted in red) are within the area of current and historic facility operations that included, among other activities, rocket and munitions research, development and testing. Concentrations of nitrate that were less than 10 mg/L are plotted in blue and are, for the most part, found along the periphery of the Facility outside of the operational areas. The plotted data do not support a background nitrate concentration of 37.7 mg/L and implies that the elevated nitrate concentrations are related to Base activities. The Permittee must clearly demonstrate that the nitrate results in excess of 10 mg/L are based on water quality data that are representative of natural conditions.

If the Permittee can successfully demonstrate that the elevated nitrate levels are of natural origin, this presents the likelihood of two separate populations of nitrate in groundwater. Should this be the case, the Permittee will be required to separate the nitrate results for groundwater into two separate populations for statistical analysis of background conditions. The boundary between the low and high nitrate concentration areas will need to be established on a figure similar to Figure 3-1.

If the Permittee is unsuccessful at demonstrating that the elevated nitrate levels are of natural origin, the base wide cleanup level for nitrate will be 10 mg/L.

The Permittee must submit a work plan to NMED that describes how the groundwater samples will be collected and analyzed in order to provide the data necessary to evaluate naturally occurring nitrate concentrations in the vicinity of Holloman Air Force Base on or before **December 23, 2016**.

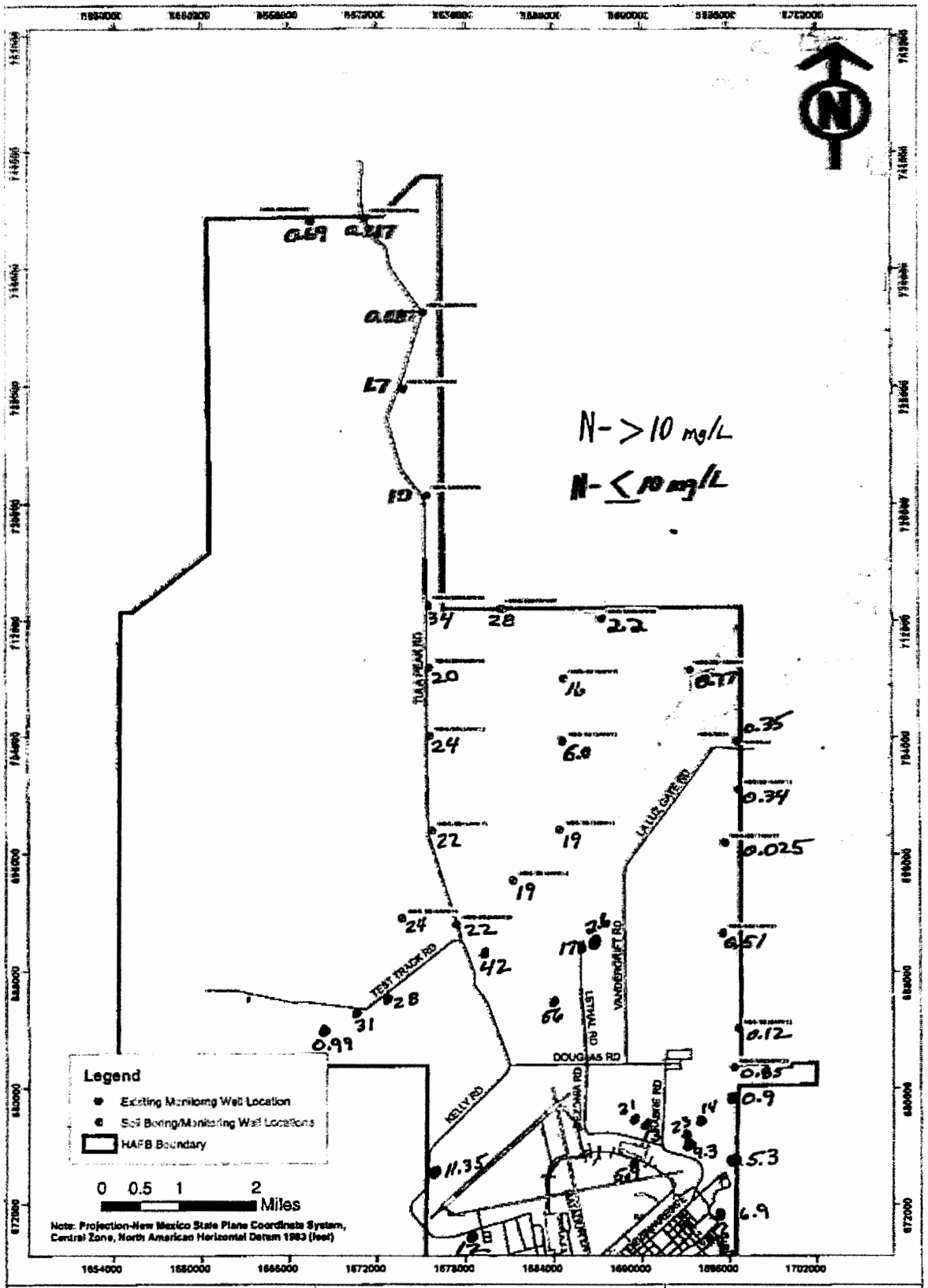
If you have any questions regarding this letter, please contact Mr. David Strasser of my staff at (505) 222-9526.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
C. Amindyas, NMED HWB
D. Strasser, NMED HWB
C. Schick, HAFB
D. Griffin, HAFB
C. Hendrickson, EPA, Region 6 (6MM-RC)
L. King, EPA, Region 6 (6MM-RC)

File: HAFB 2016 and Reading
HWB-HAFB-14-001



NORTHVIEW	**Soil and Groundwater Sampling Locations, Nitrate Background Study**			Nitrate Characterization Study Report Holloman AFB, New Mexico
	11-0017	1"=5000'	7/31/2013	cm Figure 3-1
				Figure 3-1