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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE NEW MEXICO

25 JAN 2001

Colonel Jeffrey A. Remington
Commander
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Cannon AFB NM 88103-5214

Ms. Phyllis A. Bustamante
Ground Water Pollution Prevention Section
New Mexico Environment Department
PO Box 26110
1190 St Francis Drive
Santa Fe NM 87502-6110

Dear Ms. Bustamante

In my 1 Nov 00 letter, I provided written notification of two unauthorized discharges located on the Cannon Air Force Base (AFB) golf course. My 1 Nov 00 letter also included a corrective action report detailing the sampling and analysis Cannon AFB would undertake to determine the contamination extent and mitigation actions should regulatory standards be exceeded. This letter forwards several sets of analysis results and provides specific recommendations based upon these analyses.

Following discharge notification, you recommended that the soil be analyzed at the point diesel fuel appeared to be percolating through the surface. The corrective action report refers to this area as the "vegetated mound." In addition, you recommended that similar analysis be conducted for a water sample collected near the mound. Laboratory analysis results for both media are provided at Attachment 1. Based upon the elevated total petroleum hydrocarbon (TPH) diesel range organics (DRO) analysis results of the soil, Cannon AFB will continue its process of determining the contamination source near the vegetated mound. My staff will work with the Hazardous Waste Bureau in this regard. Analysis results, specifically TPH DRO, of the water sample did not indicate a concern. The petroleum sheen on the surface of the water appears to have been the result of contact with the mound. We are confident that once the diesel source is removed from the vegetated mound, surface water concerns will be eliminated.

You also requested that two soil samples be collected to determine whether golf course pond water discharged to the storm sewer system may have transported contaminants. Constituents analyzed for this purpose were identical to those associated with the vegetated mound soil sample. As detailed in the corrective action report, one soil sample was taken in the path of the discharged pond water and the other soil sample was taken elsewhere in order to establish a background level baseline. The results of these soil samples are at Attachment 2. These results indicate that contaminants above regulatory standards were not released into the storm drainage system; therefore, no mitigation actions are warranted.

The corrective action report concluded with a statement that natural attenuation would be used should hydrocarbon contamination above regulatory standards be encountered. As stated above, mitigation efforts are not necessary as a result of discharges to the storm sewer system. Cannon AFB also collected surface soil samples from four areas for TPH DRO analysis in order to evaluate the effectiveness of natural attenuation. While the plan did not specifically identify that these areas would be analyzed, they were discussed in the report. These areas include the two locations where free-floating petroleum was observed, the drainage ditch near the diesel generator, and the vegetated mound. Each of these areas was identified on the map accompanying the report. Based upon the laboratory analysis results at Attachment 3, TPH concentrations are not a concern. TPH concentration associated with the vegetated mound is worthy of discussion, however. Initial soil collection occurred while petroleum was observed percolating up through the water; the concentration was determined to be 5,770 milligrams per kilogram (see Attachment 1). Approximately two weeks after the initial sampling event, the concentration decreased to 5 milligrams per kilogram (see Attachment 3). Natural attenuation over this brief period cannot account for this significant decrease. Two more realistic explanations are offered. First, diesel fuel from the generator may have washed up against the vegetated mound; fuel then saturated the soil. Given the small amount of fuel released from the generator, this explanation is not very plausible. Second, objects containing petroleum products were buried in forming the vegetated mound. Water encroachment onto the mound due to heavy rains then began the hydrocarbon percolation phenomenon. This is a more reasonable explanation and this is the basis for Cannon AFB working with the Hazardous Waste Bureau.

The map at Attachment 4 identifies the areas that were sampled. No additional sampling and analysis, other than that agreed to by my staff and the Hazardous Waste Bureau, is contemplated as a result of these discharges.

If you have any questions regarding this issue, please contact Mr. John Rebman, Environmental Flight, at (505) 784-1099.

Sincerely


JEFFREY A. REMINGTON, Colonel, USAF

Attachments:

1. Laboratory Analysis Results
2. Laboratory Analysis Results
3. Laboratory Analysis Results
4. Map

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cc:

NMED, Clovis Field Office w/o Attachments (C. Romero)
NMED, Hazardous Waste Bureau w/o Attachments (G. von Gonten)
NMED, Surface Water Quality Bureau w/o Attachments (T. Hensley)