



HAFB 99

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Reading 12/13/99
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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

December 13, 1999

Howard E. Moffitt
Deputy Base Civil Engineer
49 CES/CEV; 550 Tabosa Ave.
Holloman Air Force Base, NM 88330-8458

**SUBJECT: AOC-T, SWMUs 133 and 230: RFI REPORT, REQUEST FOR
SUPPLEMENTAL INFORMATION
EPA ID No. NM6572124422**

Dear Mr. Moffitt:

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has reviewed for technical completeness the Holloman Air Force Base (HAFB) RFI Report (the Report) for solid waste management units (SWMUs) 130 and 230, and the area of concern (AOC-T) proximal to the SWMUs, as required under the New Mexico Hazardous Waste Management Regulations 20 NMAC 4.1.

Pursuant to its authority under the New Mexico Hazardous Waste Act, N.M.S.A. 74-4-1 et seq., and regulations promulgated pursuant thereto, the HRMB has found the Report to be technically incomplete. HRMB's comments reflect and include remarks of this RFI review conducted by Region VI EPA previously submitted to HRMB on February 4, 1999. The enclosed attachment lists the comments that HAFB needs to address before NMED can make a determination of no further action (NFA) at the above referenced SWMUs and AOC.

Please submit the requested information within sixty (60) calendar days from the date you receive this request for supplemental information (RSI). The HRMB may consider a petition for a deadline extension, provided that a written justification and the expected submittal time are given.

Please present the required information in two hard copies and on a 3.5" diskette compatible with MS Word or WordPerfect for Windows 5.x or 6.1.

Mr. Moffitt, HAFB
Page 2 of 2
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If you have any questions please call me at (505) 827-1561x1030.

Sincerely,



Cornelius Amindyas, Environmental Specialist, HRMB
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau

Enclosure

cc: John E. Kieling, Acting Manager
James P. Bearzi, Chief, HRMB
Robert S. (Stu) Dinwiddie, RCRA Adviser, HRMB
David Neleigh, Chief, EPA Region VI (6PD-N)
Kirby Olson, Environmental Specialist, HRMB

FILE: HAFB, HSWA, 99
TRACK: HAFB, 12/13/99, HAFB, HRMB/CA, RSI, SWMUs 133 & 230

ATTACHMENT

REQUEST FOR SUPPLEMENTAL INFORMATION: IRP SITES SS-2/5/AOC-T, SD-47/SWMU 133, AND SS-60/SWMU 230: HOLLOMAN AIR FORCE BASE (HAFB).

December 13, 1999

The following comments from the Permits Management Program of the Hazardous and Radioactive Materials Bureau (HRMB), New Mexico Environment Department (NMED), relate to the March 1998 Characterization Summary and NFA Documentation Report for HAFB Solid Waste Management Units (SWMUs) 133, 230, and Area of Concern (AOC) AOC-T.

The language in **bold** print enclosed within quotation marks is taken directly from the text of the March 1998 document that HAFB submitted. HRMB's comments follow the quotations.

GENERAL COMMENTS

1. It has been documented in several reports, that after the Soil Vapor Extraction (SVE) system was shut down for several months, the concentration of contaminants rose above regulatory standards, and the system was reactivated. Such a circumstance occurs because contaminants can diffuse slowly from less permeable soils and interact with soil gas and ground water.

Without a long term monitoring program, it is difficult to determine whether cleanup levels have been achieved permanently. Therefore, after the acceptable levels of cleanup have been reached and the system is shut off HAFB should continue to sample the sites semi-annually for the same contaminants for two years. The monitoring results may be submitted in support of a no further action (NFA) request when the data suggest that the site is clean.

However, during the monitoring period, HAFB may be requested to restart the system if there is evidence that the results are above the cleanup levels.

2. Discussion for all three sites makes a general statement that "**measurements taken in various groundwater monitoring wells across the sites show no evidence of LNAPL on the groundwater table.**" More information is needed, in particular about the location of the groundwater monitoring wells in relation to the sites, the time frame in which the measurements were taken, and the actual results.

SECTION 2. HYDROGEOLOGIC SETTING

Description of the hydrogeologic setting in Section 2 is too general and expansive and does not provide information relevant to immediate NFA determinations. Given the wide ranging values for TDS extant in the Tularosa Basin, using average TDS values as a basis for disregarding or designating groundwater at specific locations as unfit for use is not

acceptable. Provide water quality information proximate to each location for which NFA documentation is being proposed.

Section 3. AOC-T [SITE SS-2/5 :POL YARD]

- 1) Anecdotal estimate of 1978 JP-4 spill and recovery is inadequate. Also, given that this single incident accounts for a fraction of the TPH recovered to date via soil vapor extraction (SVE), it is apparent that considerable and significant contamination has persisted over the 20+ years the site was in operation.

Provide documentation and inventory of specific volumes of the JP-4 spill recovered.

- 2) There is no supporting evidence of monitoring or sampling conducted to determine the extent of contamination beyond the immediate proximity of the bermed area, particularly down gradient with respect to groundwater flow in the direction of Dillard's Draw. None of the conditional no further action (CNFA) prerequisites has been demonstrated for any area outside of the immediate bermed area that may have been impacted by contamination resulting from the AOC-T (**the site**).

Delineate the horizontal and vertical extent to which surrounding vadose zone soils exceed Base-specific remedial goals.

- 3) Without supporting evidence, the general assumption that groundwater quality at a specific location is "**unfit for human consumption**" based on regional averages is inappropriate. Provide analytical data which demonstrates that groundwater at the site is brackish.
- 4) Given the proximity of Dillard's Draw to the site, the indicated direction and depth of groundwater flow, it is evident that contamination leaving the site may in fact pose an unacceptable risk to a potential ecological receptor. The statement that "**no complete groundwater exposure pathways are present**" is contradicted in Section 2 with regards to groundwater discharges occurring as "**....springs, or seeps along steep-sided arroyos...**". Explain the above discrepancy.
- 5) Page 3-3, **Figure 3-2** indicates that regional groundwater flow is predominantly towards the east of AOC-T, yet there are no monitoring wells or indications of monitoring taking place down gradient of the site. Explain how the groundwater flow direction was determined at this site.
- 6) Substantiate the assumption that the source of BTEX contamination present in groundwater eastward to Dillard's Draw results solely from contamination at the site, and not from contamination that has already left the site, which will continue to contaminate and degrade water quality.

- 7) **Table 3-1, Page 3-6, right column, fourth paragraph, "Soil samples collected in September 1996 indicated vadose zone soils had not yet been remediated to Base - specific TRPH level of 1,000 ppm".** The unit of concentration should be 1,000 mg/kg NOT ppm.
- 8) Page 3-4, Paragraph 3.3.1, indicates that a long-term groundwater monitoring program is in place and that it has demonstrated that groundwater quality has not been degraded down gradient of the site.

HAFB should provide more information, in particular on the location of the groundwater monitoring wells in relation to the site, the time frame in which the measurements were taken, and the actual results obtained.
- 9) Although one of HAFB's Base-specific remedial goals for achieving conditional NFA is said to be the **"removal of free-phase hydrocarbons from the groundwater surface"**, no discussion was found in Section 3.0 regarding the topic. HAFB should provide evidence that this goal has been achieved.
- 10) One of the Base-specific remedial goals is also to reduce benzene contamination levels in the vadose zone to less than 25 mg/kg. How was that value developed?

PARAGRAPH 3.3 SUMMARY OF RESULTS AND CURRENT CONDITIONS

- 1) Given the wide variability of groundwater quality throughout the regional aquifer, even across very short distances, the broad conclusion that the groundwater beneath/AOC-T/Site SS-2/5 is**"unfit for human consumption..."** is not sufficient proof that all groundwater beneath HAFB is unfit. Provide information in support of the above assumption.
- 2) Given that the existing and unremediated BTEX contamination in the groundwater is draining towards Dillard's Draw, justify the conclusion that **"No human or ecological receptor is or may be exposed to unacceptable risk from contact with the contaminated water..."**.
- 3) Provide information which demonstrates that existing contamination that has left the immediate proximity of the site will not continue to degrade groundwater off site.
- 4) Provide information which indicates that down gradient BTEX or TPH concentrations have not increased, as there are no monitoring wells or sampling locations down gradient from the site. The only indicated **"existing monitoring well"** illustrated in Figure 3-3 is located outside the path of groundwater flow, and according to the contour profiles, is located at or below the surface of the existing groundwater table.

- 5) Provide information which supports the assumption in Table 3-1, that biodegradation is, or may be, taking place.
- 6) Page 3-8: The assumptions used in the SVE model regarding a 47% "average" reduction in TRPH concentration are inappropriate given that in some cases the highest TRPH concentrations (e.g., Location SB-02 at 8-10 ft.) decreased to less than 25% over the 1.5 years when the SVE system was in operation from April 1995 to September 1996. Provide the basis for assuming that there is a 90% efficiency of the system in the model, and is in fact inappropriate for the tightness of the soils at the site. Re-evaluate the above information.
- 7) Re-examine the rectilinear "best fit" trend indicated in Figure 3-4 (1997 Extracted soil Vapor TPH Concentrations), because it seems inconsistent with the data which shows a widely fluctuating trend that appears to be stabilizing at a TPH concentration of 2500 ppm. The total TPH recovery indicated in Figure 3-5 contradicts the trivialized spills and contamination purported in the site description.

SECTION 4.0 SWMU 133 [SITE SD-47: POL WASH RACK AREA]

- 1) What solvents and detergents were used in the wash rack area between 1953 and 1980?
- 2) Provide a plot noting surface contours, direction of groundwater flow, and the location of drainage ditch to which contaminants were discharged.
- 3) **Section 4.3.1 Groundwater:** The conclusion that there is no plausible direct ingestion exposure pathway for humans does not support the conclusion that there is no risk to the environment. Provide the rationale for the above deduction.
- 4) The assumption of microorganism degradation of the TPH contamination based on the oxygen utilization rates provided is not evident. The availability of other essential nutrient constituents such as available potassium and nitrogen have not been substantiated. Reported changes in O₂ and CO₂ are for the most part so insignificant as to be within the margin of error for analysis. Provide a rationale for the statement regarding the availability of potassium and nitrogen at SWMU 133.
- 5) Pages 4-10, and 4-11, and "Figure 4-5". The collection of one sample in 1997 is all that is presented to verify that the SWMU 133 is clean. No location for this sample is given. There were no samples collected from the small area to the south of the bioventing remediation site. Is this area impacted, if not where is the contaminated site?

SECTION 5.0 SWMU 230 [SITE SS-60: BUILDING 828]

- 1) What is the status of the remaining underground unleaded gasoline tank? There is no indication anywhere in the Report that the tank was removed or replaced. Provide a plot noting surface contours and the direction of groundwater flow.
- 2) If there were persistent leaks of diesel and JP-4 and at the storage tanks located at SWMU 230 prior to the catastrophic 4,000 gallon release, why is the plume limited to the dispensing area, with no indication of contamination in the storage tank area (Figure 5-2)?
- 3) Trend line in Figure 5-6 does not appear to be an accurate fit or estimate of trend for the data. Re-evaluate the plot.
- 4) A comparison of the 1997 sampling event (Table 5-4, Figure 5-7) and the plume delineated in Figure 5-2 indicates that these sampling locations are located at the margins of the contamination, with correlation to the centroid of the contaminated areas (Table 5-2). Please provide information on the analytical samples taken at the center of the impacted area.
- 5) Page 5-5, Paragraph 1, Section 5.3.1, Third sentence: “... **the LNAPL thickness was removed in September of 1996 and field observations indicate there is no free-phase LNAPL at site SS-60.**”

Has HAFB conducted any confirmatory sampling of LNAPL besides field observations? If not, HAFB should carry out soil sampling and provide confirmation sample results instead of field observation, to show that the LNAPL plume has indeed been removed.

- 6) Page 5-5, Paragraph 1, Section 5.3.1, Last sentence: “**Additionally, measurements taken in various groundwater monitoring wells across the site show no evidence of LNAPL on the groundwater table.**”

The results of groundwater monitoring wells across the site can be used as evidence of the removal of LNAPL. HAFB should submit the analytical results that support the claim given above.

MISCELLANEOUS COMMENTS ON AOC-T, SWMUs 133 AND 230:

- 1) The concentrations of benzene in soil do not equate to concentrations of benzene in water. i.e., Base-specific standards do not equate well to the protection of the environment and human health with respect to water contamination.
- 2) The extent of contamination in each of these sites does not appear to be based on soil and groundwater monitoring, or measurements sufficient to define boundaries as indicated, either by direct verification or extrapolation of existing data.
- 3) The copy of Fax transmittal to Diana Spence from Pam Moss (Foster Wheeler header) included in the appendices specifically asks that tests for alkalinity, pH, iron, phosphorous, TKN, etc., be omitted from analysis. All of this information should be used as the basis for supporting microbial activity with respect to TPH degradation. Provide information on the above parameters at all the sites in question.