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August 23, 1994

Scott E. Streifert, Major, USAF
Director, Environmental Management Division
377 ABW/EM, 2000 Wyoming Boulevard SE
Kirtland Air Force Base, NM 87117-5659



STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

Dear Major Streifert:

RE: New Mexico Environment Department (NMED) Defense/State Memorandum of Agreement (DSMOA) Program response to the Stage 2A RCRA Facility Investigation (RFI) Report, dated December 1993.

The NMED DSMOA staff have reviewed the report mentioned above and offer the following comments.

General comments:

1. Section 3.4.1.6, Page 3.8, Paragraph 1, "When explosivity meter readings exceeded levels ..." Please explain the presence of the explosive vapors encountered at sites 1,2,3,4,10,11, and 15. The vapor measurements referred to in this section could not be located in section 4.

If there is in fact any explosive hazard associated with these landfills it must be considered in the conclusions and recommendations sections of the RFI report.

2. Section 3.5.3.2.2, Page 3.14, Paragraph 6, "Method Detection Limit Studies are..." This sentence references a table of project detection limits that is not referenced in the "LIST OF TABLES", nor is it found in the text. Please explain.
3. Section 4.1.1.1, Page 4.2, Paragraph 4, "Trip blanks (one per cooler) were..." Presumably this section may call into question the validity of a number of environmental samples. The analytical results of the trip blanks could not be located in the Quality Control Report for Site 1 (Appendix G, Section 4). Please specify what response, if any, was made concerning the contaminated trip blanks.
4. Please include in Volume I an explanation of how the field or sample identification numbers are associated with the bore hole or monitor well numbers.
5. Please bear in mind that the New Mexico Solid Waste Management Regulations (SWMRs) are applicable and/or relevant and appropriate regulations (ARARs) for the

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KAFB1478



landfill and dump sites. The current regulations (EIB/SWMMR-4), filed on July 18, 1994, became effective on August 18. Below is a list of the three previous versions of the Solid Waste Management Regulations with their effective dates:

- SWMR-1 May 19, 1974
- SWMR-2 May 14, 1989
- SWMR-3 Jan. 31, 1992

KAFB must identify which of the above regulations was in effect when landfills or dumps were closed and abide by the relevant closure and post closure requirements. Another ARAR that could apply to dump sites is section 2-201 of the Water Quality Control Commission regulations which prohibits refuse in natural watercourses.

6. The practice of creating different site numbers for each report is exasperating. We have objected to this in the past and reiterate our objection. All other DOD facilities in New Mexico use the standard WIMS and SWMU numbers to identify sites, and these site numbers stay the same for all documents.
7. We cannot accept the UTL calculations for nitrate + nitrite, in particular, because we believe that currently up-gradient wells may not be uncontaminated because of the ground water gradient reversals that have occurred. Based on other available data in the Albuquerque area we find the proposed UTL of 9.8 mg/L as N implausible, and for the reason given, question the reliability of the other ground water UTLs. As will be discussed in more detail below in site-specific comments, we believe the nitrate/nitrite levels at McCormick ranch indicate ground water contamination and are not background at all.

Please clarify why, if it appears from literature (as mentioned on page 4.17) that a UTL of as much as 5 ppm would be plausible for beryllium, the actual calculated UTL is 0.6 ppm. It is not clear why, if the beryllium is indeed naturally occurring, the observed background values seem to be statistically below the values observed in at least some of the areas of contamination.

8. It would be helpful if values above UTLs for inorganic analytes were flagged in some way in the data tables, and some explanations suggested for their significance - in other words, do they just indicate some solid waste residue in the sample, or some different soil condition in that area, or do they suggest areas of higher-risk contamination?

Site specific comments:

Landfill 1

1. Section 4.2.1.5.4, Page 4.44, Paragraph 2, "TOX was detected at concentrations of..." Halogenated hydrocarbons in monitor well KAFB0107 have shown an order of magnitude increase in each of the last two sample rounds. This must be mentioned as a concern in the "conclusions and recommendations" section and the chlorinated compounds must be identified. We suggest the TOX analyses be discontinued in favor of more specific analyses.
2. Table 4.2.1.1, Page 4.26. Field sample ID #s KAFB011301-1, KAFB011403-1 and KAFB011703-1 seem to have an inordinate number of inorganic constituents above the upper threshold limit. Several samples exhibited beryllium above the UTL. Please explain the significance of these numbers and, if appropriate, include this as a concern in the "conclusions and recommendations" section.
3. Section 4.2.1.4, Page 4.23, Paragraph 2, "The local slope of the water table is..." Because of the proximity of KAFB production well #2, we suggest annual monitoring of at least the downgradient monitor wells at Landfill 1, and/or at least annual monitoring of production well #2.

Landfill 2

4. Section 4.2.2.1, Page 4.48, Paragraph 5, "The landfill contains general refuse..." Please reference any information pertaining to the contents of this landfill.
5. Section 4.2.2.2, Page 4.50, Paragraph 6, "The hand-auger soil samples were..." This section on previously collected data mentions locations of contaminated soil samples but it does not locate them with respect to current sample locations. It would be helpful if each successive report would locate previous sample locations.
6. Section 4.2.2.2, Page 4.51, Paragraph 1, "Total recoverable chromium..." Please explain in more detail whether this chromium value, which exceeds both the UTL and MCL, indicates contamination.
7. Section 4.2.2.3, Page 4.51, Paragraph 2, "Locations of borings, monitoring wells..." This paragraph incorrectly references figure 4.2.1.1 (should be 4.2.2.1).

8. Section 4.2.2.3.1, Page 4.52, Paragraph 1, "Contaminants in the unsaturated zone are expected to move west..." As this statement may influence future corrective action, please elaborate on this principle in the "Environmental Setting" section of this report, including any available information about how many of the sites it would apply to.
9. Section 4.2.2.3.3, Page 4.52, Paragraph 3, "Shallow soil conductivities provided an indirect measure of dissolved-solids concentrations indicating that potentially contaminated fluid was migrating from the landfill." Please explain this in a little more detail and discuss any evidence confirming or refuting these findings.

Landfills 4,5,6

10. Section 4.2.3.1, Page 4.73, Paragraph 1, "Site 3 is located on the north-central..." Landfills 4-6 have distinctive characteristics and histories that would influence the interpretation of data in the report. Please provide a map showing the location of these landfills within Site No. 3.

Fire Training Area

12. Section 4.2.4.2, Page 4.98, Paragraph 3, "All 19 TOX values were within the range of background values." Please explain why there would be any background organic halogens.
13. Section 4.2.4.7, Page 4.115, Paragraph 1, "Data from the soil analyses suggest only minor...contamination". The conclusion suggests that only minor amounts of contamination exist, contrary to evidence from previous field investigations. The report should more thoroughly outline and incorporate earlier findings, and suggest an explanation for any marked differences. Please clarify whether the vertical extent of contamination below FTA-10 has been determined; contaminant concentration maps and sections would be helpful.
14. Section 4.2.4.7, Page 4.115, Paragraph 4, "Data from the ground-water..." Discontinuation of ground water monitoring at the Fire Training Area would depend on satisfactory demonstration that the complete extent of contamination is known.

Golf Course Pond

16. Section 4.2.6.2, Page 4.128, Paragraph 5, "Wells KAFB0602 and KAFB0610 are constructed with screen set deeper into the saturated zone." KAFB must detail how the screened intervals

differ in relation to the water table and how this might effect a comparison of water quality data. Why are construction diagrams not provided in Appendix C for the monitor wells at Site No. 6? Are the anomalous flow directions presented on Figure 4.2.6.2 a result of the inconsistencies in screen depth?

18. Table 4.2.6.2. Please explain the significance of the elevated levels of heptachlor epoxide in the ground water, sampled on May 12, 1992 in KAFB0602. The measured quantity of 0.23 mg/L exceeds both the Federal SDWA MCL and the RCRA/HSWA action levels.

McCormick Ranch

20. We have serious and general concerns about the adequacy of the investigation of this site. Our principal objection is that the samples taken are a great distance from the probable contamination sites, and do not establish either the extent or nature of contamination.

Far from demonstrating acceptable levels of contamination at this site, the nitrate/nitrite levels observed, given the distance from the release site(s), almost certainly indicate ground water contamination in excess of New Mexico's water quality standards for nitrates, and suggest the possibility of contamination with other explosives.

It is unacceptable that no mention is made in the report of the nature of activities and potential releases at the McCormick Ranch site, including the placement of tonnage amounts of explosives very near the water table and at least on one occasion in 1972, the washing out of some 15,000 lbs. of unexploded ammonium nitrate from such a placement. It is also unacceptable, given these potential releases, that no investigation has been undertaken in the vicinity of the actual release sites. Future work at the site must sample for ground water contamination where it is likely to be found, and must address the potential for vadose zone contamination in the potentially contaminated areas. Sampling around the edge of the entire "site" area will not suffice.

We do not understand the statement on p. 4.169 that drilling would pose a safety concern, if drilling is routinely undertaken for the placement of new explosive charges in testing. We believe that various means may exist for collecting soil and ground water samples in the area(s) of concern at this site.

Abandoned Landfill

21. Section 4.2.11.4, Page 4.196, Paragraph 4, Conclusions and recommendations. It is not clear that the limited geophysical investigation at this site really demonstrates the absence of contamination. If any other information is available it should be discussed in more detail; or alternatively some limited on-the-ground investigation such as statistical random sampling or limited trenching might settle the issue.

Manzano Dump

22. Section 4.2.13.5, Page 4.220, Paragraph 4, Conclusions and recommendations. It is not clear what relationship, if any, the five on-site boreholes have to any evidence of possible contamination (staining, trenches, etc). This should be explained, since the information presented does not clearly establish the extent of contamination.

The black stained areas should be analyzed, along with any other areas showing any evidence of contamination.

Landfill B

24. Section 4.2.18.7, Page 4.271, Conclusions and recommendations. It is not clear that three on-site boreholes are enough to satisfy any of the objectives mentioned in section 4.2.18.3. Please explain if other information such as field screening or visual indications is available, and if not, how the three individual boreholes can accomplish the objectives.

As you are no doubt aware, disposal of the ITRI animal carcasses must comply with the New Mexico Solid Waste Management Regulations.

If you have any questions about the above comments, please contact me at 827-4308, or David Morgan at 827-2754.

Sincerely,



Stephen Pullen
NMED DSMOA group

XC: Nancy Morelock, EPA Region 6