

KAFB 94

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CEMRO-ED-EA

3 June 1994

MEMORANDUM FOR: Commander, 377th ABW/EM, ATTN: LTC George Pratt,
2000 Wyoming Blvd. SE, Kirtland AFB, NM 87117-5659

SUBJECT: Comments on the RCRA Facility Investigation (RFI), Stage 2A, dated
December 1993

1. Enclosed are comments on the above referenced report. We appreciate the opportunity to review and comment on documents that will assist us in future activities. Hopefully these comments will be helpful in finalizing the document. It would be appreciated if we could receive written responses to our comments, but since this is not our contract or contractor, we will leave that decision up to you.

2. If there are any questions concerning this information, please contact Mr. Larry Janis at telephone (402) 221-7674.

FOR THE COMMANDER:

Encl

S. L. CARLOCK, P.E.
Chief, Environmental Branch
Engineering Division

CF (w/encl):

HQ, 377th ABW/EMVR< ATTN: Mr. Chris DeWitt, 2000 Wyoming Blvd. SE, Kirtland
AFB, NM 87117-5659

CEMRO-ED-EG (Naraine)

CEMRO-ED-EH (Frye)

CEMRO-ED-GH (Pearson)

CEMRO-MD-HF (Reckmeyer)

KAFB1424



2 June 1994

MEMORANDUM FROM: Larry D. Janis, Technical Manager, Corps of Engineers

SUBJECT: Comments on RCRA Facility Investigation (RFI), Stage 2A, December 1993

1. The following are comments on the above mentioned report:

- Page 1.3, table 1.1.1 lists 24 sites by priority ranking of potential contamination. The text does not state what scoring mechanism was used. Most likely it was HARMS, which has since been deemed a poor way of ranking sites. Regardless of the method, what does this listing add to the text? What hypothesis does it help support? I would suggest that it be removed, unless further information can be provided about the relevance of this information.

- On page 1.5, last paragraph the text states that each site was designated a "USGS Site Number". It seems that these sites already have enough numbers associated with them, why would the USGS also need a number. It is suggested that these numbers be deleted and only the IRP or EPA number be used.

- The color maps are helpful in the delineation of geologic zones and special areas. This is a nice touch.

- On page 3.3, section 3.3.5 it is mentioned that you rinsed with a methanol solution. How was this disposed of? Isn't methanol a hazardous waste? Was this necessary or could another solution be used?

- In reference to the NTU's on page 3.6, section 3.4.1.5, some EPA regions are requiring that the 20 or less be met. They believe that it is either faulty development or sampling that causes this and are recommending a low flow peristaltic pump be used rather than a bailer. It is their belief that this will reduce the disturbance that is caused by an improperly introduced bailer. It may be something to consider next time.

- In section 4.1.1.1, page 4.2, under equipment blanks you state that iron, manganese and zinc are not of much concern. I believe that this statement needs more justification. Also I was puzzled with the statement a couple of paragraphs later about trip blank contamination. If trip blanks register contamination then I believe that something was wrong in the transporting of the samples. Nothing was stated concerning this contamination other than it occurred in the field. Please clarify further.

- On the bottom of page 4.2 the report makes mention of missed holding times. Was this further explained in the quality ITIR? If not it should be further explained here. The statements made here make me believe that much of the volatile data may be unusable. Please add further details.

- At the top of page 4.4 the text again references "several" surrogates were not

within control limits. Was this explained in another report. Again it raises questions about the credibility of the data. Please explain this problem further.

- On page 4.17 it is recommended that further study of beryllium be done or the content of beryllium in other soil samples (other studies) be looked at to explain the high content. Why wasn't the later recommendation conducted by USGS. It seems like a simple thing to do to eliminate this question about beryllium? Please research this for the final report.

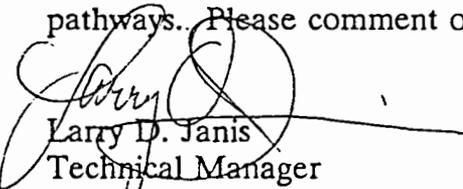
- On page 4.19, section 4.2.1.1 the site description includes the statement "...with some evidence of hazardous materials...". This is not referenced to any document or source. Please include the source of this in parenthesis. This is done quite a few times in the site description paragraphs for the other sites. Please document all statements referring to potential hazardous wastes.

- A general comment would be that there are no site maps showing the locations of the borings, wells, soil gas surveys, etc. It would be helpful to provide a map with this information on it. It would give the reader a better feel for the extent of contamination. Please explain why they are not used or add them for the final report.

- On page 4.46, section 4.2.1.6 the statement about the potential of groundwater contamination making its way thru a thick vadose zone is pretty bold. Please explain the purpose of this statement given that in the next statement it is said that contaminant migration is not probable. These seem to conflict with each other. A specific example would be the statement on page 4.94, section 4.2.3.6, "...contaminants found in the monitor(ing) wells at this site indicate the potential for contamination of groundwater." How can this be? With the conditions at the site (dry, arid, clay, cliche, etc.) and the depth to groundwater (370 feet) I would think that there would be no driving force and enough of a retarding factor to prevent the migration of contaminants. Please explain this statement.

- The statement in section 4.2.1.7 about Manganese probably being a natural constituent of the soil seems to have no backup to it. I would probably agree with the statement, but there needs to be further justification of that statement.

- On all of the sites there are recommendations for further investigation based on the results of the investigation. Please explain why these come so early. I believe that a risk assessment, using RCRA guidelines should be done, first. I believe that this would eliminate the need for some of the additional investigation, solely based on incomplete pathways. Please comment on presenting recommendations this early in the process.


Larry D. Janis
Technical Manager
Technical Management Section A
Environmental Branch
Engineering Division

To: Larry Janis, CEMRO-ED-EA
From: Sandy Frye, CEMRO-ED-EH
Re: Table 1 Stage 2A RFI Report, Kirtland AFB, NM
Date: 20 May 94

Review Comments:

1. Cover page Disclaimer.

As I commented on the Tijeras Arroyo RFI, I don't think it is appropriate to put a disclaimer in the report.

2. Executive Summary, general comments.

-- It is confusing to have so many site numbers assigned to each site. It has been my experience that EPA reviewers are only interested in the SWMU numbers and not IRP or USGS site numbers (since RCRA is the regulating statute for the RFI). It would be helpful to list sites by their SWMU number, or at least provide the reviewer a reference as to which SWMU is being discussed in each section to eliminate the need for constantly referring to Table 1.

3. Page ES.9, top of page.

The recommendation for the Tijeras Arroyo in this report does not coincide with the recommendation made in the Tijeras Arroyo ITIR report that I reviewed previously. The two reports should reflect the same conclusions.

4. Table 1.1.1, page 1.3.

Please be more specific in describing what type of "priority ranking" these scores represent. The values are not indicative of DPM scores and since they were done in 1981 they are not HRS2 scores. If they are HARM scores they are not of much use and should be deleted from the report.

5. Section 1.2.3.2, page 1.9.

It does not appear as though the objectives listed in this section were met during the investigation. For all the landfills, only soils at the perimeters of the sites were analyzed. Without sampling/characterizing soils beneath the trenches it cannot be stated with any certainty whether or not contamination exists in the vadose zone. (EPA is not going to agree that nature and extent has been defined until such data is available.)

6. Section 3.1, page 3.1.

Hopefully one of the DQOs was to collect adequate data of sufficient quality to determine nature and extent of and risk from site contaminants.

7. Section 3.3.5, page 3.3.

Spent methanol is a RCRA F003 listed waste and should not be used for decontamination. But since it was, it is important the base be informed of exactly how USGS disposed of said methanol and whether or not they mixed it in with the other decontamination fluids.

8. Table 4.1.3.1, page 4.13.

Some of the action levels listed in this table are not correct. The following action levels should be as listed:

-- Cadmium	80 ppm
-- Di-n-butylphthalate	8000 ppm
-- 2-Butanone	4000 ppm

Also, ethyl benzene (8000 ppm), 4-methyl-2-pentanone (4000 ppm) and any other contaminant found at the sites having RCRA action levels need to be added to this table.

9. Section 4.1.4, page 4.17.

A section similar to this one for manganese would be helpful in justifying that the metal is not site related as it was frequently detected at most of the sites at levels above the UTLs.

10. Section 4.2.1.5, page 4.23.

In this section (and elsewhere in the report) some detected analytes are assumed to be laboratory contaminants. While this is indeed probably the case, there are certain EPA criteria that need to be met before a contaminant can be eliminated as a chemical of concern based upon laboratory contamination. These criteria have not be evaluated in the report and without doing so there is no validity in elimination of chemicals based upon "possible" lab contamination.

11. Action level listing, page 4.33.

The action level for tetrachloroethene should be 13.7 ppm based upon carcinogenicity. The 800 ppm listed is based upon noncarcinogenic health effects and is not consistent with how other action levels were determined (i.e., for other contaminants carcinogenic action levels are listed if available).

Also, the text above the table states that there is not action level for 2-butanone. This is not correct and the action level listed in the table should be 4000 ppm. The action level for 4-methyl-2-pentanone (MIBK) should be 4000 ppm.

12. Section 4.2.1.5.1, page 4.35, last paragraph on page.

The action level for di-n-octylphthalate should be 1600 ppm.

13. Section 4.2.1.6, page 4.46.

For this section and others, the list of potential receptors seem to be a bit deficient. Have trespassers, future construction workers, site workers, etc. been evaluated? If there have been agreements made with EPA as to land usage then the list may be adequate as is. If not....

Also, nowhere in the report are environmental receptors addressed. One of the DQOs is to evaluate risk to human health and the environment and this usually includes ecological receptors.

14. Section 4.2.4.5, page 4.101.

Here and in other sections there seems to be an awful lot of bizarre QC blank contamination (mercury, radium, gross alpha, gross beta, etc.) It would be helpful if a table were presented for each site listing the QC blank contaminants and the type of blank they were associated with (field, trip, method, etc.). This would eliminate the need for digging through Appendix G to find the information. If this type of contamination is being found in the method blanks I would say the lab has some very serious problems that may impact the validity of the data.

15. Section 4.2.7.2, page 4.140, third paragraph.

The action level listed for lead is 32 ppm. I would be interested to know exactly how this level was established as EPA has pulled the RfD and slope factor for lead. Please indicate what data this value is based upon.

16. Section 4.2.16.7, page 4.249.

The report indicates that heptachlor epoxide was detected. SW846 analysis for semivolatiles does not normally include a standard for heptachlor epoxide. Therefore, it probably was detected as a TIC. If that is the case, then quantification of the pesticide is questionable at best. If heptachlor epoxide was detected using method 8270, there is a good possibility it is present at fairly significant concentrations. It is probably a good bet that pesticides are present at many of the sites (8270 for semivolatiles will not detect most pesticides other than as an occasional TIC) and since 8080 (pesticides/PCBs) analysis wasn't performed for any of the sites the status of any pesticide contamination is totally unknown at this time. I would ensure that method 8080 is run for any follow-on work at the sites.

The third paragraph states that heptachlor epoxide was detected in groundwater but no contaminants were detected on site. This is conflicting. Heptachlor epoxide was detected in surface water from the lake. Please correct this discrepancy.

May 26, 1994

To : Larry Janis, CEMRO-ED-EC

From: Nick Naraine, CEMRO-ED-EG

Subject: Kirtland AFB, NM. RFI Phase II, Stage 2A 18 IRP Sites dated December 1993.

The Work Plan for Phase II, Stage 2A was not available so these comments are made with the assumption that the Work Plan was adhered to.

Also regulators may see things differently and may express their views and requirements.

This RFI was implemented to investigate multiple potentially contaminated sites and to make recommendations regarding further investigation or remediation where contaminants exceeded the accepted safe level for humans and /or the environment.

Of the 18 sites, eight (8) sites were considered clean and require no further action.

The ten (10) sites for further work are discussed below followed by discussions on the eight (8) sites that the Contractor suggested no further action.

The recommendations are from the Executive Summary, pages ES 6 thru 10, Volume 1.

1. **Site 1, Landfill No. 1.** Recommendation #3 for additional drilling and sampling should specify what analyses should be performed. Previous work had no samples collected from within the actual landfill so Pesticides/PCBs and Herbicides should be added to the VOCs, SVOCs, Metals (TAL), and TPH.
2. **Site 2, Landfill No. 2.** Recommendation #3 for additional drilling and sampling should specify what analyses should be performed. Previous work had no samples collected from within the actual landfill so Pesticides/PCBs and Herbicides should be added to the VOCs, SVOCs, Metals (TAL), and TPH.
3. **Site 3, Landfills Nos. 4-6.** Recommendation #2 for additional drilling and sampling should specify what analyses should be performed. Previous work had no samples collected from within the actual landfill so Pesticides/PCBs and Herbicides should be added to the VOCs, SVOCs, Metals (TAL), and TPH.
4. **Site 4, Fire Training Area.** Since bioventing test is underway then the recommendation for no further action is appropriate. The metals analyses identified no major metal contaminant of concern except beryllium and manganese which are naturally occurring.
5. **Site 8, EOD Range.** Recommendation #2 must specify VOCs, SVOCs, Metals, TRPH and Explosives for additional testing.
6. **Site 9, Tijeras Arroyo.** Agree with recommendation #1 for continued monitoring

of well KAFB0902.

7. **Site 10, McCormick Ranch.** Agree with recommendation #1 except that since previous samples were taken from the perimeter, the next samples taken from within the area used for testing should be analyzed for VOCs, SVOCs, Metals and Explosives.
8. **Site 11, Landfill No.3.** Recommendation #3 for additional sampling should specify what analyses should be performed. Previous work had no samples collected from within the actual landfill so Pesticides/PCBs and Herbicides should be added to the VOCs, SVOCs, Metals (TAL), and TPH.
9. **Site 14, Manzano Sewage Lagoon.** To resample as recommended suggests that the lab data is not reliable. It should be established after reviewing the lab data and QA duplicate data if those are truly lab contaminants or not.
10. **Site 19, Lake Christian.** To the resampling plan, Explosives should be added.

The following sites were recommended for no further action.

1. **Site 5, Sewer Lagoons.** Stage II Phase 2 had soil samples collected. Contractor did not discuss the soil analyses but went ahead on Phase 2A for groundwater analyses only. Unless the previous soils data of Phase 2 is presented or a justification of why there were no soil samples in Phase 2A, then further soils analyses is warranted.
2. **Site 6, Golf Course Pond.** Further groundwater monitoring may be required as recommended.
3. **Site 13, Abandoned Landfill.** Stage 2A was only geophysics. No previous IRP investigation at this site. There seems to be some confusion as to the earlier use of this site. Besides being used as a landfill for general refuse it may have been used for bombing practice. It does show that further investigation is needed.
4. **Site 15, Manzano Dump.** Soil samples were analyzed for Metals, VOCs and SVOCs. It would seem that at least TPH if not Herbicides and Pesticides should be of concern.
5. **Site 17, Fill Area Southeast of Kirtland.** This site was used for the disposal of construction rubble, oil cans, fibrous roofing material etc. The same comment as in Site 15 applies. A wider range of testing should have been done.
6. **Site 18, Unnamed Dump.** No further action seems appropriate. However the samples were hand augered shallow soil samples and deeper soil sample analysis may be required.
7. **Site 20, Landfill A.** No further action seems appropriate unless the absence of TPH

becomes a requirement.

8. Site 21, Landfill B. Same comment as above, Site 20 applies.

General Comments:

On the eight (8) sites that the contractor recommended no further action, many had no previous IRP investigation or any previous analytical data. It is possible that a regulator may require additional analyses, TPH as an example. Many of the Landfills had soil samples only so groundwater data may be required.

Neither the Sampling and Analysis Plan (SAP) nor the Field Sampling Plan (FSP) or the Quality Assurance Project Plan (QAPP) was available for review. However, by reviewing Section 3.5 and 3.6 of Volume 1 some of the elements of a SAP are present. Elements presented are :

1. Sample Collection
2. Sample Preservation
3. Laboratory Activities, Table 3.5.3.2.1 Analytical Methods
4. Laboratory QA/QC
5. Field QA/QC

Section 3.5.2 Sample Preservation, page 3.12 indicated that "most of the samples were chilled by ice..." suggested that some samples were not chilled but not why.

Section 3.5.3.2.2, page 3.14 referred to a Table of Detection Limits, Table 3.5.3.2.2 which is missing. However, Appendix G lists all the detection limits used.

Section 4.0 Results, Conclusions and Recommendations has Section 4.1 summarizing the data for QC samples. Some areas covered are Holding Times, Laboratory Blanks and Lab. Control Samples, Matrix Spike and Matrix Spike Duplicates, Surrogate Spike Recoveries, Equipment Blank and Trip Blanks.

The chemical analyses were performed by ENSECO-RMAL, Denver, CO. From reviewing four complete data sets from Appendix G, I find the presentation to be excellent. Each data summary sheet is complete with detection limits, quantitation limits, action levels (some were missing), and all blank samples.

All analytical methods were properly identified.

The data reviewed from Appendix G supported the summary tables in Volume 1.

Included in each site investigation are data for sample identification cross-reference list, summary of extraction and analysis dates, and chain of custody forms.

7 June 1994

To: Larry Janis, ED-EA

From: Steve Pearson, ED-GH

Subject: RCRA Facility Investigation (RFI) Stage 2A Technical Report, Kirtland Air Force Base, New Mexico, December 1993, Comments.

1. General.

It appears that these sites will require much more characterization before a decision can be made regarding closeout or remediation. Minor amounts of contaminants were reported at most sites, however, many of the sampling locations were not placed in areas where most of the contaminants would be expected to occur. Additional site specific sampling will be required to more fully characterize these sites.

2. Section 3.4.1.4 Monitoring well construction.

The wells were drilled by mud rotary methods using a bentonite based mud. No discussion is made regarding displacement of the drilling mud from the boring prior to drilling the screened interval or prior to installing well materials. I assume the mud was displaced with clean water before drilling the screened interval to TD or before installing the screen and riser. If this was the method used, then the volume of water added should be recorded and an equal volume removed during development. This would also apply to fluid losses while drilling.

3. Section 3.4.1.5

If the total depth of the hole was drilled with bentonite how effective was well development in breaking up the filtercake built up on the borehole wall. Were any dispersants added? Compressed air surging and bailing may not be very effective at breaking down the wall cake.

4. Figure 3.4.1.4

Why were centralizers used only on the screen and not on the riser to ensure the well is plumb all the way to the surface.

5. Section 3.4.1.4

All wells were completed with 25 feet of well screen except for two (KAFB0307 and KAFB0310); what was the rationale or reason for the change in the design of these wells.

6. Section 3.7.1

Were the borehole geophysical logs used as an aid in determining depth to the water table prior to screen placement?

7. Section 3.5.1.3 Ground water samples.

Sampling protocol as discussed indicates that a transparent bailer was used prior to sampling to determine if an immiscible layer indicative of floating hydrocarbons is present in the well. However, in the instance of 6 wells, the well screens appear to be placed completely below the water table. In these cases it would not be possible to intercept a floating product layer.

8. Section 3.7.2

It appears the surface geophysical surveys provided a reconnaissance tool to determine if a landfill was present; it does not appear that the grid lines were closely enough spaced to provide detail on trench boundaries and specific concentrations of metals/debris.

9. Section 3.7.3.

Given the large site areas to cover, it appears the soil gas provided only a quick reconnaissance of potential contaminant problems that may exist in the vadose zone. A more detailed survey on a regular grid spacing is probably necessary to characterize the site.