



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

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Ms. Barbara Hoditschek
New Mexico Environment Department
Program Manager, RCRA Permitting
Hazardous and Radioactive Materials Bureau
1190 St Francis Drive
PO Box 26100
Santa Fe NM 87502


Dear Ms. Hoditschek

Attached is our response to your 18 Apr 94 letter concerning the Notice of Deficiency (NOD) issued with respect to the Landfill #5 RFI Work Plan. In accordance with specific guidance obtained in earlier telephone conversations with Ms. Lee Winn of your staff, our response directly replies to the questions listed in the NOD.

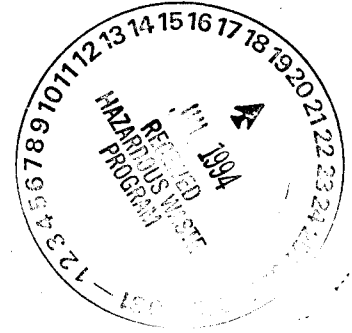
With your consideration, we request the attached response and our Draft RFI Work Plan submittal of 15 Dec 93 become the approved RFI Work Plan.

If you have any questions, please contact Mr. Sandi K. Mukherjee, P.E. at (505) 784-4639.

Sincerely


CHRISTOPHER S. LONG, Colonel, USAF
Commander, 27th Support Group

1 Attachment:
Response to NOD



**RESPONSE TO COMMENTS FROM NMED
RCRA FACILITY INVESTIGATION LANDFILL NO. 5 (SWMU NO. 113)
AFFECTED PAGES TO DRAFT PHASE I RFI WORK PLAN
CANNON AIR FORCE BASE, CLOVIS, NEW MEXICO**

Comment 1. Response to general comment number 1.

The purpose of a RCRA Facility Investigation (RFI) is to obtain information to fully characterize the nature, extent and rate of migration of releases of hazardous waste or constituents and to interpret this information to determine whether interim corrective measures and/or a Corrective Measures Study may be necessary. In order to fully serve the purpose of an RFI four objectives must be met:

- A. determine whether releases of hazardous waste or hazardous constituents have occurred from the Resource Conservation and Recovery Act (RCRA) regulated unit(s) and/or RCRA Solid Waste Management Unit(s);
- B. if releases have occurred then the facility must determine the nature (chemical composition and direction), rate (vertical and horizontal) and extent (vertical and horizontal) of those releases;
- C. identify and collect data necessary to determine the potential threat to human health or the environment, and
- D. identify and collect data necessary to determine whether interim corrective measures are necessary and to support the evaluation and selection of the final Corrective Measures Study.

There are several conflicting statements about the objective(s), goal(s), intent, "focus", etc., of the RFI throughout the text of Volume I and II of the draft Phase I Work Plan which must be clarified by CAFB. Please provide a clear statement of the objectives of the RFI, how the RFI will address the four objectives listed above, which of the four objectives Phase I is to address, and fully describe any additional phases which may be required to fulfill the stated objectives.

RESPONSE:

Cannon AFB recognizes that items a. through d. above need to be addressed as the purpose for conducting the RFI. A clear statement of these objectives will

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be provided in the Introduction, Section 1.0 of the Phase I Work Plan, Volume I. These four objectives will be addressed through the performance of a potentially multi-phased RFI for Landfill No. 5 as was discussed and agreed upon during meetings with NMED in Santa Fe, NM on 15 December 1993 and as was discussed in the responses to NMED's first comments on the Draft Phase I RFI Work Plan for Landfill No. 5. Further clarification on the phased investigation approach was presented to NMED during our 19 May 1994 meeting in Santa Fe.

Clarification which will include a clear statement of which objective(s) Phase I will address and how the remaining objectives (1b., 1c. and 1d.) will be addressed in potential subsequent phases of investigation, will be provided in the Introduction to the Phase I RFI Work Plan. To aid in this clarification, Cannon AFB will also include a more detailed decision flow diagram as Figure 4-2 in the work plan which outlines the Phase I investigation presented in this Work Plan and add additional text to Section 4.1 of Volume I discussing the decision flow diagram. The decision flow diagram will also present potential activities for future phases dependent upon the outcome of the Phase I RFI for Landfill No. 5. A preliminary copy of the decision flow diagram has been sent to NMED for review and comment.

During our 19 May 1994 NMED presented additional clarification for this comment regarding the "conflicting statements about the objective(s), goal(s), intent, "focus", etc., of the RFI throughout the text of Volume I and Volume II". NMED indicated that they did not clearly understand why the "objectives" were stated using different wording in several places within the text (i.e., in the Introduction to Volume I, Volume I-Section 4.1, and Sections 2.1 and 2.2 of Volume II). Cannon AFB explained that the "RFI objectives" are presented using different wording in the Introduction versus Section 4.1. The Introduction is meant to summarize the content of the Work Plan as a whole, not to reiterate the complete text, and that substantively there is no difference in the "RFI objectives" as presented in the Introduction to Volume I and Section 4.1. However, there is a different set of objectives for the collection of data which is presented in Sections 2.1 and 2.2 in Volume II. Cannon AFB will modify the text as appropriate in these sections to clarify the objective(s), goal(s), intent, and focus.

Comment 2. Response to general comment number 2.

This RCRA Facility Investigation is intended to be conducted through a phased approach. Depending upon the results from any phase of the investigation, additional sampling and analysis may be required to adequately assess the composition, rate, and extent of contaminant releases, determine the potential threat to human health and the environment, and support any interim corrective measures and the Corrective Measures Study (CMS). Additionally, NMED may

require additional ground-water monitoring wells and/or vadose zone monitoring to adequately detect releases from SWMU #113, as part of the chosen corrective measure(s).

Provide specific data quality objectives (DQOs) which address specifically items 1. a-d above as well as how these objectives will be divided into phases. This topic should be described in a clear, concise way. The implementation process which fulfills the objectives must then be described in a concise way. The RFI Phase I Work Plan must relate specific criteria based on specific data quality objectives which may lead to a Phase II (or Phase III, etc.) investigation. In addition to the phased approach, CAFB must clarify this by including a detailed decision tree.

RESPONSE:

As with Comment 1, Cannon AFB feels that they adequately addressed this issue during the 15 December 1993 meeting and our recent submittal responding to NMED's first comments. At this time, the Phase I investigation is designed to answer item 1. a. - has a release to the environment (soils beneath the landfill cells) occurred from Landfill No. 5 (SWMU No. 113). If through the Phase I investigation it is indicated that no releases have occurred, then a No Further Action scenario exists, and will be acted upon by Cannon AFB. If a release is indicated, then evaluation of the need for and type of additional phases of investigation and/or monitoring will be performed. The Phase I investigation will also result in the collection of information which will be useful for addressing items 1.b. through 1.d. Data gaps (related to items 1b., 1c., and 1d.) identified through the performance of Phase I RFI, will be addressed in subsequent phases of investigation .

As discussed in our response to Comment 1, Cannon AFB will include a detailed decision flow diagram and text in Section 4.0 of Work Plan Volume I in response to this comment.

It is not possible at this time to identify specific criteria and/or specific data quality objectives that may lead to a Phase II or additional other phases of investigation in this work plan due to the limited available data. The detailed decision flow diagram will outline what potential phases of investigation may entail. Also, after the completion of the Phase I RFI, additional investigation may be recommended to address any data gaps identified related to items 1b, 1c., and 1d. The investigation(s) to address the data gaps will be presented in an addendum to this work plan, which will be submitted to NMED for review and approval. The Data Quality Objective identification process guidance provided by EPA supports this type of iterative process for identifying data quality objectives.

Comment 3. Response to specific comment 3.

CAFB must provide relevant references, historical information, and empirical information on the nature of fractures in the caliche.

RESPONSE:

As was discussed during our 19 May 1994 meeting, Cannon AFB will remove the reference to the nature of fractures in the caliche as appropriate since no historical information or empirical information is available as it relates to Landfill No. 5 at Cannon AFB. Investigations to date have not indicated that 1) a release has occurred which warrants the collection of additional data, and 2) the presence of caliche in such a form has not been documented beneath Landfill No. 5. If caliche is encountered during soil boring activities at Landfill No. 5, physical descriptions will be included in the Phase I RFI report.

Comment 4. Response to specific comment 5.

The list of potential corrective measures is incomplete. The RFI Work Plan must address potential corrective measures technologies which may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. Additionally, the RFI Work plan must identify any field data needed to satisfy Data Quality Objectives and to facilitate the evaluation and selection of the final corrective measure(s). This data must be of adequate technical quality to support the development and evaluation of the corrective measures alternative or alternatives during the Corrective Measures Study. The inclusion of this section in the work plan will not preclude the need for a formal Corrective Measures study based upon the findings of the RFI.

RESPONSE:

Cannon AFB believes that the list provided as Table 3-2 to the response to comments was very much complete, given the information available from which to make decisions. Cannon AFB is providing additional potential corrective measures technologies, many of which, based on our experience, are not considered to be viable alternatives for this site. As was discussed during the 19 May 1994 meeting, only proven technologies will be considered, and as additional data are collected the list of potential corrective measures technologies will be revised. Also, the potential for designating Landfill No. 5 as a CAMU will be considered.

Comment 5. Response to specific comment number 7.

If CAFB chooses to determine background levels for site specific naturally occurring metals, this must be submitted to NMED in a separate submittal for review.

RESPONSE:

Cannon AFB has submitted this document under a separate cover to NMED and USEPA for review and comment.

Comment 6. Response to specific comment number 9.

Please provide justification to support the adequacy of thirty borings and the supporting data quality objectives which address: 1) determining whether a release had occurred from the unit, 2) characterizing the composition, rate, and extent of any release, 3) characterizing the source, 4) the need for additional release characterization, and 5) supporting the corrective measures study.

RESPONSE:

Cannon AFB believes that thirty borings is adequate to determine if there has been a release from the SWMU. This is especially true considering the method that these borings will be located. EPA guidance suggests that a phased approach (much like what we have proposed) is necessary to characterize a site if inadequate data are available. The response to this question is also addressed under items 1 and 2. In addition, at the 15 December 1993, the issue of thirty borings was discussed and this number was agreed upon, knowing that additional phases of investigation may be required to fully answer numbers 2 through 5 of this comment.

Recent discussion with NMED have resulted in the potential of a decrease in the number of soil borings and number of samples submitted for chemical analysis. This is due to the requirement from NMED that Appendix IX constituents be analyzed for instead of the TCL and TAL lists as proposed in the Draft Phase I RFI Work Plan. Cannon AFB believes that they have provided adequate justification for the number of soil borings and samples and the use of the TCL and TAL analytical lists, however, to allow the project to move forward, Cannon AFB will agree to analyzing soil samples for Appendix IX constituents, during this Phase I RFI only for Landfill No. 5. Soil samples collected during subsequent phases of investigation (if performed) will be analyzed for those compounds

detected and deemed to be chemicals of concern as a result of the Phase I RFI. Because Cannon AFB is under budget constraints for this phase of the RFI, the increased cost of Appendix IX analysis will result in a reduction of the number of soil borings and samples submitted for chemical analysis.

In response to NMED's specific points on this comment:

1. The soil borings will be located in areas suspected of having the potential for a release to the environment (soil beneath the landfill) using results obtained from the geophysical and soil gas surveys. The analytical results will be used to evaluate whether a release has occurred to the environment (soils beneath the landfill cells) from the landfill.
2. Soil samples for chemical and physical analysis will be collected from the soil beneath the landfill cell/native soil interface to a planned depth of 60 feet below ground surface (approximately 40 feet below the landfill cell/native soil interface) to provide information to characterize the composition of a release, if a release has occurred. Using historical records (time of cell use, waste disposed of), and depth of contaminant(s) in soil (if present), an estimate of the rate of movement can be made. The soil gas survey results and soil sample analytical results may provide an estimate of the extent of contamination. However, Cannon AFB recognizes that additional phases of investigation may be required to fully characterize the extent of contamination (if present).
3. Information supporting source characterization (as required by Cannon AFB's Part B Permit) will be collected during this phase of the RFI since some of the soil borings will be drilled through the landfill cells, and a physical description of the material provided. Also, see response to Comment 7.
4. As presented in our response to Comments 1 and 2, a detailed decision flow diagram will be included in the work plan, which outlines the identification of data gaps as a result of the Phase I RI, which may include additional release characterization.
5. The information to be collected during the Phase I RFI (such as grain size, TOC, percent moisture, etc.) will support a corrective measures study. Sufficiency of this information in supporting a corrective measures study will be evaluated. If additional information is required, additional phases of investigation may be warranted.

Comment 7. Response to specific comment number 10.

The RFI Work Plan must address source characterization and the risk of potential releases from the landfill in the DQO process. Qualifying and quantifying the

potential for releases from the landfill will be important in evaluating the need for possible corrective measures.

RESPONSE:

As discussed during the 19 May 1994 meeting, information supporting source characterization will be collected during the Phase I RFI for Landfill No. 5. However, Cannon AFB stated at the 15 December 1993 meeting, and our response to comments, that Cannon AFB does not intend to conduct a complete source characterization (i.e., dig up the landfill cells or submit samples of landfill material for chemical analysis) as related to the landfill cells themselves. Detailed source characterization (i.e., sampling within the landfill cells) is not appropriate during a Phase I investigation, since no release to the environment (soils) has been documented to have occurred from Landfill No. 5, or the other landfills which have been investigated at Cannon AFB. RCRA Facility Investigation guidance states that due to the nature of the waste placement, and heterogeneity of the placement, source characterization is not financially or technically feasible.

As has been previously presented, some characterization of the source will occur as Phase I progresses. This is supported by the rationale that 1) we are drilling through the landfill, and will physically describe what is seen, and 2) if the potential for a release is detected, the other parameters for source characterization under Cannon AFB's Part B permit requirements will be collected, or can be estimated from the data collected (i.e., chemical constituent in soil beneath the landfill will be known (if present), from which some idea of the source will be evident). The section of Cannon AFB's Part B permit which outlines the information required for source characterization is attached to these comment responses.

Comment 8. Response to specific comment number 16.

CAFB must also describe how 40 CFR 264 Subpart S action levels, baseline risk assessment, and/or background concentrations will support DQO's. The choice of analytical methods must be based on DQO's and include risk assessment considerations, including the likelihood and implications of detecting multiple constituents.

RESPONSE:

This comment has largely been addressed in our response to comment 1 and 2, and the adequacy of our analytical methods selected was not only discussed at the 15 December 1993 meeting, but was addressed in our response to comments (i.e., the detection limits for the analytical methods we have proposed are sufficient for

risk assessment purposes, and Subpart S action levels). If multiple constituents are detected at concentrations individually approaching Subpart S action levels or risk-based concentrations, additional evaluation such as screening level risk assessment may be warranted. The need for this evaluation will be determined following a joint meeting with Cannon AFB and NMED at the conclusion of the Phase I RFI for Landfill No. 5.

Source: C.A. 1000 AFB
RC RA Part B Print
November 14, 1989

B. Source Characterization

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, including: type; quantity; physical form; disposition (containment or nature of deposits); and the facility characteristics affecting release (e.g., facility security; and engineered barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics

- a. Location of unit/disposal area;
- b. Type of unit/disposal area;
- c. Design features;
- d. Operating practices (past and present);
- e. Period of operation;
- f. Age of unit/disposal area;
- g. General physical conditions; and
- h. Method used to close the unit/disposal area.

2. Waste Characteristics

- a. Type of waste placed in unit;
- b. Physical and chemical characteristics; and
- c. Migration and dispersal characteristics of the waste.

The Permittee shall document the procedures used in making the above determinations.