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ENVIRONMENT DEPARTMENT

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October 30, 1992

Mr. Jim Richards, Chief
Environmental Management
Cannon Air Force Base
Headquarters 27th Combat Support Group DEEV
Cannon Air Force Base, New Mexico 87413

RE: Melrose AFR, Technical Review of the RCRA Part B Application

Dear Mr. Richards,

It is our understanding that during the technical review process you have assigned Ms. Vera Wood as the point of contact at Environmental Management. Arrangements are being coordinated through her efforts for a site visit to Cannon Air Force Base and the Melrose Air Force Range. At this time, Mr. Tom Tatkin of my staff is planning to be at your facility on November 6, 1992. He will be interested in seeing and discussing hazardous waste management practices utilized for waste explosives treated in the Melrose AFR Open Burn and Open Detonation Unit.

In order to expedite the issuance of a permit, we have prepared a list of concerns that can be addressed during the visit. These have been generated from a preliminary technical review of the Part B application. The reason for submitting the attached list before the visit is to provide your office the necessary time to contact the proper sources for the requested information.

Our office can proceed with more involved aspects of the technical review once we receive written response to the requested information. Please return the written response within one week after the visit, or explain what additional time will be needed.

If you should have any questions or comments, please contact Mr. Tom Tatkin at 827-4308. Your continued cooperation with the permitting process is appreciated.

Sincerely,

A handwritten signature in cursive script that reads "Barbara Hoditschek".
Barbara Hoditschek, Manager
RCRA Permits Program

Hazardous & Radiocative Materials Bureau

xc: Rich Mayer, US EPA, Region VI

**Preliminary Technical Review
Request for Information
And Comments for Discussion**

1. Facility

- a. Explain who owns the property on which the Melrose Air Force Range is situated.
- b. Provide the location for the Centralized Munition Depot noted in the Part B application. Explain what is meant by large items that are sent to this depot.
- c. Describe the history of open burning and open detonation activity at the Melrose AFR. Include locations of historic sites that are no longer active.
- d. Show on the Melrose AFR map, locations of all wells up to the distance away from the OB/OD unit that includes the potable water well some 1,200 feet north. Provide all known information about the geology, water quality and water quantity.
- e. Confirm that the water well intended for fighting any fires at the Melrose AFR is the same as the potable water well some 1,200 feet north of the OB/OD. If it is not the same, delineate the location of each on the Melrose Range Map.
- f. Describe how waste explosives are identified and collected from the AFR once they are considered waste explosives.
- g. Itemize all waste explosives, dates and quantities that have been burnt or detonated at the unit since 1980 when the unit fell under RCRA requirements.

2. Hydrology

- a. For the first aquifer immediately below the open detonation and open burn unit, describe the groundwater flow direction the hydraulic gradient, the vertical position and the rate of flow. Keep in mind that the first water encountered through drilling may be present above the Ogalla Formation. If this is the case and the first water communicates with the Ogalla, specific information on the Ogalla may also need to be addressed.
- b. Describe site specific geology down to and including the Ogalla formation as determined from borings.

3. Environmental Standards

- a. Submit a copy of the DOD study, "Identification and Characterization of Emissions and Residues from the Open

Burning and Open Detonation of Munitions". Cite the specific area of the report that demonstrates that complete combustion occurs for all energetic materials during OB/OD treatment and that OB/OD treatment is environmentally sound.

- b. Describe how it was determined that, "The amount of waste which could be released to the environment is not enough to have an adverse effect outside the OB/OD area." (Section E.2.k.)
- c. Describe the potential for emission and dispersal of gases and dispersal of hazardous waste constituents into the air, soil and groundwater.
- d. Describe the potential for deposition or migration of hazardous constituents into the food chain or other vegetation.
- e. Describe the annual cyclical pattern for precipitation in the Curry-Roosevelt counties region. Include in the discussion the frequency and persistence of temperature inversions.
- f. Explain how to interpret historic wind speeds and directions from the wind rose diagrams used in the Part B application. Also include how wind speeds and directions are determined immediately prior to the time treatment takes place.
- g. Describe the site specific soil type(s) in which the OB/OD unit and immediate adjacent areas are situated. Provide such information that includes soil composition, porosity, depth to bedrock and background concentrations of hazardous constituents.

4.8. Waste Analysis

- a. Provide a glossary of military terms that defines all waste listed in Table C-1 of the Part B application and describes any other explosive device that may be treated at the OB/OD unit. Include physical and chemical aspects. Not only is it environmentally significant to know the make-up of the reactive component of the waste, but the nonreactive component as well.
- b. Verify that the intended use of the OB/OD unit is for treatment of conventional explosives and related hazardous wastes in the categories of smokeless powders, solid propellants, typical high explosives, initiating explosives, typical incendiaries, pyrotechnic explosives, and typical waste munitions (.50 Caliber or smaller).
- c. Describe the composition, explosive and inert, of the

following devices. List metallic constituents if the inert portions of the device are to be treated in the OB/OD unit.

1. Practice Bombs
 2. Inert full-scale bombs
 3. Inert 2.75 inch rockets
 4. Target practice gum ammunition
 5. 50 caliber and smaller, live ammunition
- d. Itemize all liquid fuels that are used during open burning and provide written assurance that fuels are in no way contaminated or unusable for their originally intended purpose.
- e. Provide criteria, time intervals and other trigger mechanisms for which waste streams will be re-evaluated.
- f. Explain how the sampling grid used for previous events was situated on the ground relative to the OB/OD unit.
- g. Describe how soil samples were collected and composited.
- h. Provide all soil sampling chemical analysis to date, including laboratory quality assurance and quality control documentation.
- i. The Part B application states that explosive devices will sometimes be treated in their original shipping cases. These cases are considered solid waste, and shall be analyzed by TCLP protocol to determine whether or not they contain hazardous constituents. Explain how this will be accomplished.

5 / 4. Inspection

- a. Describe in detail all responsibilities assigned to the AFR management contractor, Arcata.
- b. Items to be inspected are included in Figure F-1 of the Part B application. It is stated that these items will be inspected before each treatment session. Certain items must be inspected more regularly, such as maintenance of berms, signs and fencing. The presence of standing water in the OB/OD unit may have to be checked for and evacuated after each rain storm. Provide a more comprehensive inspection list than the one in Figure F-1.
- c. Explain what group performs inspections, what group responds to noted deficiencies and how the reporting process works to initiate response.

6 / 5. Safety and Special Handling

- a. It is discussed in the Part B application that waste explosives may be handled with bale hooks and explosive cases repaired with nails. Explain if these handling and repair items will be made of non-sparking materials such as copper or brass, and if not discuss why they are not.
- b. It is stated in the Part B application that smoking will not be permitted within a distance from explosives that is not safe. Specify what the safe distance is for the types of explosives specific to the Cannon AFB and the Melrose AFR.
- c. Provide an explanation for determining a safe distance to be maintained by EOD personnel during treatment. Include in the discussion any kind of shielding that is used to protect against flying debris (Part B, Apndx F-1, 1-9).
- d. Describe how "disposal action" for safe, expeditious and cost effectiveness has been defined for the Melrose AFR, and explain how compatible characteristics are determined (Part B, Apndx F-1, 1-11).
- e. Explain what is meant by bulk explosives, and why mixing of bulk explosives will not be permitted (1-11).
- f. Confirm that the explosive limit for the OD trench is 100 pounds (p. D-1) during any one detonation. Provide additional commentary if necessary to clarify this amount, such as, "This weight does not include the inert portion of the item." (1-12)
- g. It is stated in Appendix F-1, Item 1-13 that disposal of munitions by open burn and open detonation involve the release of toxic fumes. The control of these fumes is to be determined after assessment of each particular ordnance item is completed. Explain how this assessment is performed for the Melrose AFR OB/OD unit.
- h. Explain why the use of concrete pads are not permissible for open detonation (1-21).
- i. Describe the location and features of the holding area for waste explosives delivered to the OB/OD unit (1-22).
- j. Describe where tools, safety equipment and safety clothing are stored relative to the OB/OD unit (1-23).
- k. Describe the safety training program that is required for all EOD personnel.

7 8. Contingency Plan

- a. Explain what environmental considerations and techniques are considered when fighting a fire at the OB/OD Unit.

8 7. Storage and Disposal of Treated Waste

- a. Explain how and when treated waste that do not meet regulatory standards is removed from the OB/OD. Even when the reactive portion of the waste is eliminated, there may still be other RCRA wastes remaining (e.g. TCLP metals in ash or soils)
- b. Explain how and when metal fragments from the inert portions of treated items are removed from the unit.

Comments Regarding the Part B Application that will be discussed:

The discussions below are based on the Environmental Performance Standards for Subpart X Units (HWMR-6, Part V, § 264.601(b)(2)).

1. As described in the Part B application, open burns are classified as small and large burns. The Environmental Department does not look favorably on open burns of hazardous waste taking place on surfaces that do not provide for containment from the native soils. Unless the owner/operator can satisfactorily demonstrate that there will be no migration into the environment of hazardous waste constituents (above health based limits or natural background concentrations), uncontained burning will not be permitted. Accepted health based limits proposed in Subpart S is published in the Federal Register, Volume 55, Number 145, July 27, 1990, on page 30798 through 30884 and these are subject to revision. It is preferred that all burns are contained and that release of waste residues are limited from entering the soil, via air transmissions.
2. A NMED approved sampling and analysis plan for soils must be implemented at the time a RCRA permit is issued. The current plan does not appear to be sufficient for determining potential soil and ground water contamination. For example, all chemical analyses used for evaluating hazardous waste emissions to the soil must include at a minimum, total metals (TCLP) and total explosive residues (organics). The TCLP method is used to determine when a waste becomes a hazardous waste and is not useful as a hazardous waste management tool. In other words, total metals and explosive residues analyses will let a manager predict when hazardous waste contaminated soils are likely to cause a sample to fail the TCLP method.