



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)
KIRTLAND AIR FORCE BASE NEW MEXICO

COPY

Colonel Robert L. Maness
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2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5000

NOV 16 2010

Mr. James Bearzi
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505



Dear Mr. Bearzi:

As per your previous request, I am acknowledging receipt of your 12 October 2010 letter discussing the Open Detonation (OD) Unit Operating Permit (Permit), EPA ID No. NM9570024423, and closure plan at Kirtland Air Force Base (AFB). As stated in your letter, you indicate that Kirtland AFB must either implement the Permit closure plan found in Permit Attachment H or submit a Class 3 Permit Modification Request (PMR) seeking to amend the closure plan.

Accordingly, Kirtland AFB is hereby submitting this Class 3 PMR as allowed in 40 CFR § 270.42, § 74-4-4.2 NMSA 1978 and § 1.12.1 of the Permit. In addition to requesting to amend various portions of the Permit, including the closure plan found at Attachment H, the modification request also requests a stay of enforcement, extension of due dates for deliverables and a 40 CFR §270.42(e) request for temporary authorization to facilitate timely implementation of closure activities pending NMED determination of this PMR. By submitting this Class 3 PMR, Kirtland AFB is not waiving its argument concerning the invalidity of the 2010 Open Detonation Unit Operating Permit.

However, as we move forward through this process of developing and implementing the final Permit closure plan to close the unit approximately forty (40) years ahead of the previously anticipated closure date, Kirtland AFB will work closely with your office to ensure the final closure plan and closure activities comply with all statutory and regulatory closure requirements.

If you have any questions, please contact Mr. John Pike, Environmental Management Chief,
at (505) 846-8546.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Maness". The signature is fluid and cursive, with a large initial "R" and "M".

ROBERT L. MANESS, Colonel, USAF
Commander

cc:

John Kieling, NMED
Will Moats, NMED

HAZARDOUS WASTE TREATMENT

FACILITY OPERATING PERMIT

EPA ID No. NM9570024423

issued to

UNITED STATES AIR FORCE

for the

OPEN DETONATION UNIT

located at

KIRTLAND AIR FORCE BASE

BERNALILLO COUNTY, NEW MEXICO

issued by

NEW MEXICO ENVIRONMENT DEPARTMENT

HAZARDOUS WASTE BUREAU

2905 RODEO PARK DRIVE EAST, BUILDING 1

SANTA FE, NEW MEXICO 87505

July 2010

I. PREAMBLE

A. SUMMARY

Kirtland Air Force Base (AFB) hereby submits a request to modify the Hazardous Waste Treatment Facility Operating Permit (Renewal Permit)(hereinafter defined) issued by New Mexico Environment Department (NMED) in July 2010 for an Open Detonation (OD) Treatment Unit EPA ID# NM9570024423 (this request is hereinafter described as the “November PMR”), pursuant to Section 74-4-4.2.G(2) of the New Mexico Hazardous Waste Act (“HWA”), 40 CFR §§ 270.41 -.42 and Sections 20.4.1.900-.901 of the New Mexico Administrative Code (NMAC).

Kirtland AFB made a business decision to cease operations of the OD Unit and pursue closure of the OD Unit and its co-located Open Burn (OB) Treatment Unit approximately forty years earlier than anticipated in furtherance of NMED’s stated goal of eliminating OD of hazardous waste at Kirtland AFB as soon as practicable. This decision and its resulting effects provide both legal bases and practical justifications for modifying the Renewal Permit. The resulting changes to the facts and circumstances surrounding the OD Unit and its permit provide cause for modification under 40 CFR § 270.41(a)(1)-(2), because new information that was not available at the time of either the permit renewal application or permit issuance and material and substantial alterations to activities have occurred. Kirtland AFB’s reasons for making its decision to cease operations of the OD Unit and pursue closure were partially based on the fact that because of facts and circumstances beyond its control, Kirtland AFB would not be able to comply with the compliance schedules outlined in the Renewal Permit. These events and circumstances, including, but not limited to the budgetary allocation process of the Federal government, present continuing obstacles making it practically impossible for Kirtland AFB to comply with the Renewal Permit and therefore provide cause for modification of the Renewal Permit under 40 CFR § 270.41(a)(4).

In addition, the resulting effects of ceasing treatment operation and seeking closure 40 years prior to the anticipated closure date and in furtherance of NMED’s stated goal of eliminating OD hazardous waste at Kirtland AFB as soon as practicable, provide several practical reasons for modifying the Renewal Permit. Ceasing treatment at the permitted treatment unit and pursuing closure of that unit and its co-located OB Unit make the scope and resulting costs of the Renewal Permit’s compliance, reporting and corrective action requirements unnecessarily expansive, broad, invasive and expensive.

Furthermore, the OD Unit is small, comprising a circular area with a diameter of roughly 1,500 feet, an insignificant geographic area in relation to the entire installation of 80.56 square miles at Kirtland AFB. The fact that Kirtland AFB applied for a renewal permit to continue operating a small OD Unit does not logically warrant base-wide application of the Renewal Permit corrective action requirements after Kirtland AFB ceased treating hazardous waste at the OD Unit. NMED has corrective action authority under the HSWA module from the 1990 Kirtland

Treatment, Storage and Disposal (TSD) Permit, sufficient to address individual releases and necessary corrective action requirements. NMED as recently as April 2010 asserted this authority under the HSWA Module and can continue to use this authority to require and oversee necessary corrective action at the base.

Moreover, Kirtland AFB believes that several facts and issues related to the Renewal Permit's issuance provide the bases for modification. Specifically, NMED's process time for the renewal application (from December 2004 until July 2010) was unreasonably long and seemingly in violation of NMED's statutory mandate in § 74-4-4.2(C) NMSA 1978. In fact, NMED's processing took longer than the entire term of the Renewal Permit. NMED also failed to provide Kirtland AFB with any notice of its issuance. This fact is particularly troublesome in light of the mandated closure of the OB Unit and Kirtland AFB's repeated submission of closure plans for the OD and OB Units pursuant to an executed settlement agreement between the parties and NMED's directives. Kirtland AFB also believes that the record reflects that NMED failed to adequately address Kirtland AFB's comments to the Draft OB/OD Renewal Permit submitted to the NMED-HWB on 14 June 2007. Kirtland AFB further believes that several items included in the Renewal Permit and NMED determinations with respect to the Renewal Permit were not reasonably justified or supported by the record. Finally, Kirtland AFB believes that NMED failed to follow relevant laws, rules and guidance with respect to certain aspects of the Renewal Permit.

Accordingly, Kirtland AFB believes that facts related to the OD Unit, the reasons for and effects of Kirtland AFB's decision to withdraw its renewal application and pursue closure of the units, as well as facts and issues related to the Renewal Permit issuance provide the basis for modification of the Renewal Permit under HWA § 74-4-4.2.G(2); 40 CFR §§ 270.41 -.42 and NMAC §§ 20.4.1.900-.901. In general, Kirtland AFB requests that the Renewal Permit be modified in scope and application to focus exclusively on closure of the OB and OD Units and corrective action activities related to those Units. Kirtland AFB also has specific requests with respect to many of the provisions contained in the Renewal Permit. Kirtland AFB's general and specific bases for this November PMR are explained in detail below.

Kirtland AFB also hereby requests a stay of any and all enforcement and deliverable dates contained in the Renewal Permit pending a final agency decision by NMED on this November PMR.

Kirtland continues to challenge whether the Renewal Permit is in effect and NMED's recent determination on Kirtland AFB's 8 October 2010 PMR request for approval of the revised closure plan and expressly reserves any and all legal rights with respect to these issues. Kirtland also expressly reserves all legal rights in response to final agency decisions made by NMED in its 12 November 2010 correspondence denying approval of the OD Unit closure plan.

B. RELEVANT FACTS

Kirtland AFB historically operated under three RCRA permits: a TSD permit; an OD treatment permit; and an OB treatment permit. EPA issued the TSD permit in July 1990 and the HSWA Module for the same in October 1990. In February 2000, Kirtland AFB submitted a renewal application for the TSD permit, which was deemed to be administratively complete. In late 2004, Kirtland AFB applied for closure of the TSD Permit. Kirtland AFB submitted a closure report for the TSD Permit in July 2005 and NMED declared the TSD Facility clean closed in August 2005. However, Kirtland AFB and NMED-HWB never closed the HSWA Module, which continues to cover investigation and clean-up of SWMU's across Kirtland AFB. This Module is updated annually as new solid waste management units (SWMUs) are identified. The HSWA Module has been utilized as recently as April 2010, when it was identified in initial correspondence between NMED and Kirtland AFB concerning an issue related to a fuel spill at Kirtland AFB.

NMED issued the OD Treatment Unit Permit to Kirtland AFB in December 1994. NMED issued the OB Treatment Unit Permit in July 1995. On 14 May 2004, Kirtland AFB timely submitted a permit renewal application for both the OB and OD Treatment Units. Kirtland AFB submitted a revised permit renewal application for the OD and OB Units in December 2005. ("Renewal Application"). On 16 April 2007, NMED issued a draft OD/OB Permit ("Draft OB/OD Renewal Permit"), a fact sheet ("Fact Sheet") and a notice announcing a 60-day public comment period. Kirtland AFB timely submitted three sets of comments to the Draft Renewal OB/OD Permit on 14 June 2007. Other comments were submitted from the Water Utility Authority, Water Quality Advisory Board and Water Utility Authority of Albuquerque Bernalillo County, as well as two interested citizens. On 12 July 2007, by letter to interested citizens, NMED extended the public comment period to the Draft OB/OD Renewal Permit with respect to paragraph 5.2.4, therein, entitled Sanitary Sewer Line.

On 22 May 2009, NMED issued a compliance order and proposed civil penalty to Kirtland AFB with respect to the OB Unit. To resolve the issues raised by the compliance order and proposed civil penalty, NMED and Kirtland AFB entered into a settlement agreement on 25 September 2009. By letter dated 30 October 2009, pursuant to the settlement agreement between NMED and Kirtland AFB, the USAF withdrew its application to renew the OB Unit. ("OB Unit Withdrawal Letter"). The OB Unit Withdrawal Letter also requested that the Draft Permit be revised to reflect the withdrawal of the request for continued operation of the OB unit. Also pursuant to the settlement agreement between NMED and Kirtland AFB, Kirtland submitted closure plans for both the OD Unit and OB Unit in February 2010, which were deemed administratively complete by NMED in April 2010. NMED subsequently withdrew its approval of the OB and OD Unit closure plans for failure to comply with public notice requirements. Kirtland AFB issued a notice of public hearing on 18 June 2010, setting a hearing date of 7 July 2010 and submitted a revised closure plan

on 21 June 2010. On 15 July 2010, Kirtland AFB notified NMED of its compliance with the public hearing requirements.

Also on July 15, 2010, NMED issued its responses to comments on the Draft OB/OD Permit, an interested person letter, a Final Order for a final hazardous waste facility permit and a renewal permit for the OD unit ("Renewal Permit"). According to the Final Order cover letter enclosing the Renewal Permit, the Renewal Permit was to become effective 16 August 2010. Kirtland AFB reviewed the Renewal Permit, NMED's responses to comments and the Final Order. For a variety of reasons, it made the business decision to withdraw the Renewal Application, cease operations of the OD Unit and submit revised closure plans for both the OB and OD units. Accordingly, on 13 August 2010, Kirtland AFB submitted a letter to NMED withdrawing its application for the Renewal Permit prior to the effective date of the Renewal Permit ("Withdrawal Letter").

NMED officials soon thereafter contacted Kirtland AFB representatives and requested a meeting to discuss Kirtland AFB's Withdrawal Letter. This meeting was held 30 August 2010. The 30 August 2010 meeting revealed divergent views on several issues, including whether the renewal permit was effective and whether Kirtland AFB provided a timely notice of closure for the OD Unit. NMED requested that Kirtland AFB submit a letter to clarify certain issues related to Kirtland AFB's 13 August 2010 letter. Kirtland AFB submitted a clarification letter on 20 September 2010.

On 5 October 2010, Kirtland AFB submitted a cover letter and closure plans for the OB Unit and OD Unit. The cover letter indicated that the closure plans were being submitted as Class 3 modifications to the 1994 OD Permit and 1995 OB Permit ("October 2010 PMR").

On 8 October 2010, NMED issued a letter to Kirtland AFB stating in substantive part that the Renewal Permit is in effect and NMED will take any and all action to enforce such permit. On 12 November 2010, NMED issued a letter deciding that it will not consider the Class 3 modification submitted by Kirtland AFB with respect to the closure plan for the OD Unit, because it views closure of the OD Unit as covered exclusively by the Renewal Permit, but will consider only the closure plan for the OB Unit.

II. MODIFICATION REQUEST 1 - EXTENSION OF DUE DATES FOR DELIVERABLES PENDING NMED DETERMINATION ON THIS NOVEMBER PMR.

As provided by 40 CFR §270.33, Kirtland AFB is allowed to terminate its receipt and treatment of hazardous waste at the OD Unit on Kirtland AFB rather than continue to operate and meet permit requirements. Upon ceasing operations, an alternative schedule of compliance may be issued if, as the applicant/permittee, Kirtland AFB ceased operations before non-compliance with any interim or final compliance schedules specified in the permit. On 13 August 2010, Kirtland AFB terminated its receipt and

treatment of hazardous waste at the OD Unit prior to any non-compliance associated with the Permit. Notice of this action was provided by letter to the NMED-HWB, which notice comports with the requirement of 40 CFR §270.33(b)(4).

Accordingly, Kirtland AFB hereby requests the Renewal Permit be modified to amend the Renewal Permit by replacing the operational compliance schedule with the compliance schedule set forth in the revised OD Unit closure plan submitted to the NMED-HWB on 8 October 2010 and attached as Exhibit A to this November PMR. Additionally, Kirtland AFB requests, that until a decision is rendered on this November PMR that all deliverable due dates within the Permit's compliance schedule be stayed until ninety (90) days subsequent to the issuance of NMED's determination on this November PMR.

III. MODIFICATION REQUEST 2 - STAY OF ENFORCEMENT PENDING NMED DETERMINATION OF THIS NOVEMBER PMR.

As discussed above in Modification Request 1, on 13 August 2010 Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Additionally, the termination of operations at the OD Unit occurred prior to any non-compliance associated with the Renewal Permit. Accordingly, Kirtland AFB hereby requests that any and/or all enforcement of the requirements set forth in the Renewal Permit be stayed pending the issuance of a decision on the modification requests contained herein.

IV. MODIFICATION REQUEST 3 – AMENDMENTS TO THE RENEWAL PERMIT INCORPORATING THE 8 OCTOBER 2010 REVISED CLOSURE PLAN

A. REQUESTED MODIFICATIONS: PERMIT PART 1 – GENERAL PERMIT REQUIREMENTS

1. Title Page

Requested Modification: Change to read “. . . Hazardous Waste Treatment Operating Permit. . .”

Justification for Request: Throughout the permit, the term Facility has been used to identify both Kirtland AFB as a whole and the OD Unit as separate treatment unit. However, since the Permit Application was submitted for the treatment of hazardous waste at the OD Unit, the Title should identify the specific treatment unit permitted.

2. Section 1.0, Page 13: Introduction

Requested Modification: “This Permit Part (1) contains general requirements pertaining to hazardous waste management at the Open Detonation (OD) Unit at Kirtland Air Force Base (AFB) Facility. . .”

Justification for Request:

Effective 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Accordingly, references to treatment and corrective actions should be deleted, in that the provisions of 40 CFR §264 pertaining to operating treatment, storage or disposal (TSD) facilities are inapplicable to closure activities. Additionally, as per §74-4-4.2(B) NMSA 1978, permits contain corrective action measures only for releases of hazardous waste or constituents from a solid waste management unit (SWMU). Since there has not been a release from the OD Unit, any reference to treatment and corrective actions should be deleted.

3. Section 1.3, Page 13: Permitted Activity

Requested Modification: Change section to read “The OD Unit is classified as a miscellaneous unit under 40 CFR Part 264 Subpart X. This Permit establishes standards for the closure and sets forth the requirements for corrective action to address releases of hazardous waste and hazardous constituents into the environment at the OD Unit pursuant to the HWA and the HWMR.”

Justification for Request: Since the receipt and treatment of hazardous waste has been terminated at the OD Unit, the operational compliance requirements of 20.4.1 NMAC and 40 CFR Part 264 are inapplicable. Therefore they should be deleted. Corrective action requirements are only required if a release has occurred (§74-4-4.2(B) NMSA 1978). Therefore, since there has not been a release of hazardous wastes or hazardous constituents from the OD Unit, corrective actions should not listed in the permit. “At the OD Unit” was added to clarify and differentiate from hazardous releases in other parts of Kirtland AFB that may be addressed by CERCLA or RCRA corrective action under the HSWA Module.

4. Section 1.4, Page 14: Compliance with Permit.

Requested Modification: Change to section to read “Compliance with this Permit during its term constitutes compliance, for purposes of enforcement, with 40 CFR Parts 260 through 273 . . .”

Requested Modification: See justification statement discussion in amendments 2 and 3 above.

5. Section 1.8, Page 16: Definitions

Requested Modification: Insert the following definition for “Open Detonation Unit: the area circular in shape with a diameter of approximately 1,500 feet where detonation treatment events take place (See Permit, Page 110).”

Justification for Request: The Permit as written only defines the term “Facility,” which is used to refer to Kirtland AFB. “Facility” is sometimes used throughout the Permit when discussing sections of the Permit which should only apply to the OD Unit.

6. Section 1.10, Page 17: Term of the Permit

Requested Modification: “This Permit shall be effective for a fixed period of 10 years in accordance with 40 CFR § 270.50(a), subject to Permit Sections 1.5, 1.12 and 1.15.

Justification for Request: In NMED’s Response to Comments on the Draft Permit, the justification given for shortening the permit term to 3 years was “so that changes to the technology for the treatment of reactive and ignitable hazardous wastes can be initiated at Kirtland AFB.” Because Kirtland AFB has notified the NMED of its intent to close the OD Unit and discontinue the treatment of hazardous waste, the shortening of the permit term is no longer relevant. The Renewal Permit term should be increased to the standard 10 years, which term was granted in the 1995 OD Permit and is consistent with the 40 CFR § 270.50(a).

7. Section 1.11, Page 17: Alternative Assessment for Waste Treatment

Requested Modification: Delete this section regarding the alternative assessment for waste treatment.

Justification for Request: Effective 13 August 2010, Kirtland AFB terminated its receipt and treatment of hazardous waste at the OD Unit, as well as providing written notice to the NMED-HWB. An alternative assessment for waste treatment is no longer needed when there is no waste being treated.

8. Section 1.13, Pages 19: Transfer of Land Ownership

Requested Modification: Change to read “. . . ownership of any land that is part of the OD Unit (See also Permit § 6.1.12). . .” wherever Facility appears in this Section.

Justification for Request: It appears that the term “Facility,” which is defined as all contiguous land at Kirtland AFB, was incorrectly inserted expanding applicability to non-OD Unit acres.

9. Section 1.23.1, Page 21: Representative Sampling

Requested Modification: Change to read “The Permittee shall take representative closure samples and measurements in accordance with the procedures in this permit and 40 CFR Part 270. This includes, but is not limited to, sampling and analysis of waste, treatment residue, soil, groundwater, and spills. To obtain . . .”

Justification for Request: See justification statement discussion in amendments 2 and 3 above.

10. Section 1.23.1.1, Page 21: Monitoring Records Contents

Requested Modification: Change to read “. . . Monitoring records shall contain:
1. The dates . . .”

Justification for Request: See justification statement discussion in amendments 2 and 3 above.

11. Section 1.29, Page 25: Corrective Action

Requested Modification: Delete Section.

Justification for Request: See justification statement discussion in amendments 2 and 3 above.

B. REQUESTED MODIFICATIONS: PERMIT PART 2 – GENERAL FACILITY REQUIREMENTS

12. Sections – All, Pages 30 through 45

Requested Modification: Change “Facility” to “OD Unit” or “Treatment Unit” throughout Permit Part 2.

Justification for Request: Throughout Part 2, the term Facility has been used to identify both Kirtland AFB as a whole and the OD Unit as separate treatment unit. However, since the Permit Application was submitted for the treatment of hazardous waste at the OD Unit, the term “OD Unit” should be referenced in that it is the specific treatment unit subject to the Permit.

13. Permit Part 2, Page 30: General Facility Requirements

Requested Modification: Change to read “General OD Unit Requirements”

Justification for Request: See justification statement for amendment 12 above. Also, the term “facility,” which is defined as all contiguous land at Kirtland AFB, was apparently incorrectly inserted expanding applicability to non-OD Unit acres.

14. Section 2.2, Page 30: Inspections

Requested Modification: Delete this section.

Justification for Request: The inspection requirements identified in Section 2.2 apply to operational treatment units. Since Kirtland AFB closed the OD unit to the receipt and treatment of hazardous wastes on 13 August 2010, the identified requirements for inspection malfunctions, deterioration, operator errors, discharges, equipment testing and maintenance, etc., are no longer applicable. See justification statement discussion in amendments 2 and 3 above.

15. Section 2.3, Page 31: Personnel Training

Requested Modification: Change this section to read: “The Permittee shall follow the personnel training procedures for the OD Unit closure activities specified in Renewal Permit Attachment G.”

Justification for Request: As set forth in this Section and Attachment G, the identified personnel training “. . . is to prepare personnel to conduct operations at the OD Unit . . .” However, since the OD Unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010 and Kirtland AFB has filed a request for OD Unit closure, this requirement should only apply to closure plan activities. See justification statement discussion in amendments 2 and 3 above.

16. Section 2.4.1, Page 31: Required Equipment

Requested Modification: Delete paragraph 2 discussing an internal communications and/or alarm system for the OD Unit.

Justification for Request: The internal communications and/or alarm system requirement provided OD Unit personnel the capability of immediate emergency contact during treatment operations. However, since the OD Unit has been closed for the receipt and treatment of hazardous wastes and is scheduled for closure, this requirement is no longer applicable. See justification statement discussion in amendments 2 and 3 above.

17. Section 2.4.3, Page 32: Required Aisle Space

Requested Modification: Delete this section.

Justification for Request: The aisle spacing requirements of 40 CFR § 264.35 do not apply to the OD Unit.

18. Section 2.4.4, Page 32: Arrangements with Local Authorities

Requested Modification: Delete this section.

Justification for request: This requirement for potential emergency response by local authorities during OD Unit treatment activities is no longer applicable, in that the unit has been closed to the receipt and treatment of hazardous waste eliminating the need for emergency response activities. See justification statement discussion in amendments 2 and 3 above.

19. Section 2.45, Pages 32-33: Preventive Procedures, Structures and Equipment

Requested Modification: Delete this section.

Justification for request: The requirements set forth in this section apply to operational OD Units. However, since this unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010, this requirement is no longer applicable.

20. Section 2.5.4, Page 34: Emergency Coordinator

Requested Modification: Delete 3rd sentence in Paragraph 1 and last sentence in Paragraph 2.

Justification for request: The requirements identified for deletion apply to operational OD Units. However, since the OD Unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010, this requirement is no longer applicable.

21. Section 2.6, Pages 34-37: Waste Characterization

Requested Modification: Delete sections 2.6.1 through 2.6.5.1.

Justification for request: The sections identified for deletion apply to treating hazardous wastes at operational OD Units. However, since the OD Unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010, this

waste characterization requirement is no longer applicable. See justification statement discussion in amendments 2 and 3 above.

22. Section 2.7, Pages 38-40: Waste Management

Requested Modification: Delete section 2.7.1.

Justification for request: Each of the subsections identified for deletion specifically pertain to treating hazardous waste at the OD Unit. However, since the OD Unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010, these waste management requirements are no longer applicable. See justification statement discussion in amendments 2 and 3 above.

23. Section 2.7.2.2, Page 40: Treatment Facility Requirements

Requested Modification: Change section title to read “OD Unit Treatment Requirements.” Change section to read “Treatment residues generated at the OD Unit are subject to LDR requirements, as well as other applicable 40 CFR Parts 260 through 273 requirements, as applicable, and this permit.”

Justification for request: See justification statement discussion in amendments 2 and 3 above.

24. Section 2.8, Page 40: Waste Minimization

Requested Modification: Change to read “. . . hazardous wastes that are generated at the OD Unit to the degree . . .” and change all references to “facility with the term “OD Unit.”

Justification for request: The requirement applies to operations at the OD Unit, not the Facility, as defined. See justification statement discussion in amendment 12 above.

25. Section 2.12, Page 42: Air Emissions From The OD Unit

Requested Modification: Change the section to read “During OD Unit closure, the Permittee shall comply . . . and as required by Permit Section 3.3 . . . The Permittee shall maintain all records. . .”

Justification for request: On 13 August 2010, Kirtland AFB terminated the receipt and treatment of wastes at the OD Unit. 40 CFR Part 264 Subpart BB is not applicable, in that it only applies to owners/operators that treat, store or dispose of hazardous wastes. See justification statement discussion in amendments 2 and 3 above.

26. Section 2.20, Page 43: Additional Reports

Requested Modification: Delete section.

Justification for request: This requirement is applicable to the OD Unit, not SWMU's or Areas of Concern (AOC) base wide. Also, since the OD Unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010, there will be no additional wastes received at the OD Unit to be reported to the NMED-HWB. See justification statement discussion in amendments 2 and 3 above.

27. Table 2-1, Page 44: Off-Site Generators

Requested Modification: Delete Table 2-1.

Justification for request: Since the OD Unit has been closed to the receipt and treatment of hazardous wastes since 13 August 2010, there will be no additional wastes received at the OD Unit from off-site generators. See justification statement discussion in amendments 2 and 3 above.

C. REQUESTED MODIFICATIONS: PERMIT PART 3 – OPEN DETONATION UNIT

28. Section 3.0, Page 46: Introduction

Requested Modification: Change to read “This Permit Part 3 contains soil and groundwater monitoring requirement for the OD Unit.”

Justification for request: See the justification statement discussion in amendments 2 and 3 above.

29. Section 3.1, Page 46: Authorized Waste and Maximum Quantity of Waste

Requested Modification: Change to read “The Permittee no longer treats hazardous waste and has initiated the OD Unit closure process. As of 13 August 2010, there are no hazardous wastes received or treated at the OD Unit. No hazardous wastes have been or are stored at the OD Unit.”

Justification for request: The limitations placed on the explosive weights by the NMED were overly limiting and did not justify the expense of continuing to operate the Renewal Permit. Kirtland AFB submitted a revised closure plan to the NMED-HWB for review and approval.

30. Section 3.2.1, Paragraph 1, Page 46: General Requirements

Requested Modification: Change to read “The Permittee shall maintain the OD Unit. . .”

Justification for request: On 13 August 2010, Kirtland AFB submitted its notice of intent to close the OD Unit, which closure for the receipt and treatment of hazardous waste has occurred. Accordingly, there are no further design, construction or operation requirements.

31. Section 3.2.1, Paragraph 2, Page 46: General Requirements

Requested Modification: Change to read “The Permittee shall mark the boundary of the EOD Range with signs or structures. . .”

Justification for request: The OD Unit is clearly discernable, in that the OD Unit is graded and bounded by a storm water berm. The EOD Range is required to have signs and/or structures preventing entry by unauthorized personnel, both of which meet the requirements of 40 CFR §264.14(b).

32. Section 3.2.3.1, Page 46: Hours of Operation

Requested Modification: Change to read “The Permittee will conduct OD Unit closure activities between sunrise and sunset.”

Justification for request: See justification statement discussion in amendments 2 and 3 above.

33. Section 3.2.3.2, Page 47: Weather Conditions

Requested Modification: Change to read “The Permittee will discontinue OD Unit closure activities when the Albuquerque Environmental Health Department (AEHD) issues high wind stop work advisories.”

Justification for request: See justification statement discussion in amendments 2 and 3 above.

34. Section 3.2.3.3, Page 47: Range Fire

Requested Modification: Change to read “The Permittee no longer conducts treatment operations at the OD Unit. Closure activities will be conducted in a manner to minimize the risk of fire danger.”

Justification for request: Effective 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Accordingly, references to treatment and corrective actions have been deleted, in that the provisions of 40 CFR §264 pertaining to operating treatment, storage or disposal (TSD) facilities are inapplicable to closure activities. Also, the EOD Range has adequate fire breaks and contingency measures to contain a range fire, even if extreme fire conditions have been established.

35. Section 3.2.3.4, Page 47: Other Restrictions

Requested Modification: Change to read “As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit.”

Justification for request: Effective 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Accordingly, references to treatment and corrective actions have been deleted, in that the provisions of 40 CFR §264 pertaining to operating treatment, storage or disposal (TSD) facilities are inapplicable to closure activities.

36. Section 3.2.4.1, Page 47: Personnel Safety

Requested Modification: Change to read “As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit. A Health and Safety Plan will be developed for the OD Unit closure activities, which is designed to ensure personnel safety”.

Justification for request: Effective 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Accordingly, references to treatment and corrective actions have been deleted, in that the provisions of 40 CFR §264 pertaining to operating treatment, storage or disposal (TSD) facilities are inapplicable to closure activities.

37. Section 3.2.4.2, Page 48: Safety Precautions

Requested Modification: Change to read “The Permittee shall conduct all OD Unit closure activities in accordance . . .”

Justification for request: Effective 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Accordingly, references to treatment and corrective actions have been deleted, in that the provisions of 40 CFR §264 pertaining to operating treatment, storage or disposal (TSD) facilities are inapplicable to closure activities.

38. Section 3.2.5.1, Page 48: Accumulated Precipitation

Requested Modification: Change to read “To avoid accumulated precipitation, the Permittee will fill in all pits that may accumulate standing water.”

Justification for request: On 13 August 2010, Kirtland AFB submitted its notice of intent to close the OD Unit, which closure for the receipt and treatment of hazardous waste has occurred. On 8 October 2010, Kirtland AFB submitted a revised OD Unit closure plan, which will require all pits to be filled.

39. Section 3.2.5.2, Page 48: Untreated Waste (Kick-Out) and Treatment Residues

Requested Modification: Delete current text and insert OD Unit Closure Plan language to read: “The first phase of closure will consist of a hazards survey of the OD Unit conducted by qualified contractor health physics and industrial hygiene personnel, which will include unexploded ordnance (UXO) safety personnel and Kirtland AFB EOD Personnel. The purpose of the survey shall be to locate and remove any “kick-out” (untreated waste, waste fragments or UXO), and to identify potential contamination concerns that may present hazards to workers during the closure activities and to specify control measures necessary to reduce worker risk. The survey will provide the information necessary to identify worker qualifications, protective equipment (PPE), safety awareness, work permits, exposure control programs and emergency coordination required to complete closure. Any munitions and/or explosives of concern (MEC) identified during the hazard survey will be reported to and handled by Kirtland AFB EOD staff personnel accordance with standard operating procedures.”

Justification for request: Since the receipt and treatment of hazardous waste has been terminated at the OD Unit, the operational compliance requirements of 20.4.1 NMAC and 40 CFR Part 264 are inapplicable. Therefore they have been deleted.

40. Section 3.3, Page 48: Air Monitoring

Requested Modification: Change to read “The Permittee shall conduct all OD Unit closure activities in accordance with AEHD air program requirements.”

Justification for request: On 8 October 2010, Kirtland AFB submitted a revised OD Unit closure plan as a Class 3 permit modification to the NMED-HWB for consideration and approval. The closure plan was prepared in compliance with

the requirements of the Resource Conservation Recovery Act (RCRA) (42 U.S.C. §§6901 et seq.) and its implementing regulations at 40 CFR Parts 264 and 270 (see 40 CFR Part 264 Subparts G and X and 270.14(b)(13)), and state implementing statutes and regulations under which the state has delegated RCRA authority (see New Mexico Hazardous Waste Act, Chapter 74 Article 4 NMSA 1978 and 20.4.1 NMAC).

The closure plan is designed to: 1) minimize the need for further maintenance; 2) control, minimize or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to ground water or surface waters or to the atmosphere; and 3) comply with the requirements of 40 CFR Part 264, Subpart G and 40 CFR §264.601.

Also, see justification statement discussion in amendments 2 and 3 above.

41. Section 3.4, Page 48: Soil Monitoring

Requested Modification: Change to read “OD Unit closure soil sampling and human risk screening will be performed in accordance with the NMED-HWB approved closure plan.”

Justification for request: See justification statement discussion in amendment 40 above.

42. Section 3.5, Page 49: Groundwater Monitoring

Requested Modification: Delete all text and replace with “Installation of monitoring wells and subsequent groundwater sampling and analysis protocol will be accomplished as part of the OD Unit closure activities, in accordance with the NMED-HWB approved closure plan.”

Justification for request: See justification statement discussion in amendment 40 above.

43. Section 3.6.1, Page 51: Additional Waste Characterization Requirements for Air Emissions

Requested Modification: Change to read “The Permittee shall characterize hazardous waste generated as a result of OD Unit closure to insure compliance with . . .”

Justification for request: See justification statement discussion in amendment 40 above.

44. Section 3.6.2, Page 51: Equipment Containing or Contacting Hazardous Waste

Requested Modification: Change to read “Each piece of equipment used during OD Unit closure activities that contains or contacts hazardous waste. . .”

Justification for request: See justification statement discussion in amendment 40 above.

45. Section 3.7, Page 51: Pre-Treatment Preparation

Requested Modification: Change to read “As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit.”

Justification for request: See justification statement discussion in amendment 40 above.

46. Section 3.8, Page 51-52: Transportation of Waste To The OD Unit and Container Specifications

Requested Modification: Delete section.

Justification for request: As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit. See justification statement discussion in amendment 40 above.

47. Section 3.9, Page 52: Waste Staging

Requested Modification: Delete section.

Justification for request: As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit. See justification statement discussion in amendment 40 above.

48. Section 3.10, Page 52: Waste Treatment

Requested Modification: Change to read “As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit.”

Justification for request: See justification statement discussion in amendment 40 above.

49. Section 3.11, Page 52: Post Treatment

Requested Modification: Delete section.

Justification for request: As of 13 August 2010, the Permittee no longer receives or treats hazardous waste at the OD Unit. See justification statement discussion in amendment 40 above.

D. REQUESTED MODIFICATIONS: PERMIT PART 4 – CLOSURE

50. Section 4, Pages 53 through 55: Closure

Requested Modification: Permit Attachment H is referenced throughout part 4. Attachment H should be replaced in its entirety with the revised OD Unit closure plan submitted on 8 August 2010 once the public comment period has passed and the plan is approved by the NMED-HWB.

Justification for request: On 8 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit. Subsequently, on 8 October 2010, Kirtland AFB submitted a revised OD Unit closure plan as a Class 3 permit modification to the NMED-HWB for consideration and approval. This revised closure plan reflects the termination of receipt and treatment of hazardous waste, as well as the revised OD Unit's closure schedule.

The closure plan was prepared in compliance with the requirements of the Resource Conservation Recovery Act (RCRA) (42 U.S.C. §§6901 et seq.) and its implementing regulations at 40 CFR Parts 264 and 270 (see 40 CFR Part 264 Subparts G and X and 270.14(b)(13)), and state implementing statutes and regulations under which the state has delegated RCRA authority (see New Mexico Hazardous Waste Act, Chapter 74 Article 4 NMSA 1978 and 20.4.1 NMAC).

The closure plan is designed to: 1) minimize the need for further maintenance; 2) control, minimize or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to ground water or surface waters or to the atmosphere; and 3) comply with the requirements of 40 CFR Part 264, Subpart G and 40 CFR §264.601.

51. Section 4.0, Page 53: General Closure Requirement

Requested Modification: Change to read “The Permittee shall close the OD Unit following the procedures described in the revised OD Unit closure plan submitted on 8 October 2010, attached hereto, and as required by 40 . . .”

Justification for request: As of 13 August 2010, the Permittee terminated receipt and treatment of hazardous waste at the OD Unit. Accordingly, Kirtland AFB submitted a revised OD Unit closure plan to comply with the provisions of 40 CFR §§ 264.112(c) and 270.42(c) and this permit. The revised closure plan identifies the accelerated closure from 2050 to 2010 and the revised closure schedule, as well as the other closure activities and processes required for clean closure.

52. Section 4.1, Page 53: Submittal of Revised Closure Plan

Requested Modification: Change to read “On 13 August 2010, the Permittee discontinued receipt and treatment of hazardous waste and operation of the OD Unit. The Permittee has submitted a revised OD Unit closure plan for the OD Unit as a Class 3 permit modification in accordance with 40 CFR §264.112(c)(3). The Permittee shall amend . . .”

Justification for request: Although this section contains standard closure requirements, the section should reflect that Kirtland AFB has discontinued all hazardous waste treatment operations at the OD Unit, as well as having submitted a revised OD Unit closure plan to the NMED-HWB on 8 October 2010 as per 40 CFR §§ 264.112(c) and 270.42(c).

53. Section 4.2, Pages 53 and 54: Clean Closure

Requested Modification: Change to read “The Permittee shall close the OD Unit by removing all hazardous waste residues and all structures and equipment from the OD Unit and demonstrating that no unacceptable risk to human health or the environment exists in soil or groundwater at the OD Unit (clean closure). However, if the OD Unit cannot be clean closed, post closure care is required and the closure plan shall be amended. In the event that closure performance standards cannot be achieved for the OD Unit, a post-closure plan will be submitted to the NMED-HWB for review and approval.”

Justification for request: The inclusion of removal of all “hazardous constituents” without providing maximum concentrations above which they will be removed does not provide an adequate definition of clean closure. Defining clean closure as simply “as determined by the Department” is arbitrary. The Renewal Permit should instead reference promulgated federal or state cleanup standards (i.e. maximum contaminant levels (MCL’s) as identified in 20.6.2.3103 NMAC) or

site specific levels developed through a risk assessment. Also, if clean closure cannot be accomplished at the OD Unit, a risk assessment and long-term corrective action plan will be developed. Construction of a cap and landfill closure requirements may not be the best technical solution to address any identified long term risks. It is also premature to establish remedial requirements at this stage prior to the closure activities and investigation outlined in the submitted closure plan.

54. Section 4.3, Page 54: Notification of Closure

Requested Modification: Change to read “On 13 August 2010, the Permittee notified the NMED-HWB that it had terminated the receipt and treatment of hazardous waste, as well as its intent to close the OD Unit. In accordance with 40 CFR §264.112(c)(3), the Permittee has also submitted a Class 3 permit modification for the revised OD Unit closure plan”.

Justification for request: Although this section contains standard closure requirements, the section should reflect that Kirtland AFB has terminated hazardous waste treatment operations at the OB Unit and notified the NMED-HWB of its intent to close OD Unit on 13 August 2010.

55. Section 4.4, Pages 54 and 55: Time Allowed For Closure

Requested Modification: Change to read “. . . as applicable. The Permittee shall complete closure activities for the OD Unit following the schedule and requirements set forth in the revised closure plan and as required by this Permit Part.”

Justification for request: The schedule in the revised OD Unit closure plan submitted on 8 October 2010 by Kirtland AFB is no longer 180 days, in that the plan had to account for the addition of eight quarters of groundwater monitoring. Also, the reference to Section 3008 was deleted in that it relates to imminent and substantial endangerment, which does not appear in other NMED-HWB issued hazardous waste permits.

56. Section 4.5, Page 55: Disposal/Decontamination of Equipment, Structures and Soils

Requested Modification: Change to read “The Permittee shall decontaminate soil as specified in the revised closure plan.”

Justification for request: The requirement for removing and disposing of equipment and structures was removed, in that the OD Unit contains no equipment or structures. Also, as identified in the revised closure plan, the OD Unit will be clean closed.

57. Section 4.7, Page 55: Certification of Closure

Requested Modification: Change to read “. . .the OD Unit was closed as required by the procedures specified in the revised closure plan and this permit, as per 40 CFR § 264.115.”

Justification for request: Kirtland AFB has submitted a revised closure plan for replacing Attachment H of the Permit.

E. REQUESTED MODIFICATIONS: PERMIT PART 5 – POST CLOSURE

58. Section 5.0, Page 56: Post-Closure Care

Requested Modification: Change to read “Clean Closure is planned for the OD Unit. If clean closure cannot be accomplished at the OD Unit, a risk assessment and long-term corrective action plan will be developed.”

Justification for request: A permit should not contain assumptions, i.e. the Department should not assume clean closure. A definitive goal should be established to provide the Permittee with a readily identifiable remediation standard. See 40 CFR § 264.111. If clean closure cannot be accomplished at the OD Unit, a risk assessment and long-term corrective action plan will be developed. Landfill closure requirements may not be the best technical solution to address identified long risks.

F. REQUESTED MODIFICATIONS: PERMIT PART 6 – CORRECTIVE ACTION

59. Sections – All, Pages 57 through 109:

Requested Modification: Change all effective dates to the effective date of the modified permit.

Justification for request: No enforcement prior to 90 days from the effective date of final Department action on this PMR.

60. Sections – All, Pages 57 through 109:

Requested Modification: Delete all references to monitoring media associated with SWMU's or AOC's.

Justification for request: Modified title of Part 6 to reflect that this section should only apply to the OD Unit. See the justification statements discussed in amendments 1 and 3 above.

61. Section – Part 6 Title, Page 57

Requested Modification: Change to read: “Corrective Action Requirements for OD Unit Closure”.

Justification for request: Only corrective actions related to the OD Unit are included in the permit. See the justification statement discussion in amendment 1 above.

62. Section 6.0, Page 57: Introduction

Requested Modification: Change to read: “. . . to protect human health and the environment from all releases of hazardous waste or hazardous constituents from the OD Unit.”

Justification for request: Only those activities related to the OD Unit are addressed in the permit. See the justification statement discussion in amendments 2 and 3 above.

63. Section 6.1.2, Page 57: Field Activities

Requested Modification: Delete this entire section.

Justification for request: Notifying the NMED in writing before any field sampling, other field activities, or implementation of work plans is an extra requirement in excess of requirements of the Hazardous Waste Act. 40 CFR 270.30(i) regarding inspection and entry states that Kirtland AFB must allow entry to the Department at reasonable times, and that the Department may sample or monitor at reasonable times.

64. Section 6.1.3, Page 57: Record Preservation

Requested Modification: Change to read: “. . . written notice that clean closure has been accomplished for the OD Unit, the Permittee . . . this permit for closure.”

Justification for request: Only those records related to the OD Unit closure are addressed in the permit. See justification statement discussion in amendments 2 and 3 above.

65. Section 6.1.4, Page 57: Releases Beyond Facility Boundary

Requested Modification: Delete this section.

Justification for request: On 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit, as well as providing notice to the NMED-HWB of its intent to close the OD Unit. Since there have been no releases from the OD Unit, this section is inapplicable. See justification statement discussion in amendments 2 and 3 above.

66. Section 6.1.6, page 58: Quarterly Progress Reports

Requested Modification: Change to read: "...summarizing clean closure corrective action activities for the OD Unit conducted pursuant to this Permit . . . Each report shall summarize the OD Unit clean closure activities for the quarter . . ."

Justification for request: On 13 August 2010, Kirtland AFB terminated the receipt and treatment of hazardous waste at the OD Unit, as well as providing notice to the NMED-HWB of its intent to close the OD Unit. Therefore, only those reports related to the OD Unit closure are addressed in the permit. See justification statement discussion in amendments 2 and 3 above.

67. Section 6.1.7, Page 58: List of SWMUs and AOCs and Annual Reporting of Outdoor Activities

Requested Modification: Delete this entire section.

Justification for request: As written, this section exceeds the authority granted in §74-4-4.2(B) NMSA 1978. §74-4-4.2(B) NMSA requires the NMED-HWB to require corrective action for all releases of hazardous waste from any SWMU. As identified in 55 FR 30808, EPA considers a SWMU as a site where solid waste, to include hazardous waste, has been placed. Similarly, an AOC is a site where a release of hazardous waste has occurred. This section is attempting to require Kirtland AFB to investigate and monitor test and training activities and sites that might have some type of release at some point of time in the future, clearly disregarding the legal pre-requisite of an existing release before such requirements can apply.

Additionally, 40 CFR Subpart M, which was adopted and incorporated in the Title 20 NMAC without exception, specifically states that military munitions are not solid wastes if used for their intended purposes, including training and testing. Since military munitions used for training and testing purposes are not solid wastes, their use can not constitute a release of hazardous waste. Thus, Kirtland AFB test and training sites can not be classified as SWMU's or AOC's solely on

the basis of the use of military munitions, in that SWMU's or AOC's do not exist unless there has been the release or probable release of hazardous wastes.

68. Section 6.1.9, Pages 59 and 60: Determination of Corrective Action Complete (No Further Action)

Requested Modification: Delete this entire section.

Justification for request: This section does not apply to the OD Unit, in that the OD Unit is planned for clean closure. See justification statement discussion in amendment 67 above.

69. Section 6.1.10, Health and Safety Plan

Requested Modification: Change the section to read “The Permittee shall develop an OD Unit Closure Activity Health and Safety Plan as part of the closure activities at the OD Unit. The OD Unit Closure Activity Health and Safety Plan shall be in accordance with: 1. National . . . §§ 1910 and 1926 and 7. Other . . .”

Justification for request: Only health and safety requirements related to the OD Unit are addressed in the permit and KAFB operates under the OSHA Voluntary Protection Program; state and local requirements are not applicable.

70. Section 6.1.11, Page 61: Community Relations Plan

Requested Modification: Delete entire section.

Justification for request: There is no requirement in the CFR to have a Community Relations Plan for an Open Detonation Unit permit. Any permit modifications for the OD Unit are subject to the public notification requirements of 40 CFR §270.42.

71. Section 6.1.12, Page 61: Land Transfer

Requested Modification: Change to read: “In transferring land included in the OD Unit to another entity...”

Justification for request: Only land transfers associated with the OD Unit are addressed in the permit.

72. Section 6.1.13, Page 62: Abandoned Septic Systems

Requested Modification: Delete entire section.

Justification for request: There are no septic systems at the OD Unit.

73. Section 6. 2.1.1, Page 62: General Facility Information

Requested Modification: Change section heading to read “General OD Unit Information” and change “facility” to “OD Unit” throughout the section.

Justification for request: This information is site-specific, and requiring the information for the entire Facility is too open-ended. Only information related to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendment 67 above.

74. Section 6. 2.1. 2, Page 62: Potential Human Receptors Information

Requested Modification: Change “Facility” to “OD Unit” throughout section.

Justification for request: This information is site-specific, and requiring the information for the entire Facility is too open-ended. Only information related to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendment 67 above.

75. Section 6. 2.1.3, Pages 62 and 63: Information on Surface Water

Requested Modification: Delete this section.

Justification for request: There are no surface water bodies associated with or located at the OD Unit or EOD Range. Only information related to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendment 67 above.

76. Section 6.2.2, Pages 63 through 69: Corrective Action Procedures

Requested Modification: Delete entire section.

Justification for request: Corrective action procedures are not applicable to the OD Unit, which will be clean closed. Only procedures applicable to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 above.

77. Section 6.2.3, Page 69: Cleanup Levels

Requested Modification: Change section to read: “The Permittee shall adhere to the requirements of this Permit Section (6.2.3) for implementing and completing cleanup of groundwater and soil at the OD Unit.”

Justification for request: Only cleanup levels related to the OD Unit should be addressed in the Renewal Permit. No surface waters are associated with or located on the OD Unit or EOD Range. See justification statement discussion in amendments 2, 3 and 67 above.

78. Section 6.2.3.1, Page 69: Cleanup Levels for Contaminants in Groundwater (other than Perchlorate)

Requested Modification: Change section to read: “Groundwater sampling results will be compared to the Federal Safe Drinking Water Act maximum contaminant levels (MCL’s). If the levels of hazardous constituents in the groundwater exceed the MCLs, a risk assessment will be prepared for each of the constituents exceeding the MCL. If the risk assessment demonstrates that the level of contamination is unacceptable under CERCLA or RCRA, the groundwater shall be subject to corrective action, and a corrective action work plan subject to NMED review and approval will be developed.”

Justification for request: Change reflects the language contained in the revised OD Unit closure plan submitted to the NMED-HWB on 08 October 2010.

79. Section 6.2.3.2, Page 69: Cleanup Levels for Perchlorate in Groundwater

Requested Modification: Change section to read “If the New Mexico WQCC adopts a perchlorate groundwater standard greater than or equal to 15 ug/L (ppb), the Permittee shall initiate remediation through its CERCLA authority based on a risk assessment and a residential use scenario.”

Justification for request: As written, this section exceeds the authority granted to the NMED-HWB. As per §74-4(A) NMSA 1978, the New Mexico Environmental Improvement Board, and by extension the NMED-HWB, are only allowed to establish requirements that are “equivalent to and no more stringent than federal regulations adopted by the [EPA] pursuant to the federal [RCRA] of 1976, as amended. §74-4(A)(1) also denies the NMED-HWAB the authority to identify and list hazardous wastes that have not been listed and/or designated as hazardous wastes by the EPA. At this time, the EPA has not listed and/or designated perchlorate as a hazardous waste. Additionally, § 20.6.2.3103 NMAC contains no established contaminated level for perchlorate. Finally, both EPA and the Department of Defense as a policy matter have guidance recommending an interim perchlorate action level of 15 ppb.

80. Section 6.2.3.3, Page 69: Cleanup Levels for Soil Contaminants (Other than PCBs and Lead)

Requested Modification: Change section to read: “Inorganic soil contaminant concentrations will be compared to background levels. For other constituents, background will be considered to be the most current NMED residential soil screening level (SSL) or EPA Regional Screening Levels (RSLs). If analysis shows that the soil contains contaminant concentrations that are above the appropriate residential SSL or RSL, additional soils will be excavated, removed, and supplementary conformation samples collected and analyzed, or a risk assessment will be prepared for each constituent exceeding the appropriate residential SSL or RSL.”

Justification for request: Change reflects the language in the revised OD Unit Closure Plan submitted to the NMED-HWB on 08 October 2010.

81. Section 6.2.3.4, Page 70: Cleanup Levels for PCBs in Soil

Requested Modification: Delete entire section.

Justification for request: PCB contamination is not a concern at the OD Unit. Additionally, no regulatory requirement is cited for the PCB soil cleanup level.

82. Section 6.2.3.5, Page 70: Cleanup Levels for Lead in Soil

Requested Modification: Please insert the standard used to establish the 400 mg/kg cleanup level for lead in soil.

Justification for request: Appropriate regulatory citation should be present in the permit to avoid arbitrary direction on cleanup levels.

83. Section 6.2.3.6, Page 70: Cleanup Levels for Surface Water

Requested Modification: Delete entire section.

Justification for request: There are no surface waters at the OD Unit. See justification statement discussion in amendments 2, 3 and 67 above.

84. Section 6.2.3.7, Page 70: Ecological Risk Evaluation and Cleanup Levels

Requested Modification: Change section to read: “Ecological risk shall be evaluated for the OD Unit if clean closure cannot be achieved.”

Justification for request: Only risk evaluation related to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 above.

85. Section 6.2.3.8, Page 70: Requests for Variance from Cleanup Levels

Requested Modification: Change to read “The Permittee may request a variance from a particular cleanup level. If the Permittee requests a variance from a cleanup level, the Permittee shall submit documentation to the Department that achievement of the cleanup level is impracticable . . . Such action shall include, but is not limited to, completion of a site-specific risk assessment and identification of alternate cleanup levels.”

Justification for request: There are no surface waters at the OD Unit. Only variance procedures related to OD Unit cleanup levels should be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 discussed above.

86. Section 6.2.4, Pages 71 through 78: Reporting Requirements

Requested Modification: Delete subsections 6.2.4.2, Investigation Work Plans; 6.2.4.3 Investigation Reports; 6.2.4.6 CME Work Plans; 6.2.4.7 CME Reports; 6.2.4.8 CMI Work Plans; 6.2.4.9 CMI Work Plan Progress Reports; and 6.2.4.10, CMI Reports.

Justification for request: Only reporting requirements related to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 discussed above.

87. Section 6.3, Page 78: Compliance Schedule Tables

Requested Modification: Delete entire section.

Justification for request: There is no compliance schedule for the OD Unit. The compliance schedules referred to in Attachment I are not related to closure of the OD Unit. The revised OD Unit closure plan identifies the closure schedule for the OD Unit. See justification statement discussion in amendments 2, 3 and 67 discussed above.

88. Section 6.4, Pages Special Requirements for Information Submittals and Corrective Measures

Requested Modification: Delete entire section.

Justification for request: There are no special requirement information submittals related to the OD Unit, in that:

1. the OD Unit contains no landfills and, as stated in the revised OD Unit closure plan, will be clean closed.

- 2) the section is also inconsistent with the NMED's adoption of the Military Munitions Rule (MMR) contained in 40 CFR Part 266, Subpart M. As discussed in amendment 67 above, the expenditure of military munitions for their intended purposes exclude them from RCRA regulation, until which time DoD declares them a waste. Also, the Military Munitions Range Program is a CERCLA program and does not fall under the regulatory authority of the NMED/HWB.
3. Groundwater contamination outside of the OD Unit is regulated under the HSWA module associated with the 2005 closure of the Kirtland AFB TSDF storage permit.
4. See the perchlorate justification statement discussed for amendment 79 above.
5. The sanitary sewer line at LF-002 does not contain a regulated hazardous waste, in that domestic sewage is excluded under 40 CFR § 261.4(a)(1).

89. Section 6.5, Pages 80 and 81: Technical Requirements

Requested Modification: Replace all references to SWMUs and AOCs with "OD Unit".

Justification for request: Only technical requirements related to the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 above.

90. Section 6.5.2, Page 81: Documentation of Field Activities

Requested Modification: Change to read "Daily OD Unit closure activities, including . . ."

Justification for request: Only closure activities associated with the OD Unit should be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 above.

91. Section 6.5.17, Page 92: Technical Requirements for Groundwater Investigation

Requested Modification: Change to read "The Permittee . . .originating from the OD Unit to determine . . ."

Justification for request: See justification statement discussion in amendments 2, 3 and 67 above.

92. Section 6.5.17.8, Page 96: Springs

Requested Modification: Delete entire section.

Justification for request: There are no springs at the OD Unit.

G. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “A” – GENERAL FACILITY INFORMATION

93. Section 1.0, Page 110: Introduction

Requested Modification: Delete 2nd sentence “It also presents general information on wastes treated at the OD Unit.”

Justification for request: As of 13 August 2010, Kirtland AFB terminated the receipt and treatment of wastes at the OD Unit.

94. Section 1.1, General Description of the Facility and the EOD Range

Requested Modification: Change title to read: “General Description of Kirtland AFB and the EOD Range.” Change 1st sentence to read “Kirtland AFB, which is owned and operated by the U.S. Air Force (the Permittee)...”

Justification for request: The change in text is more accurate and is more consistent with the remainder of the Renewal Permit.

95. Section 1.2, Pages 110 and 111: Purpose of the OD Treatment Unit

Requested Modification: Change all tenses to past tense.

Justification for request: Past tense will indicate that wastes are no longer treated at the OD Unit.

96. Section 1.3, Page 111: Routes of Travel

Requested Modification: Delete last sentence: “The roads along which wastes are transported to the EOD Range within KAFB include... Demolition Range Road.”

Justification for request: Wastes are no longer transported to the EOD Range.

H. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “B” – LIST OF AUTHORIZED HAZARDOUS WASTES

97. Section 1.0, Pages 113 through 118: Introduction

Requested Modification: Delete the entire section and Table B-1.

Justification for request: The OD Unit is closed to the receipt and treatment of hazardous wastes. Thus, there are no hazardous wastes authorized at the OD Unit.

I. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “C” – WASTE ANALYSIS PLAN

98. Sections 1.0 through 1.5, Pages 119 through 124: All Sections

Requested Modification: Delete Attachment C.

Justification for request: The OD Unit is closed to the receipt and treatment of hazardous wastes. Thus, no waste analysis plan is required.

J. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “D” – ANNUAL SOIL SAMPLING AND ANALYSIS PLAN

99. Sections 1.0 through 1.7, Pages 125 through 137: All Sections

Requested Modification: Delete Attachment D.

Justification for request: The OD Unit is closed to the receipt and treatment of hazardous wastes. Thus, no annual soil sampling is required. Soil sampling for OD Unit closure activities is addressed in the revised OD Unit Closure Plan.

K. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “E” – INSPECTION PLAN

100. Sections 1.3, Page 139: Table E-1, Inspection Schedule for the OD Unit

Requested Modification: Delete items 6 (Is the OD Unit clear of explosives from previous treatment activities including the loading and unloading areas?), 16 (Is there standing water in a pit or crater at the OD Unit?), and 17 (Is there kick out or treatment residues following OD operations?).

Change all frequencies tied to treatment operations to “monthly.”

Justification for request: Treatment operations no longer occur and the 3 identified inspection items are no longer applicable. Inspections will be conducted monthly.

L. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “F” – CONTINGENCY PLAN

101. Section 1.3, Page 140: Characteristics of Waste Managed at the OD Unit

Requested Modification: Change to read: “On 13 August 2010, the Permittee terminated the receipt and treatment of wastes at the OD Unit. The formerly treated reactive (D003) and ignitable (D001) hazardous wastes included explosives, propellants, and pyrotechnics.”

Justification for request: Changed to reflect that treatment operations no longer occur at the OD Unit.

102. Section 1.5, Page 141: Emergency Coordinator

Requested Modification: Change first paragraph to read: “An EC (see Table F-1 of this Permit Attachment) shall be on call during OD Unit closure activities to coordinate emergency response measures. The EC shall be thoroughly familiar with this Contingency Plan, this Permit, characteristics of the hazardous waste formerly managed at the OD Unit, the closure activities being conducted at the OD Unit, the location of the Operating Record at the OD Unit, and the EOD Range layout.

Justification for request: Changed to reflect that treatment operations no longer occur at the OD Unit.

103. Section 1.6.1, Page 142: Spills

Requested Modification: Delete 2nd sentence “If any hazardous waste is spilled during transfer to a treatment unit, transfer of the waste shall be discontinued immediately.”

Justification for request: Changed to reflect that treatment operations and waste transfers no longer occur at the OD Unit.

104. Section 1.6.5.2, Page 143: Evacuation Route

Requested Modification: Change section to read: “The map shall be posted at the EOD Range personnel bunker.”

Justification for request: Changed to reflect that treatment operations no longer occur at the OD Unit.

105. Section 1.8.2, Page 144: Post-Emergency or Incident Reports

Requested Modification: Change item #3 to read: “The notification shall address the fact that closure activities will not continue until cleanup procedures are completed and that all emergency equipment is cleaned and fit for its intended use.”

Justification for request: Change to reflect that treatment operations no longer occur at the OD Unit.

106. Section 1.8.3, Page 145: Table F-1, Emergency Coordinator Contact Information for the OD Unit

Requested Modification: Strike the home phone number of Mr. D. Brent Wilson and replace with his 24-hour cell phone number (505-401-1197).

List Alternate EC: Mr. H. Bo Bohannon, Address: Building 20684 2050 Wyoming Blvd SE KAFB, NM 87117 Office: (505) 846-7911 24-Hour Cell Phone: (505) 270-5080

Justification for request: As discussed in KAFB's letter to the NMED on 28 Feb 2010 requesting a modification to the contingency plan, the Freedom of Information Act exempts releasing employee's unlisted home phone numbers. Mr. Wilson's cell phone number can be called 24 hours per day. Also, Mr. H. Bohannon serves as the alternate EC.

107. Section 1.8.3, Page 146: Table F-2, Type and Location of Emergency Equipment Available for Use at the OD Unit

Requested Modification: Replace all contact numbers with the KCP number: 911 or (505) 846-3777.

Justification for request: As discussed in KAFB's letter to the NMED on 28 Feb 2010 requesting a modification to the contingency plan, all emergency equipment is available by contacting the Kirtland AFB Command Post, which eliminates the multiple contact numbers.

M. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT G – PERSONNEL TRAINING PLAN

108. Section 1.0, Page 148: Introduction

Requested Modification: Change section to read: "The primary objective of the training program shall be to prepare personnel to support closure operations at the Open Detonation (OD) Unit in a safe and environmentally sound manner and in compliance with this Permit and the New Mexico Hazardous Waste Management Regulations (HWMR), 20.4.1 NMAC. To achieve this objective, the program provides personnel with training relevant to their positions.

All personnel shall complete initial training prior to participating in OD Unit closure activities. Personnel shall not work at the OD Unit until they have completed training on the Contingency Plan (Permit Attachment F). Personnel

shall be given, at a minimum, a basic understanding of the regulatory requirements of hazardous waste management, this Permit, and emergency response procedures. Personnel shall receive additional classroom and on-the-job training designed specifically to teach them how to perform their duties safely and in conformance with regulatory requirements and this Permit. All personnel shall receive the required training prior to being allowed to work unsupervised.”

Justification for request: Changed to reflect that treatment operations no longer occur at the OD Unit.

109. Section 1.1, Page 148: Training Program

Requested Modification: Change section to read: “Training for EOD unit personnel is the overall responsibility of the EOD Flight Chief. Training includes formal classroom sessions, on-the-job training, and review of written procedures and plans. A summary of the training program for personnel is shown in Table G-1.”

Justification for request: Training on the Renewal Permit requirements and procedures for OD Unit closure will be taught by other qualified personnel, not by EOD technicians.

110. Section 1.1.2, Page 148: Relevance of Training to Job Position

Requested Modification: Change section to read: “The training program shall provide employees with training to respond effectively to emergencies at the OD Unit. Personnel shall receive relevant training on the requirements of this Permit (including Contingency Plan implementation) and OD Unit closure activities (including emergency procedures, equipment, and systems).”

Justification for request: Changed to reflect that treatment operations no longer occur at the OD Unit.

111. Section 1.3, Pages 149 and 150: Table G-1, Training Program for the OD Unit

Requested Modification: Change “Content” of “Relevant In-House Training” to read:

“General Overview of Procedures to Perform Closure at the OD Unit; Range Operation; Safety Practices; Security; Range Inspections; Preventive Procedures, Structures, and Equipment”

Justification for request: Changed to reflect that treatment operations no longer occur at the OD Unit.

N. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “H” – CLOSURE PLAN

112. Sections 1.0 through 1.6, Pages 151 through 168: All Sections

Requested Modification: Replace sections 1.0 through 1.6 and Tables H-1 through H-7 with the revised OD Unit closure plan that was submitted to the NMED-HWB by Kirtland AFB on 8 October 2010.

Justification for request: The revised closure plan reflects changes in the timetable for closure of the OD Unit, as well as the processes and procedures to be following in completing a compliant clean closure at the OD Unit.

O. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “I” – COMPLIANCE SCHEDULES

113. Section 1.0, Page 169: Introduction

Requested Modification: Change section to read: “The Permittee shall meet the due dates in the compliance schedules of Tables I-1 and I-2 of this Permit Attachment (I), as well as any other due dates specified in this Permit that are not included in the tables of Permit Attachment I. Table I-1 contains a list of general submittals and their due dates. Table I-2 lists various submittals related to OD Unit corrective action and their due dates.”

Justification for request: Compliance schedules not applicable to the OD Unit should not be addressed in the Renewal Permit. See justification statement discussion in amendments 2, 3 and 67.

114. Section 1.0, Page 170: Table I-1, General Submittals

Requested Modification: Remove schedules for: Waste Minimization Program Certified Report; Annual Sampling and Analysis Report for Air Permit; Annual Soil Sampling Report; Monitoring Well Installation Plan; Well Completion Report; Groundwater Sampling and Analysis Plan

Justification for request: KAFB submitted its intent to close the OD Unit on 13 August 2010 and discontinue the treatment of waste, which either eliminates the need for these requirements or moves them to the submitted closure plan for the OD Unit. See justification statement discussion in amendments 2, 3 and 67 above.

115 Section 1.0, Pages 171 and 172: Table I-2, Submittal Requirements for Corrective Action

Requested Modification: Delete the following submittals and corresponding due dates: Annual Report: Outdoor Testing and Training Activities (Permit Section 6.1.7); Field Sampling/Activities (Permit Section 6.1.2); Verbal Notification of newly-discovered releases, SWMUs, or AOCs (Permit Section 6.1.8); Written Notification of newly-discovered releases, SWMUs, or AOCs (Permit Section 6.1.8); SWMU Assessment Report (SAR) (Permit Section 6.1.8); Investigation Work Plan (Permit Section 6.2.2.1.1); Investigation Report (Permit Section 6.2.2.1.2); Corrective Measures Evaluation (CME) Work Plan (Permit Section 6.2.2.2.2); Corrective Measures Evaluation (CME) Report (Permit Section 6.2.2.2.3); Risk Assessment Report (Permit Section 6.2.4.5); CMI Work Plan (Permit Section 6.2.2.2.7); CMI Work Plan Progress Report (Permit Section 6.2.2.2.9); CMI Report (Permit Section 6.2.2.2.10); Accelerated Corrective Measures (ACM) Work Plan (Permit Section 6.2.2.2.11.2); ACM CMI Report (Permit Section 6.2.2.2.11.3); Interim Measures Work Plan (Permit Section 6.2.2.2.12.2); Interim Measures Report (Permit Section 6.2.2.2.12.5); Emergency Interim Measures (Permit Section 6.2.2.2.12.4); Corrective Measures Evaluation (CME) Work Plan: Landfills with Contents Not Removed (Permit Section 6.4.1.1); Military Range Assessment Report (Permit Section 6.4.1.2)

Justification for request: Changes reflect other modifications requested in other sections of the Renewal Permit.

116. Section 1.0, Pages 173 through 175: Table I-3, Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Requiring Corrective Action

Requested Modification: Delete table.

Justification for request: These SWMUs and AOCs are not applicable to the OD Unit Renewal Permit. See justification statement discussion in amendments 2, 3 and 67 above.

P. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “J” – LIST OF HAZARDOUS WASTE MANAGEMENT UNITS

117. Section 1.0, Page 176: Table J-1, Hazardous Waste Management Units

Requested Modification: Revise table to reflect open detonation unit is pending closure.

Justification for request: KAFB submitted a revised closure plan for the OD Unit on 08 October 2010.

Q. REQUESTED MODIFICATIONS: PERMIT ATTACHMENT “K” – LIST OF SWMU’s and AOC’s FOR WHICH CORRECTIVE ACTION IS COMPLETE

118. Section 1.0, Pages 177 through 181: Introduction and Tables

Requested Modification: Delete Attachment K.

Justification for request: These SWMUs and AOCs are not applicable to the OD Unit Renewal Permit. See justification statement discussion in amendments 2, 3 and 67.

IV. MODIFICATION REQUEST 3 - TEMPORARY AUTHORIZATION TO IMPLEMENT OD UNIT CLOSURE.

As provided by 40 CFR §270.42(e), Kirtland AFB is allowed to submit a Class 3 permit modification request for temporary authorization to “facilitate timely implementation of closure [] activities,” provided the authorization is necessary to achieve the closure before action may be taken on a modification request. Upon receipt of a request for a temporary authorization to implement closure, the NMED-HWB may grant the request for a term of one hundred eighty (180) days, with the option of an additional one hundred eighty (180) if determined to be warranted to continue the closure activity.

Accordingly, Kirtland AFB requests temporary authorization to implement the revised closure plan filed with the NMED-HWB on 8 October 2010.



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 377TH AIR BASE WING (AFMC)
KIRTLAND AIR FORCE BASE NEW MEXICO

KAFB Date Stamp
Copy

Colonel Robert L. Maness
377 ABW/CC
2000 Wyoming Blvd SE
Kirtland AFB, NM 87117-5000



00105ZUW

Mr. James Bearzi
Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Dear Mr. Bearzi:

Kirtland Air Force Base (AFB) is submitting a revised closure plan for the Kirtland AFB Open Detonation Unit in accordance with our letter dated 13 August 2010. In that letter, we stated that we had closed the open detonation unit to all further treatment activities effective immediately and would provide a revised closure plan within sixty (60) days. The Open Detonation Unit at Kirtland AFB is permitted by the New Mexico Environment Department (NMED) under the Resource Conservation and Recovery Act (RCRA), Permit #NM9570024423-OD, which was issued on 20 December 1994, to treat hazardous waste by open detonation. The attached revised closure plan is being submitted as a Class 3 modification request to Permit # NM9570024423-OD, Module II, Attachment F.

A closure plan for the adjacent Kirtland Open Burn Unit was previously submitted to the NMED on 21 June 2010. This closure plan complied with the September 2009 Stipulated Final Order and Settlement Agreement, HWB # 09-00 (CO). At that time, Kirtland AFB had proposed including the Open Burn Unit final sampling and monitoring requirements into the Kirtland Open Detonation Unit closure plan, which had a projected closure date of 2050. However, now that both the Open Burn and Open Detonation Units are closing concurrently, a revised Open Burn Unit closure plan is required. The attached revised Open Burn Unit closure plan is also being resubmitted as a Class 3 modification request to Permit # NM9570024423-OB.

As required by 40 CFR § 264.113(b) and the Open Burn and Open Detonation Treatment Unit Permits, Module II, Attachment F, Closure Plans, Kirtland AFB must complete partial and final closure activities in accordance with the approved closure plan and within one hundred eighty (180) days of receipt of the final volume of hazardous waste. Due to the inclusion of the installation of monitoring wells and eight (8) quarters of groundwater sampling in each Closure Plan, Kirtland AFB will not be able to complete the closure within the required one hundred eighty (180) days. Therefore, pursuant to 40 CFR § 264.113(b), Kirtland AFB is requesting an extension of the closure period to allow the eight (8) quarters of groundwater sampling to be

completed prior to preparing and submitting the final report and Certification of Closure required by 40 CFR § 264.115.

While the Kirtland AFB 2010 decisions to eliminate all hazardous waste open burn and detonation treatment at the permitted units and to initiate the closure process was unexpected, the decisions to do so will lead to site remediation and closure approximately forty (40) years ahead of the previously anticipated closure date. In addition to being welcomed by the Albuquerque community as a whole, the closing of these units also meet NMED's previously stated goals of eliminating all open burn and detonation treatment facilities within New Mexico.

Public notice of the modification requests are being made and proof of the notices will be provided to you. Additionally, as we move forward through this process, Kirtland AFB will work closely with your office to insure the final Closure Plan and closure activities will comply with all closure requirements. If you have any questions, please contact Mr. John Pike, Environmental Sustainability Chief, at (505) 846-4586.

Sincerely,



ROBERT L. MANESS, Colonel, USAF
Commander

cc:

John Kieling, NMED

Will Moats, NMED

Attachments (2)

1. Kirtland AFB Revised Open Detonation Unit Closure Plan
2. Kirtland AFB Revised Open Burn Unit Closure Plan

KIRTLAND AIR FORCE BASE ALBUQUERQUE, NEW MEXICO

Closure Plan for Open Detonation Unit

October 2010



377 MSG/CEAN
2050 Wyoming Blvd. SE
Kirtland AFB, New Mexico 87117-5270

**Kirtland Air Force Base, Albuquerque, New Mexico
Air Force Environmental Compliance Program
Closure Plan for the Open Detonation Unit**

October 2010



**Kirtland Air Force Base, Albuquerque, New Mexico
Air Force Environmental Compliance Program
Closure Plan for the Open Detonation Unit**

October 2010



**40 CFR §270.11
DOCUMENT CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



ROBERT L. MANESS, Colonel, USAF
Commander

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1. INTRODUCTION

This closure plan describes the activities necessary to close the open detonation (OD) treatment unit located within the Explosive Ordnance Disposal (EOD) Range at Kirtland Air Force Base (AFB). The OD Unit consists of a cleared circular area approximately 1,500 feet in diameter and surrounded and delineated by an approximately two-ft high earthen berm. Figures 1-1 and 1-2 show the location of the EOD Range at Kirtland AFB, and the collocated OD and open burn (OB) units within the EOD Range. Detonations were conducted in pits measuring approximately 30 ft long, 15 wide and 12 feet deep.

Until final closure of the unit is complete in accordance with the New Mexico Hazardous Waste Management Regulations and certification of closure has been approved by the New Mexico Environment Department (NMED), a copy of the approved Closure Plan and any revisions thereof shall be maintained in the Operating Record. This Closure Plan and any revisions thereof shall be made available, upon request, to the Department.

If the OD Unit cannot be clean-closed, a post-closure care plan will be prepared to address the hazardous constituents remaining at the site and submitted to the NMED for approval.

The OD unit is collocated with an OB treatment unit at the EOD Range. The OD and OB units are scheduled to undergo final closure activities simultaneously. The OB Unit has a separate closure plan, but several elements of the OB and OD unit closure plans overlap and are noted within the documents. Additionally, there is currently a perchlorate groundwater investigation occurring to the west of the EOD range. This investigation and its results are independent of this OD unit closure plan.

1.1 General Closure Information

This closure plan has been prepared in compliance with the requirements of the Resource Conservation Recovery Act (RCRA) (42 U.S.C. §§6901 et seq.) and its implementing regulations at 40 CFR Parts 264 and 270 (see 40 CFR Part 264 Subparts G and X and 270.14(b)(13)), and state implementing statutes and regulations under which the state has delegated RCRA authority (see New Mexico Hazardous Waste Act, Chapter 74 Article 4 NMSA 1978 and 20.4.1 NMAC).

1.2 Closure Performance Standard

The OD Unit shall be closed to meet the following performance standards:

- Minimize the need for further maintenance;
- Control, minimize or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to ground water or surface waters or to the atmosphere; and
- Comply with the requirements of 40 CFR Part 264, Subpart G and 40 CFR §264.601.

1.3 Final Closure Activities

The last treatment event that occurred at the OD Unit was on 11 August 2010. The NMED was notified on 13 August 2010 that Kirtland AFB had closed the OD Unit for all treatment activities effective immediately. Partial closure of the OD Unit is anticipated to be completed in 2011, with final closure and confirmation subject to the results of groundwater monitoring. Kirtland AFB will notify the Secretary of the NMED, in writing, at least 45 calendar days prior to the date that closure activities will commence.

Final closure activities at the OD Unit shall consist of:

- Installation of four groundwater monitoring wells at the EOD range (one upgradient and three downgradient wells) and eight consecutive quarters of groundwater sampling to determine the presence or absence of groundwater contamination;
- Removing any soil or debris from the OD Unit that have contaminant concentrations which pose unacceptable risk to human health or the environment;
- Sending for treatment and disposal any solid and hazardous waste, including any treatment residues, to a permitted Treatment, Storage, or Disposal Facility (TSDF) in accordance with applicable regulatory requirements.

There are no structures or equipment at the OD Unit that require removal.

Final closure for the OD Unit shall be completed when:

- All solid and hazardous waste has been disposed of off-site as required by law;
- Sampling demonstrates that no unacceptable risk to human health or the environment exists in soil or groundwater at the OD Unit;
- A Certification of Closure and Closure Report has been submitted to the NMED; and
- NMED has approved the Certification of Closure and Closure Report.

1.4 Maximum Extent of Operations and Maximum Waste Inventory

The OD Unit was permitted on 20 December of 1994 as Permit# NM9570024423-OD, which allowed 100,000 pounds of net explosive weight (NEW) to be treated at the OD unit annually. Rocket motors, large caliber munitions, explosive wastes and firearms were treated at the OD Unit.

Operations at the OD Unit ceased in August 2010. All wastes were removed from the unit. Therefore, the maximum waste inventory is zero.

Closure activities and any corrective action that may be required shall not be limited to the OD Unit if contamination migrates beyond the OD Unit boundary.

1.5 Schedule for Closure

Final closure of the OD Unit will proceed by the general schedule presented below:

**TABLE 1-1
Closure Schedule**

Activity	Time Required
Notify the Department of receiving final volume of hazardous waste at the OD Unit	Completed
Removal of all hazardous waste from the OD unit	Completed
NMED approval of final OD Unit closure plan	TBD
Advertise for proposals	Approval of closure plan + 30 days
Receive proposals	Approval of closure plan + 60 days
Select contractor and award contract	Approval of closure plan + 90 days
Submit work plan to NMED for approval, including monitoring well installation plan	Contract award + 60 days
Notify the Department that final closure activities will commence	-45 days prior to closure activities commencing
Begin final closure activities	Day 0
Obtain analysis of soil samples	Day 45
Obtain analysis of groundwater samples from monitoring wells	Monitoring well installation completion + completion of eight consecutive quarters of monitoring
Final closure activities completed	Upon receipt of all soil and groundwater sampling results
Submit final report and closure certification to the NMED	Completion of final closure activities + 60 Days

Note: The schedule above indicates calendar days from the beginning by which activities shall be completed. Some activities may be conducted simultaneously or may not require the amount of time listed. Under 40 CFR §264.113, closure activities are to be complete within 180 days of commencement of closure activities. The monitoring well component of the closure plan, however, necessitates a request for an extension of the normal schedule guidelines.

1.6 Amendment of Closure Plan

If it becomes necessary to amend this Closure Plan, Kirtland AFB will submit, in accordance with applicable regulations, a written notification of or request for a permit modification, as appropriate, describing any change in closure activities which affects this plan. The written notification or request will include a copy of the amended plan for approval by the Department. Kirtland AFB will submit a written notification of, or a request for, a permit modification.

1.7 Closure and Post-Closure Cost Estimate, Financial Assurance and Liability Requirements

Since Kirtland AFB facility is a federal facility, it is currently exempt from the requirement to provide closure and post-closure care estimates and the requirements to provide financial assurance and liability insurance for closure and post-closure activities pursuant to 40 CFR Part 264, Subpart H.

1.8 Closure Certification

Within 60 days after completion of the final closure activities for the OB Unit and the OD Unit, Kirtland AFB will submit, via certified mail, a certification that the units have been closed in accordance with the specifications of the approved closure plan. The certification will be signed by a responsible representative of Kirtland AFB and by an independent, professional engineer registered in the State of New Mexico. Documentation supporting the independent, registered professional engineer's certification shall be furnished to the Department with the certification.

1.9 Closure Report

Within 60 days of completion of the final closure activities, a closure report shall be submitted to the Department. The report will document the closure activities conducted and contain, at a minimum, the following information:

- A summary of the closure activities;
- Any significant variance from the approved closure plan and the reason for the variance;
- A summary of sampling data associated with closure, including analytical results for all field and laboratory quality control samples;
- A quality assurance statement on the adequacy of the analyses to support closure;
- The location of the file of supporting documentation (e.g., memos, logbooks, laboratory sample analysis data);
- Disposal location of all solid and hazardous wastes; and,
- Certification of the accuracy of the report.

1.10 Survey Plat and Post-Closure Requirements

Upon final closure of the OB Unit and the OD unit, a survey plat will be submitted to the NMED. In the event that closure performance standards cannot be achieved for the OD Unit, a post-closure plan will be submitted to the Department for review and approval.

2. CLOSURE PROCEDURES

There is no hazardous waste present at the OD Unit; the last treatment event at the OD Unit occurred on 11 August 2010, and there are no treatment residues remaining. There are no structures or equipment at the OD Unit. (The structures associated with the collocated OB Unit are addressed under the OB Unit closure plan.)

The first phase of closure will consist of a hazards survey of the OD Unit conducted by qualified contractor health physics and industrial hygiene personnel, which will include unexploded ordnance (UXO) safety personnel, and Kirtland AFB EOD personnel. The purpose of the survey shall be to locate and remove any "kick-out" (untreated waste, waste fragments, or UXO), and to identify potential contamination concerns that may present hazards to workers during the closure activities and to specify any control measures necessary to reduce worker risk. This survey will provide the information necessary for health physics, UXO safety, and industrial hygiene personnel to identify worker qualifications, personal protective equipment (PPE), safety awareness, work permits, exposure control programs, and emergency coordination that will be required to perform closure. Any munitions and explosives of concern (MEC) identified during the hazard survey will be reported to and handled by Kirtland AFB EOD staff personnel only in accordance with standard operating procedures. All workers involved in the closure activities will be required to have training and medical monitoring as required by applicable regulations. Personnel performing closure activities will be required to wear PPE as specified by health physics, UXO safety, and industrial hygiene personnel.

Sufficient sampling and analysis will be required to demonstrate that hazardous waste residues are not present at the site after closure and there are no contaminant concentrations which pose unacceptable risk to human health or the environment. Soil and groundwater samples will be analyzed for parameters listed in Tables 2-1, 2-2 and 2-3 to verify the presence or absence of hazardous waste contamination.

Groundwater sampling results will be compared to the Federal Safe Drinking Water Act maximum contaminant levels (MCL's), included in Table 2-4. If the levels of hazardous constituents in the groundwater exceed the MCLs, a risk assessment will be prepared for each constituent showing a significant increase over samples collected from the area. If the risk assessment demonstrates that the level of contamination is unacceptable, the groundwater shall be subject to corrective action, and a corrective action work plan subject to NMED review and approval will be developed. For perchlorate, Kirtland AFB will apply the Office of the Under Secretary of Defense *Perchlorate Release Management Policy*, 22 April 2009.

Inorganic soil contaminant concentrations will be compared to background levels, summarized in Table 2-5. For other constituents, background will be considered to be the most current NMED residential soil screening level (SSL) or EPA Regional Screening Levels (RSLs), included in Table 2-6. If analysis shows that the soil contains contaminant concentrations which are above background or the appropriate residential SSL or RSL, additional soils will be excavated, removed, and supplementary conformation samples collected and analyzed, or a risk assessment will be prepared for each constituent showing a significant increase over samples collected from the area.

An alternative demonstration of decontamination may be proposed and justified at the time of final closure of the OD Unit, as circumstances indicate. The Secretary of the NMED will

evaluate the proposed alternative in accordance with standards and guidance then in effect and, if approved incorporate the alternative into the Closure Plan.

2.1 Monitoring Wells

2.1.1 Installation of New Monitoring Wells

The OD Unit is subject to the environmental performance standards of 40 C.F.R. § 264.601. As such, groundwater monitoring will be conducted as part of closure activities to demonstrate that operations have not impacted groundwater. Four monitoring wells, one upgradient and three downgradient of the EOD Range, will be installed. The location of the proposed monitoring wells is presented in Figure 2-1. These proposed monitoring wells are the same wells as those proposed in the closure plan for the collocated OB Unit.

Kirtland will submit a work plan which will include a monitoring well installation plan, according to the schedule in Table 1-1. At a minimum, the discussion pertaining to the installation of four monitoring wells at the EOD Range will address:

- Well locations,
- Drilling specifications,
- Well construction specifications,
- Well development procedures,
- A schedule for implementation and completion of the well installations; and
- Preparation and submittal of a well completion report.

In addition, the wells installed at the EOD Range will meet the groundwater monitoring requirements of 40 C.F.R. §§ 264.97(a)(2), (b), and (c). Within 30 days of completion of well installation, Kirtland AFB will submit a well completion report to NMED for approval.

Groundwater monitoring wells will be properly plugged and abandoned in accordance with all regulations and NMED guidance, provided groundwater contamination has not occurred. If groundwater contamination has occurred, these monitoring wells will be maintained for the purpose of implementing corrective action. Wells will not be plugged and abandoned until NMED has approved clean closure of the OD unit and the collocated OB unit.

2.1.2 Mesa Schoolhouse Well

The Mesa Schoolhouse Well, a Department of Energy/National Nuclear Surety Administration (DOE/NNSA) well authorized under Kirtland AFB permit #PERM/0-K1-91-0010 is currently being monitored for groundwater contamination as part of the December 1994 OD Unit's sampling and analysis plan. Once the new proposed monitoring wells are installed and operational, sampling will discontinue at the Mesa Schoolhouse Well.

2.2 Sampling, Decontamination Procedures, and PPE

This section describes procedures and methods for soil and liquid sampling applicable to closure activities. While the procedures and methods are specific, other applicable procedures or methods given in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) may

be used if conditions or experience show the alternate method to be more appropriate, and if approved by the NMED. All sampling procedures actually used will be annotated in the final closure report. Sampling will be conducted in accordance with procedures given in "Samplers and Sampling Procedures for Hazardous Waste Streams" (EPA 600/2-80-018) or SW-846.

Surface and subsurface soil and any scrap metal at the OD Unit will be characterized by sampling and analysis.

The tools and equipment used during the sampling will be vacuumed, cleaned with detergent and water, and scraped as necessary to remove any residue. The wash water will be collected and analyzed for characterization of waste. The vacuums used and their contents will be containerized and shipped off site as hazardous waste for disposal.

All of the PPE worn by personnel performing closure activities will be disposable; therefore, all PPE will be placed into containers and managed as hazardous waste. This waste will be considered to be contaminated with all of the hazardous waste constituents contained in the wastes that have been treated at the OB Unit and the OD unit. All contained PPE wastes will be transported to a permitted facility for disposal.

2.2.1 Soil Sampling

Soil samples shall be conducted on a 25-foot by 25-foot grid spacing from the surface to 15 ft below ground surface at five foot intervals (total of four samples per location). At a minimum, the grid will encompass all portions of the OD Unit that have hosted or may have hosted a pit used for the treatment of hazardous waste. Any areas used as training at the OD Unit shall be considered a part of the OD Unit for the purposes of establishing the sampling grid.

The samples will be analyzed for the parameters listed in Tables 2-1, 2-2 and 2-3, which include all hazardous constituents of the hazardous wastes that were detonated at the OD Unit.

Surface soil samples (zero to six inches depth) will be collected with a wooden or Teflon™ trowel or scoop. Disposable sampling tools will be used. In the event that NMED requests split samples, sufficient soils will be collected to provide split samples to the NMED representatives.

A Veihmeyer soil sampler, auger drill, direct push technology or other appropriate method will be used to collect subsurface soil samples. Only discrete grab samples shall be collected; no samples shall be composited.

Clean sampling equipment shall be used to collect each sample. Unused, disposable sampling equipment may be presumed clean if still in a factory-sealed wrapper prior to use. Reusable sampling equipment shall be decontaminated after each use by scraping to remove any loose material, washing with a detergent and water solution, rinsing several times with tap water, rinsing with deionized water, and drained of excess water, and air-dried or wiped dry.

2.2.2 Liquid Sampling

Groundwater samples will be collected from four newly installed groundwater monitoring wells at the EOD range. Eight consecutive quarters of groundwater monitoring will be conducted initially, following installation of the wells. Groundwater samples will be obtained using methods approved by the NMED within eight hours of the completion of well purging. The samples will

be analyzed for the parameters listed in Tables 2-1, 2-2 and 2-3, which include all hazardous constituents of the hazardous wastes that were treated at the OD Unit.

Groundwater in monitoring wells with low recharge rates and that purge dry shall be sampled when the water level in the well has recovered sufficiently to collect the required samples. A low-flow bladder pump will be utilized. Groundwater samples intended for metals analysis will be submitted to the laboratory for analyses of total metals; the samples will not be filtered in the field or laboratory.

Glass tubes will be used to sample liquids. The primary advantage to using this type of sampling device is that the tube can be disposed of after each sample is collected, thus eliminating cross-contamination. Alternatively, a Coliwasa sampler may be used to sample liquids.

2.2.3 Appropriate Sample Containers and Preservatives

Samples will be placed in clean containers compatible with the intended analysis and will be properly prepared and preserved to maintain sample integrity. The most recent version of SW-846 lists the proper container, preservative, and holding time for each chemical parameter of interest, and these requirements will be followed for all samples collected during the closure process. Table 2-7 and 2-8 summarize the sample containers, preservation techniques, and holding times for soil and liquid samples.

2.2.4 Sample Handling and Documentation

Each sample will be labeled, sealed, and accompanied by a chain-of-custody and a request-for-analysis form. A chain-of-custody form will be used to track samples from collection through analysis to ensure that the integrity of the samples is protected, and that analytical results can be attributed to specific closure activities or specific areas. The procedures followed during closure will be equivalent to those provided in the most current version of SW-846. Important aspects of the procedures are presented below. A chain-of-custody form will be prepared for all samples collected for laboratory analyses. The form includes:

- Sample identification number;
- Name and signature of sample collector;
- Date and time of sample collection;
- Location at which sample was collected;
- Type of waste (e.g., soil, liquid, etc.);
- Signatures of persons who have had samples in their possession;
- Dates and times of possession.

This form will be initiated at the point of sample collection and will then remain with the sample during transfer to the laboratory. The form will be completed upon receipt at the laboratory and returned to Kirtland AFB for inclusion in facility operating record. The chain-of-custody form will include a request-for analysis form that lists all analyses to be performed for the identified samples and all special instructions relating to sample management or analysis. Any potential hazards posed by the samples shall be listed on the request-for-analysis form.

The sample containers will be sealed with gummed paper seals attached to the containers in such a way that the seals must be broken in order to open the containers. The seals and sample labels must be completed with a waterproof pen. The sample labels are necessary to prevent

misidentification of samples and shall include the following information: a unique sample number; name or initials of sample collector; sample collection date and time; sample location; and, sample type, depth, and description.

A closure sampling field log book will be kept and will contain all information pertinent to field surveys and sampling. Sufficient information shall be recorded so that a person can reasonably reconstruct what occurred at a sampling event without relying on a collector's memory. The log book shall have bound and consecutively numbered pages in 8 by 11-inch format. Minimum entries will include:

- Purpose of sample;
- Location of sampling;
- Name and business address of person making log entry;
- Number, type, and volume of sample;
- Description of each sampling methodology and equipment used;
- Date and time of sample collection;
- Sample destination and transporter's name (name of laboratory, UPS, etc.);
- Map or photograph of the sampling site;
- Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc.);
- Field measurements, if any (pH, flammability, conductivity, explosivity, etc.);
- Collector's sample identification number(s);
- Signature of person responsible for the log entry.

Documentation of sample acceptance at the laboratory will be provided following sample screening and log-in. This documentation may consist of signed copies of the chain-of-custody, documentation or a letter detailing the field sample numbers accepted. Corresponding laboratory sample identification numbers will be provided. The laboratory is required to have procedures for minimizing cross contamination of samples and securing sample custody within the laboratory.

2.2.5 Sample Shipping

Samples shall be packaged and shipped to the laboratory in accordance with DOT shipping requirements and in a manner to ensure that the integrity of the samples is protected. The sample containers shall be cushioned to protect against breakage or puncture.

2.2.6 Sample Analysis

Closure samples will be analyzed by an EPA-certified commercial laboratory. The analytical laboratory shall have procedures for minimizing cross-contamination of samples and securing sample custody within the laboratory. Test methods for analysis of all samples will be performed according to procedures documented in the most current version of SW-846. Hazardous constituents associated with the regulated wastes treated at the OD Unit are included in these analyses. Recommended analytical methods, detection limits, and instrumentation are provided in Table 2-1 for metals analysis; in Table 2-2 for organics analysis; and in Table 2-3 for high explosives (HE) analysis.

Minimum calibration, operation, and quality control (bias, precision, blank and matrix effects) requirements for laboratory analyses shall be performed as listed in the individual analytical methods of SW-846. All laboratory analyst notebooks, log sheets, instrument printouts, charts, and calculations relevant to analyses of these samples shall be identified and remain accessible.

This information may be requested for independent review and validation. If requested by the NMED, this information will be provided.

2.2.7 Quality Assurance/Quality Control Program

Because decisions about closure activities may be based, in part, on analyses of samples, a program to ensure reliability of analytical data is mandatory. Data reliability will be ensured by documenting sample management so that analyses are traceable to specific areas of potential contamination and by following a quality assurance/quality control (QA/QC) program that mandates documentation of the precision and accuracy of laboratory analyses, as well as data completeness, representativeness, and comparability.

Sampling activities will include collection of QC samples in addition to field documentation requirements. QC samples to be collected include: duplicate samples, trip blanks, field blanks, and rinsate blanks. Table 2-9 summarizes field QC sample requirements.

Blanks and duplicate samples will be collected to determine potential errors introduced in the data from sample collection and handling activities. To determine the potential for cross contamination, rinsate blanks consisting of rinsate from decontaminated grading equipment will be collected and analyzed. At least one rinsate blank will be collected for every ten samples. Duplicate samples will be collected at a frequency of one duplicate sample for every ten field samples. In no case will less than one rinsate blank or duplicate sample be collected for a sampling effort. These blank and duplicate samples will be identified and treated as separate samples. Acceptance criteria for QA/QC sample analyses will be compatible with the most recent version of SW-846 or other applicable EPA guidance.

The analytical laboratory shall operate under a QA program plan (QAPP) that meets the requirements of SW-846. QC procedures in the analytical laboratory are guided by the laboratory's QAPP. Laboratory QC samples are required to establish the accuracy and precision of analytical data in order to determine the quality of the data. Table 2-10 lists laboratory QC procedures by analytical methods.

The analytical laboratory will use the following criteria for data validation:

- Completeness of data deliverable;
- Collection, extraction, and analysis holding times;
- Blank data;
- Laboratory control sample results;
- Matrix spike/matrix spike duplicate results;
- Laboratory duplicate sample results; and
- Overall data assessment and usability.

TABLE 2-1
Maximum Detection Limits, Analytical Methods and Instrumentation for Metals Analysis

Analyte	Maximum Detection Limit ^a		EPA SW-846 ^b Analytical Method	Instrumentation (Used in Analysis)
	Water (µg/L)	Soil (mg/kg)		
Arsenic	1.0	1.0	6010C, 7000B, 7061A	ICP-AES ^c , FLAA ^d , GHAA ^e
Antimony	2.0	6.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Barium	2.0	20.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Beryllium	0.20	0.50	6010C, 7000B	ICP-AES ^c , FLAA ^d
Cadmium	0.10	0.5	6010C, 7000B	ICP-AES ^c , FLAA ^d
Chromium	1.0	1.0	6010C, 7000B, 7195, 7196A, 7197	ICP-AES ^c , FLAA ^d , coprecipitation, colorimetric, chelation/extraction
Copper	2.0	2.5	6010C, 7470A, 7471B	ICP-AES ^c , CVAA ^f
Lead	1.0	1.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Mercury	0.2	0.1	7000B, 7470A, 7471B	FLAA ^d , CVAA ^f
Nickel	1.0	4.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Selenium	2.0	3.5	6010C, 7000B, 7741B, 7742	ICP-AES ^c , FLAA ^d , GHAA ^e , BRAA ^g
Silver	0.20	1.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Thallium	1.0	2.5	6010C, 7000B	ICP-AES ^c , FLAA ^d
Tin	5.0	5.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Vanadium	1.0	5.0	6010C, 7000B	ICP-AES ^c , FLAA ^d
Zinc	2.0	5.0	6010C, 7000B	ICP-AES ^c , FLAA ^d

^a mg.kg = milligrams per kilogram (non-aqueous detection limit); µg/L = micrograms per liter (aqueous detection limit)

^b U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846

^c ICP-AES = Inductively coupled plasma atomic emission spectrometry

^d FLAA = Flame atomic absorption spectrometry

^e GHAA = Gaseous hydride atomic absorption spectrometry

^f CVAA = Cold-vapor atomic absorption spectrometry spectrometry

^g BRAA = Borohydride Reduction Graphite-furnace atomic absorption

TABLE 2-2
Maximum Detection Limits, Analytical Methods and Instrumentation for Organics

Analyte	Maximum Detection Limit ^a		EPA SW-846 ^b Analytical Method	Instrumentation (Used in Analysis)
	Water (µg/L)	Soil (mg/kg)		
<i>Volatile Organic Compounds (VOCs)</i>			8260B	GC/MS ^c
Acetone	5.0	10.0		
Benzene	0.50	5.0		
Bromochloromethane	0.50	5.0		
Bromodichloromethane	0.50	5.0		
Bromoform	0.50	5.0		
Bromomethane	0.50	5.0		
Carbon disulfide	0.50	5.0		
Carbon tetrachloride	0.50	5.0		
Chlorobenzene	0.50	5.0		
Chloroethane	0.50	5.0		
Chloroform	0.50	5.0		
Chloromethane	0.50	5.0		
cis-1,2-Dichloroethene	0.50	5.0		
cis-1,3-Dichloropropene	0.50	5.0		
Cyclohexane	0.50	5.0		
Dibromochloromethane	0.50	5.0		
Dichlorodifluoromethane	0.50	5.0		
Ethylbenzene	0.50	5.0		
Isopropylbenzene	0.50	5.0		
Methyl acetate	0.50	5.0		
Methylcyclohexane	0.50	5.0		
Methylene chloride	0.50	5.0		
Methyl tert-butyl ether (MTBE)	0.50	5.0		
4-Methyl-2-pentanone	5.0	10.0		
Styrene	0.50	5.0		
Toluene	0.50	5.0		
trans-1,2-Dichloroethene	0.50	5.0		
trans-1,3-Dichloropropene	0.50	5.0		
Trichlorofluoromethane	0.50	5.0		
Tetrachloroethene	0.50	5.0		
m,p-Xylene	0.50	5.0		
o-Xylene	0.50	5.0		
Vinyl chloride	0.50	5.0		
1,2-Dibromo-3-chloropropane	0.50	5.0		
1,2-Dichlorobenzene	0.50	5.0		
1,3-Dichlorobenzene	0.50	5.0		

Analyte	Maximum Detection Limit ^a		EPA SW-846 ^b Analytical Method	Instrumentation (Used in Analysis)
	Water (µg/L)	Soil (mg/kg)		
1,4-Dichlorobenzene	0.50	5.0		
1,1-Dichloroethane	0.50	5.0		
1,2-Dibromoethane	0.50	5.0		
1,2-Dichloroethane	0.50	5.0		
1,1-Dichloroethene	0.50	5.0		
1,2-Dichloropropane	0.50	5.0		
1,4-Dioxane	1.0	100.0		
1,1,2,2-Tetrachloroethane	0.50	5.0		
1,2,3-Trichlorobenzene	0.50	5.0		
1,2,4-Trichlorobenzene		5.0		
1,1,1-Trichloroethane	0.50	5.0		
1,1,2-Trichloroethane	0.50	5.0		
Trichloroethylene	0.50	5.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	5.0		
1,2,3-Trichloropropane	na	10.0		
1,2,4-Trimethylbenzene	na	na		
1,3,5-Trimethylbenzene	na	na		
2-Butanone	5.0	10.0		
2-Hexanone	5.0	10.0		
<i>Volatile Organic Compounds (VOCs)</i>			8011	GC ^d
Ethylene dibromide	0.02	na		
1,2-dibromo-3-chloropropane	0.02	na		
<i>Semi-volatile Organic Compounds (SVOCs)</i>			8270D	GC/MS ^c
Benzaldehyde	5.0	170.0		
Phenol	5.0	170.0		
Bis(2-chloroethyl) ether	5.0	170.0		
2-Chlorophenol	5.0	170.0		
2-Methylphenol	5.0	170.0		
2,2'-Oxybis(1-chloropropane)	5.0	170.0		
Acetophenone	5.0	170.0		
4-Methylphenol	5.0	170.0		
N-Nitroso-di-n propylamine	5.0	170.0		
Hexachloroethane	5.0	170.0		
Nitrobenzene	5.0	170.0		
Isophorone	5.0	170.0		
2-Nitrophenol	5.0	170.0		
2,4-Dimethylphenol	5.0	170.0		
Bis(2-chloroethoxy) methane	5.0	170.0		

Analyte	Maximum Detection Limit ^a		EPA SW-846 ^b Analytical Method	Instrumentation (Used in Analysis)
	Water (µg/L)	Soil (mg/kg)		
2,4-Dichlorophenol	5.0	170.0		
Naphthalene	5.0	170.0		
4-Chloroaniline	5.0	170.0		
Hexachlorobutadiene	5.0	170.0		
Caprolactam	5.0	170.0		
4-Chloro-3-methylphenol	5.0	170.0		
2-Methylnaphthalene	5.0	170.0		
Hexachlorocyclopentadiene	5.0	170.0		
2,4,6-Trichlorophenol	5.0	170.0		
2,4,5-Trichlorophenol	5.0	170.0		
1,1'-Biphenyl	5.0	170.0		
2-Chloronaphthalene	5.0	170.0		
2-Nitroaniline	10.0	330.0		
Dimethylphthalate	5.0	170.0		
2,6-Dinitrotoluene	5.0	170.0		
Acenaphthylene	5.0	170.0		
3-Nitroaniline	10.0	330.0		
Acenaphthene	5.0	170.0		
2,4-Dinitrophenol	10.0	330.0		
4-Nitrophenol	10.0	330.0		
Dibenzofuran	5.0	170.0		
2,4-Dinitrotoluene	5.0	170.0		
Diethyl phthalate	5.0	170.0		
Fluorene	5.0	170.0		
4-Chlorophenyl-phenyl ether	5.0	170.0		
4-Nitroaniline	10.0	330.0		
4,6-Dinitro-2-methylphenol	10.0	330.0		
N-Nitrosodiphenylamine	5.0	170.0		
1,2,4,5-Tetrachlorobenzene	5.0	170.0		
4-Bromophenyl-phenylether	5.0	170.0		
Hexachlorobenzene	5.0	170.0		
Atrazine	5.0	170.0		
Pentachlorophenol	5.0	330.0		
Phenanthrene	5.0	170.0		
Anthracene	5.0	170.0		
Carbazole	5.0	170.0		
Di-n-butyl phthalate	5.0	170.0		
Fluoranthene	5.0	170.0		
Pyrene	5.0	170.0		
Butyl benzyl phthalate	5.0	170.0		
3,3'-dichlorobenzidine	5.0	170.0		
Benzo(a)anthracene	5.0	170.0		

Analyte	Maximum Detection Limit ^a		EPA SW-846 ^b Analytical Method	Instrumentation (Used in Analysis)
	Water (µg/L)	Soil (mg/kg)		
Chrysene	5.0	170.0		
Bis(2-ethylhexyl) phthalate	5.0	170.0		
Di-n-octyl phthalate	5.0	170.0		
Benzo(b) fluoranthene	5.0	170.0		
Benzo(k) fluoranthene	5.0	170.0		
Benzo(a) pyrene	5.0	170.0		
Indeno(1,2,3,-cd) pyrene	5.0	170.0		
Dibenzo(a,h) anthracene	5.0	170.0		
Benzo(g,h,i)perylene	5.0	170.0		

a. µg/L = micrograms per liter; mg/kg = milligrams per kilogram.

b. U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.

c. GC/MS = Gas chromatography/mass spectrometry.

d. GC = Gas chromatography

TABLE 2-3
Maximum Detection Limits, Analytical Methods and Instrumentation for High Explosives (HE) and Other Compounds Analysis

Analyte	Maximum Detection Limit ^a Soil (mg/kg)	Maximum Detection Limit ^a Water (µg/L)	EPA SW-846 ^b Analytical Method	Instrumentation (Used in Analysis)
1,3,5- Trinitrobenzene	0.25	7.3	8330B	HPLC ^c
1,3-Dinitrobenzene	0.25	4.0	8330B	HPLC ^c
2,4,6-Trinitrotoluene	0.25	6.9	8330B	HPLC ^c
2,4- Dinitrotoluene	0.25	5.7	8330B	HPLC ^c
2,6- Dinitrotoluene	0.25	9.4	8330B	HPLC ^c
2-amino-4,6-Dinitrotoluene	0.26	---	8330B	HPLC ^c
4-amino-2,6 -Dinitrotoluene	0.25	---	8330B	HPLC ^c
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.22	13.0	8330B	HPLC ^c
2-Nitrotoluene	0.25	12.0	8330B	HPLC ^c
Nitrobenzene	0.26	6.4	8330B	HPLC ^c
3- Nitrotoluene	0.25	7.9	8330B	HPLC ^c
4- Nitrotoluene	0.25	8.5	8330B	HPLC ^c
Tetryl	0.25	4.0	8330B	HPLC ^c
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.65	14.0	8330B	HPLC ^c
Nitroglycerine	6.1	3.65	8330B	HPLC ^c
Perchlorate	0.010	0.53	6850	HPLC ^c /EI/MS ^d
White Phosphorous	0.43	0.008	7580	GC ^e
Dioxins and Furans	0.50	0.005	8280B, 8290A	HRGC/MS ^f or HRGC/HRMS ^g

a. µg/L = micrograms per liter; mg/kg = milligrams per kilogram.

b. U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.

c. HPLC = High Performance Liquid Chromatography

d. EI/MS = Electrospray ionization/mass spectrometry

e. GC = Gas chromatography

f. HRGC/MS = High resolution gas chromatography/mass spectrometry

g. HRGC/HRMS = High resolution gas chromatography/high resolution mass spectrometry

**TABLE 2-4
Federal Safe Drinking Water Maximum Contaminant Levels**

Analyte	MCL (mg/L)
Metals	
Antimony	0.06
Arsenic	0.010
Barium	2.0
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Copper	1.3
Lead	0.015
Mercury	0.002
Selenium	0.05
Silver	0.1 (Secondary Standard)
Thallium	0.002
Zinc	5 (Secondary Standard)
VOCs and SVOCs	
Benzene	0.005
Bis(2-ethylhexyl) phthalate	0.006
Chlorobenzene	0.1
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethene	0.007
Trans-1,2-Dichloroethene	0.1
1,2-Dichloropropane	0.5
Ethylbenzene	0.7
Ethylene Dibromide	0.00005
Fluorene	4
Methylene chloride	0.005
Pentachlorophenol	0.001
Benzo(a)pyrene	0.0002
Styrene	0.1
Tetrachloroethene	0.005
Toluene	1
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10
Dioxins (2,3,7,8 - TCDD)	0.00000003

**Table 2-5
Summary of Background Concentrations for Metals in Soils¹**

Constituent of Concern	Range of Detections (mg/kg^a)	Mean^b (mg/kg)	Median (mg/kg)	95th Percentile UTL^c (mg/kg)
Antimony (surface and subsurface)	0.05-44.9	2.1	<6.0	3.9
Arsenic (surface)	0.015-9.7	2.0	2.5	5.6
Arsenic (subsurface)	0.033-17.0	2.0	2.0	4.4
Barium (surface)	0.086-232.0	43.0	59.0	130.0
Barium (subsurface)	0.5-495.0	70.0	71.7	214.0
Beryllium (surface and subsurface)	0.10-1.6	0.3	0.34	0.65
Cadmium (surface)	0.1-7.1	0.3	<0.5	<1.0
Cadmium (subsurface)	0.00265-6.2	0.3	<0.5	0.9
Total chromium (surface)	0.004-240.0	6.0	6.3	17.3
Total chromium (subsurface)	0.0056-58.4	5.3	5.7	12.8
Chromium VI (surface and subsurface)	0.020-<2.5	<0.1	<0.1	<2.5
Cobalt (surface)	0.50-7.8	2.8	2.95	5.2
Cobalt (subsurface)	0.50-8.8	3.0	3.0	5.2
Copper (surface)	0.5-44.0	6.0	5.9	15.4
Copper (subsurface)	1.0-84.5	6.4	6.3	18.2
Lead (surface)	0.005-104.0	7.0	7.8	21.4
Lead (subsurface)	0.75-103.0	5.0	4.9	11.8
Mercury (surface)	0.01-0.68	0.06	<0.1	0.25
Mercury (subsurface)	0.0001-0.68	0.04	<0.1	<0.1
Nickel (surface)	0.5-70.2	5.8	6.0	11.5

Constituent of Concern	Range of Detections (mg/kg ^a)	Mean ^b (mg/kg)	Median (mg/kg)	95 th Percentile UTL ^c (mg/kg)
and subsurface)				
Selenium (surface and subsurface)	0.037-17.2	0.3	<1.0	<1.0
Silver (surface)	0.0015-4.0	0.4	<1.0	<1.0
Silver (subsurface)	0.00159-8.7	0.4	<1.0	<1.0
Thallium (surface and subsurface)	0.0011-7.1	0.3	<0.5	<1.1
Tin (surface and subsurface)	1.0-<122.0	<51.5	<51.5	<10
Total uranium (surface)	0.005-4.66	1.0	2.2	3.42
Total uranium (subsurface)	0.34-2.6	1.0	1.25	2.3
Vanadium (surface)	0.50-31.5	12.3	12.1	20.4
Vanadium (subsurface)	0.50-50.9	13.0	13.80	21.5
Zinc (surface and subsurface)	0.50-230.0	24	22.75	62
Zirconium (surface and subsurface)	2.7-10.8	5.3	5.35	9.2

^a mg/kg = milligram per kilogram

^b Geometric means are provided for those constituents which were log normally or nonparametrically distributed, while arithmetic means are provided for those constituents which were normally distributed.

^c The 95th Upper Tolerance Limit (UTL) is provided for those constituents that have a normal or lognormal distributions, while the 95th percentile is provided for those constituents that have a nonparametric distribution.

¹ IT Corp, 1996. Background Concentrations of Constituents Of Concern To The Sandia National Laboratories/New Mexico Environmental Restoration Project and The Kirtland Air Force Base Installation Restoration Program dated March 1996.

TABLE 2-6
Soil Screening Levels and Regional Screening Levels for Contaminants in Soil

Analyte	EPA Regional RSL (mg/kg)	NMED Residential SSL (mg/kg)
Metals		
Antimony	410	31.3
Arsenic	1.6	3.9
Barium	190,000	15,600
Beryllium	2,000	156
Cadmium	810	77.9
Chromium	1,400	219
Copper	41,000	31,300
Lead	800	400
Mercury	100	7.71
Nickel	20,000	15,600
Selenium	5,100	391
Silver	5,100	391
Thallium	66	5.16
Tin	610,000	Not Established
Vanadium	5,200	391
Zinc	310,000	23,500
High Explosives		
1,3,5- Trinitrobenzene	27,000	Not Established
1,3-Dinitrobenzene	62	Not Established
2,4,6-Trinitrotoluene	79	35.9
2,4- Dinitrotoluene	1,200	15.7
2,6- Dinitrotoluene	620	61.2
2-amino-4,6- Dinitrotoluene	2,000	Not Established
4-amino-2,6 - Dinitrotoluene	1,900	Not Established
Octahydro-1,3,5,7-tetrnitro- 1,3,5,7-tetrazocine (HMX)	49,000	30,600
2-Nitrotoluene	12,000	29.1
Nitrobenzene	280	49.4
3- Nitrotoluene	13	15,600
4- Nitrotoluene	110	244
Tetryl	2,500	244
Hexahydro-1,3,5-trinitro-1,3,5- triazine (RDX)	24	44.2
Nitroglycerine	62	6.11
Other Analytes		
Perchlorate	720	54.8
White Phosphorous	20	Not Established
Dioxins and Furans	0.000018	Not Established

TABLE 2-7
Sample Containers, Preservation Techniques, and Holding Times for Soil Samples

Analyte	Container	Preservative	Holding Time
Metals ^a (except mercury and hexavalent chromium)	4 oz glass jar with Teflon cap	Cool to 4°C	180 days
Mercury	4 oz glass jar with Teflon cap	Cool to 4°C	28 days
Hexavalent chromium	4 oz glass jar with Teflon cap	Cool to 4°C	28 days (plus 4 days after extraction)
Volatile Organic Compounds (VOCs) ^b	4 oz glass jar with Teflon cap	Cool to 4°C	14 days
Semi-volatile Organic Compounds (SVOCs) ^b	4 oz glass jar with Teflon cap	Cool to 4°C	Samples extracted within 14 days and extracts analyzed within 40 days following extraction
High Explosives ^b	4 oz glass jar with Teflon cap	Cool to 4°C	Samples extracted within 14 days and extracts analyzed within 40 days following extraction
Perchlorate ^b	4 oz amber glass bottles	Cool to 4°C	Extract and analyze solids within 28 days of sample acquisition
White Phosphorous	4 oz glass jar with Teflon cap	Cool to 4°C	Indefinite (if preserved at or below 4°C, kept in the dark, and tightly sealed)
Dioxins/Furans	250 mL wide mouth amber glass jar with Teflon lid	Cool to 4°C	30 days

a. Holding time information from U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

b. Volatile and semivolatile organic compounds, metals, and high explosives are listed by respective test method numbers in U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

TABLE 2-8
Sample Containers, Preservation Techniques, and Holding Times for Liquid Samples

Analyte	Container	Preservative	Holding Time
Metals ^a (except mercury and hexavalent chromium)	1 liter (L) Polyethylene bottle with polyethylene lined cap	HNO ₃ ^c to pH<2 and cool to 4°C	180 days
Mercury	400 mL Polyethylene or Glass bottle	HNO ₃ to pH<2	28 days
Hexavalent chromium	125 mL Glass jar with Teflon lined cap	Cool to 4°C	24 hours
Volatile Organic Compounds (VOCs) ^b	3x40 mL Glass vials with Teflon-lined septum caps	HCl ^d Cool to 4°C	14 days
Semi-volatile Organic Compounds (SVOCs) ^b	4 x 1L amber glass with Teflon-lined lid	Cool to 4°C	Samples extracted within 7 days and extracts analyzed within 40 days following extraction
High Explosives ^b	4 x 1L amber glass	Cool to 4°C	Samples extracted within 7 days and extracts analyzed within 40 days following extraction

a. Holding time information from U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

b. Volatile and semivolatile organic compounds, metals, and high explosives are listed by respective test method numbers in U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

c. HNO₃ = Nitric Acid

d. HCl = Hydrochloric Acid

TABLE 2-9
Summary of Field Quality Control Samples

Quality Control Sample Type	Sample Matrix	Applicable Analysis	Frequency	Purpose
Trip blank	Water/Soil	VOCs ^a	One per day	Document any contamination attributable to shipping and field handling procedures
Field blank	Soil/Water	VOCs	One per day	Document any contamination attributable To field conditions
Field Duplicate	Soil/Water	VOCs, SVOCs ^b , metals, HE ^c , Dioxins/Furans White Phosphorus Perchlorate	Minimum of one per 20 environmental samples per media type	Document precision of the sampling/analysis process
Equipment blank	Soil/Water	VOCs, SVOCs ^b , metals, HE ^c , Dioxins/Furans White Phosphorus Perchlorate	One sample per day per media type	Document whether decontamination of sampling equipment was adequate

a VOCs = volatile organic compounds.

b SVOCs = semivolatile organic compounds.

c. HE = High Explosives

TABLE 2-10
Summary of Laboratory Quality Control Procedures by Analytical Method

Parameter	EPA SW-846 Analytical Method	Quality Control Check	Frequency
Metals ^b except mercury	6010C	Instrument calibration	Daily, or each setup
		Initial/continuing calibration	After instrument calibration, 10% or every 2 hours
		Initial/continuing calibration blank	Every calibration, 10% or 2 hours
		Preparation blank	Each batch of digested samples
		Interference check sample (ICS)	Each run or twice per 8-hr shift
		Duplicate sample analysis	Once per field batch per matrix
Mercury	7470A, 7471B	Procedural Blank	Once per batch of up to 20 samples
		Matrix spike (MS)/laboratory control samples (LCS)	Once per batch of up to 20 samples
		Duplicate sample analysis	Once per field batch per matrix
		Mid-level standard	Include after each group of 10 samples
Volatile Organic Compounds (VOCs) ^b	8260B	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours of analysis time
		Initial calibration: instrument sensitivity and linearity of response	Five concentration levels; after each instrument performance, check prior to sample analysis
		Continuing calibration	Every 12 hours of analysis time
		Internal standards	All calibration

Parameter	EPA SW-846s Analytical Method	Quality Control Check	Frequency
		Method blank	standards, samples, and blanks Every 12 hours of analysis time
		System monitoring compounds	Every method blank, sample, matrix spike, matrix spike duplicate; matrix specific, per method limits
Semi-volatile Organic Compounds (SVOCs) ^b	8270D	Instrument performance: mass calibration/ion abundance pattern Initial calibration: instrument sensitivity and linearity of response Continuing calibration Internal standards Method blank Surrogate compounds	Every 12 hours of analysis time Five concentration levels; after each instrument performance, check prior to sample analysis Every 12 hours of analysis time All calibration standards, samples, and blanks Each group of samples of similar matrix and concentration level (soils) Each sample and blank
High Explosives ^b	8330B	System performance Initial calibration Daily calibration	Every 12 hours of analysis time Daily At beginning of the day, singly at the

Parameter	EPA SW-846b Analytical Method	Quality Control Check	Frequency
		Mid-level standard	midpoint of the run, and singly after last sample of day (assuming sample group of 10 or less) Include after each group of 10 samples
		Instrument recalibration	When performance changes and acceptance criteria cannot be achieved
		Blanks	Prior to preparation of stock solutions
		Method blanks	One for each group of up to 20 samples
		Reference samples	Once per batch
		Matrix spike (MS)/laboratory control samples (LCS)	Once per batch of up to 20 samples
		Surrogate recoveries	After analysis of 15-20 field samples
Perchlorate ^b	6860	System performance	Every 12 hours of analysis time
		Initial calibration	Daily or each setup
		Initial/continuing calibration	After every tenth field sample
		Final calibration	At the end of all analyses
		Method blanks	One for each group of up to 20 samples
		Reference samples	Once per batch
		Matrix spike (MS)/laboratory control samples (LCS)	Once per batch of up to 20 samples

Parameter	EPA SW-846 Analytical Method	Quality Control Check	Frequency
		Reagent blank	One for each group of up to 20 samples
		Instrument recalibration	When performance changes and acceptance criteria cannot be achieved
White Phosphorous ^b	7580	Initial calibration	Every 12 hours of analysis time
		Daily calibration	Daily
		Mid-level standard	After every tenth sample
		Matrix spike (MS)/laboratory control samples (LCS)	Once per batch of up to 20 samples
		Instrument recalibration	When performance changes and acceptance criteria cannot be achieved
Dioxins/Furans ^b	8280B, 8290A	System performance	Every 12 hours of analysis time
		Initial calibration	Daily
		Daily calibration	At beginning of the day, singly at the midpoint of the run, and singly after last sample of day (assuming sample group of 10 or less)
		Mid-level standard	Include after each group of 10 samples
		Instrument recalibration	When performance changes and acceptance criteria cannot be achieved
		Blanks	Prior to preparation of stock solutions

Parameter	EPA SW-846 Analytical Method	Quality Control Check	Frequency
		Method blanks	One for each group of up to 20 samples
		Reference samples	Once per batch
		Matrix spike (MS)/laboratory control samples (LCS)	Once per batch of up to 20 samples

a. Quality control information from U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

b. Volatile and semivolatile organic compounds, metals, high explosive, perchlorates, white phosphorous and dioxins and furans are listed by respective test method numbers in U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

3. MANAGEMENT OF WASTE FROM CLOSURE ACTIVITIES

Wastes that are expected to be generated during the final closure activities at the OD Unit include: excess soil from sampling; well purge water, drill cuttings, decontamination water; PPE; and excavated soils. To minimize the amount of waste to be generated during closure activities, excess soil cuttings from borings will be replaced in the auger holes. The volume of liquid waste generated during the cleaning of excavation and grading equipment will be minimized by only using the amount of wash water and rinse water necessary to achieve successful decontamination. Solvents will not be used. This approach will help minimize the amount of liquids that cannot be disposed of in the sanitary sewer system.

3.1 Waste Management

Wastes associated with closure activities at the OD Unit will be managed as follows:

- Wastes will be stored in appropriate containers that are compatible with the wastes and are in good condition.
- If analytical results indicate that the waste is hazardous or the Kirtland AFB project manager determines that the waste will be classified as hazardous, Kirtland AFB will manage the waste in accordance with all applicable regulations in 40 CFR §261-268.
- Waste containers will remain under the control of the personnel generating the waste.
- Waste containers will be segregated according to the compatibility and chemical waste type.
- Waste will be stored in containers that remain closed, except when adding or removing wastes.
- Waste containers bearing free liquid will be provided with secondary containment of sufficient volume to prevent spilled liquids from being released onto the ground.
- Waste containers will be managed in such a manner as to prevent ruptures and leaks.
- Waste containers will be labeled appropriately, pending receipt of analytical results. Labels will be filled out appropriately and marked using permanent marker or pen. Label information will include waste source, suspected contaminants, contents, depth (if appropriate), the date which accumulation began, and a contact name.

3.2 Waste Characterization

Characterization of the liquid waste and excavated soil generated during the closure of the OD Unit will be based upon the results of sampling and analysis. Decontamination water will be analyzed for the constituents listed in Tables 2-1, 2-2 and 2-3. PPE will be managed as a hazardous waste and will be managed appropriately.

3.3 Waste Disposal

All wastes from closure activities determined to be hazardous will be managed in accordance with the Hazardous Waste Management Regulations from the time of generation. Hazardous wastes will be shipped off-site for treatment and disposal at a permitted RCRA facility. Wastes characterized as nonhazardous (e.g., decontamination liquids) will be evaluated to determine the appropriate disposal method in accordance with applicable law.

4. REFERENCES

EPA, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

EPA, 1980, "Samplers and Sampling Procedures for Hazardous Waste Streams," EPA-600/2-80-018, U.S. Environmental Protection Agency, Municipal Environmental Research Laboratory, Cincinnati, OH.

IT Corporation, 1996, "Background Concentrations of Constituents of Concern to the Sandia National Laboratories/New Mexico Environmental Restoration Project and the Kirtland Air Force Base Installation Restoration Program," prepared for Sandia National Laboratories/New Mexico Environmental Restoration Department 7585, Albuquerque, NM.

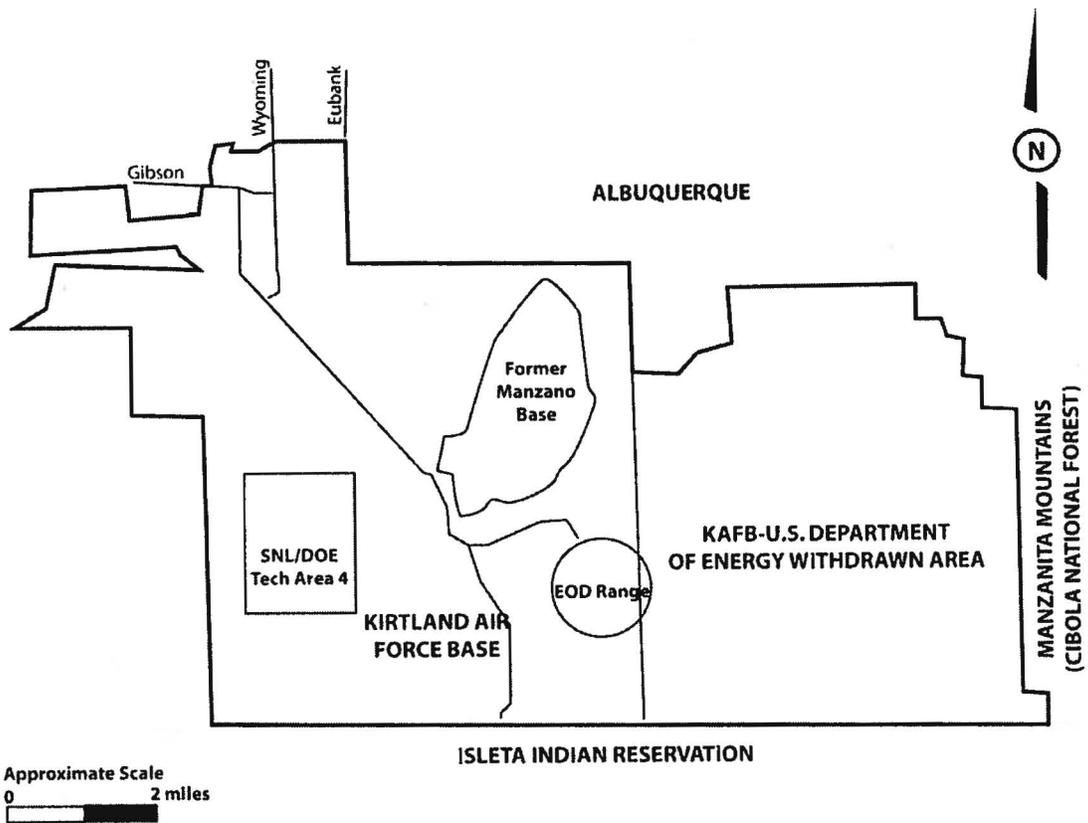


Figure 1-1. Location of EOD Range at Kirtland AFB

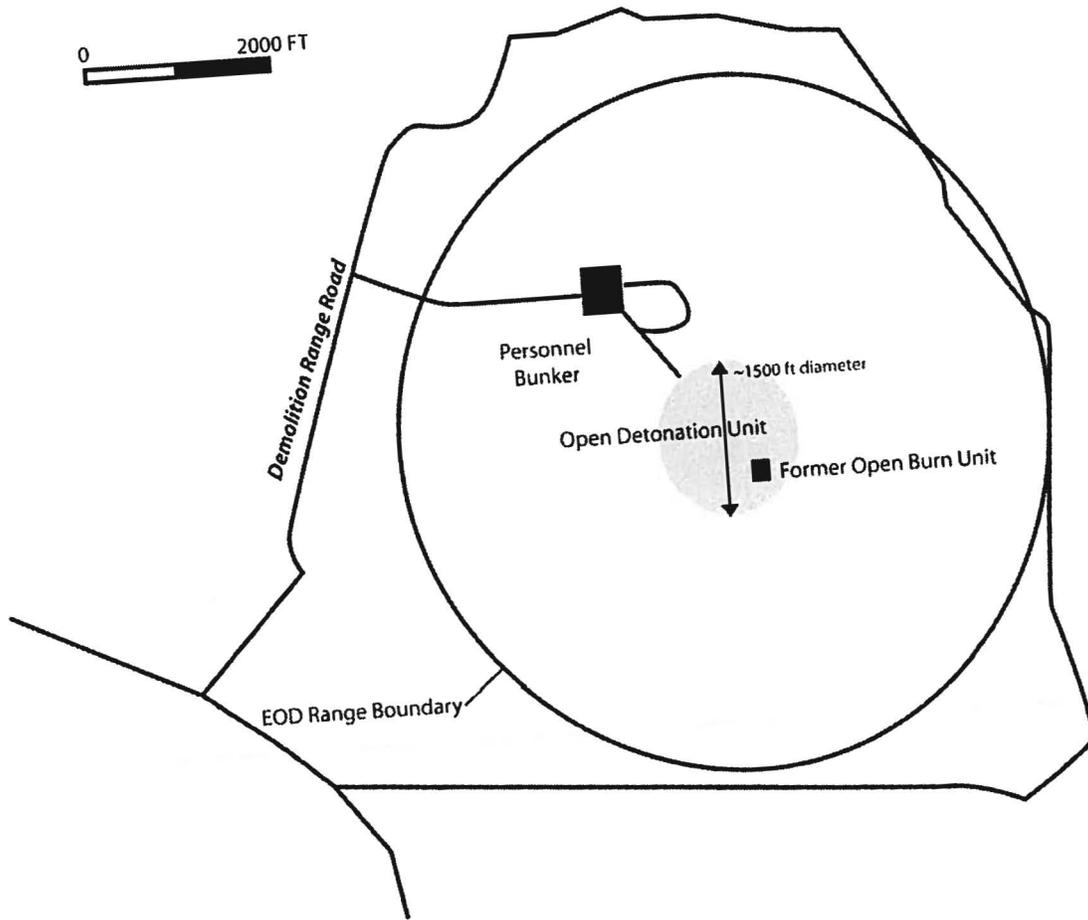
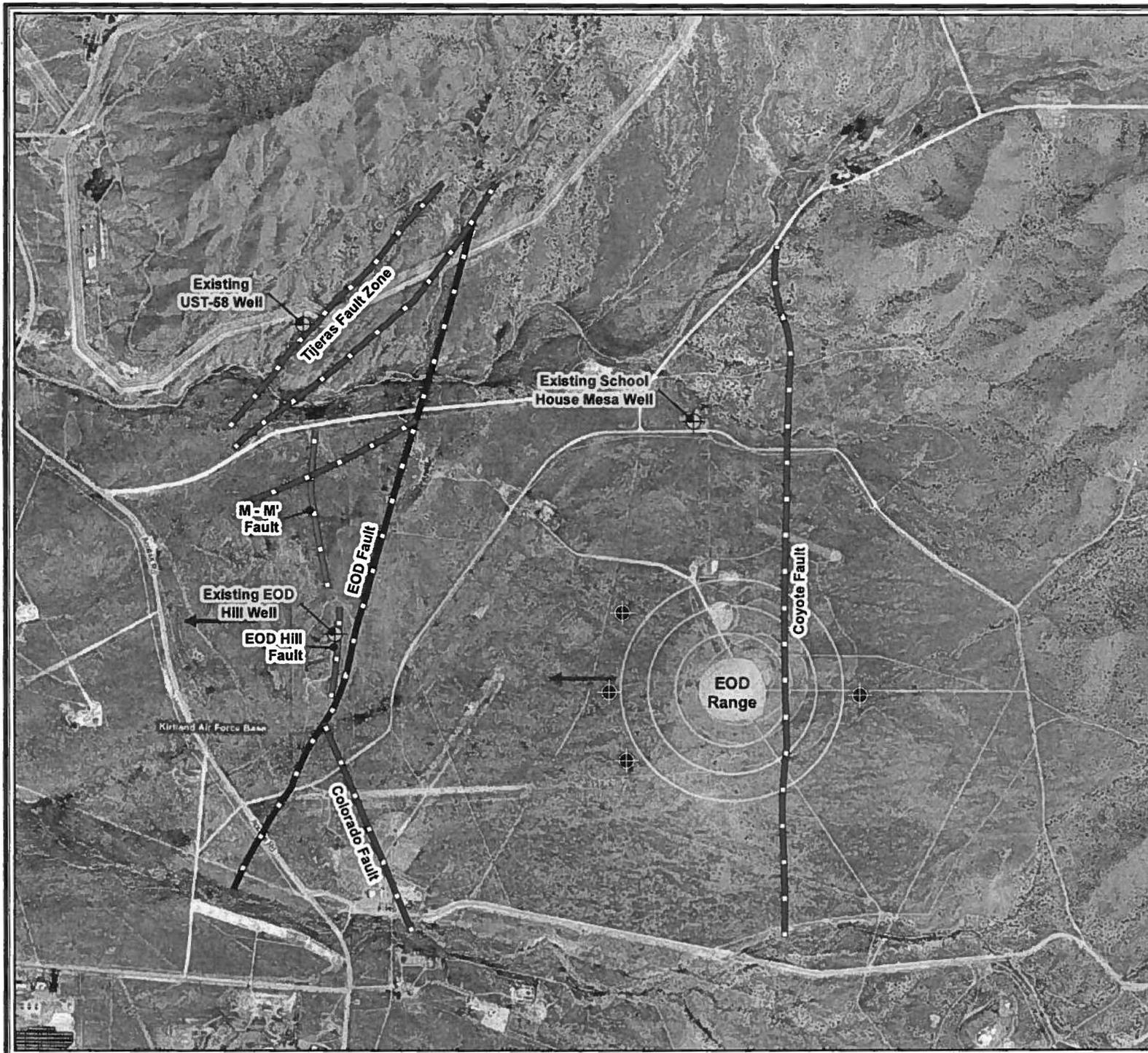


Figure 1-2. Location of Open Burn Unit and Open Detonation Unit at EOD Range

Figure 2-1

Location of Proposed Groundwater Monitoring Wells at the EOD Range



- Proposed Monitoring Well Location
- ⊕ Existing Monitoring Well Location
- ➔ Assumed Groundwater Flow Direction
- Fault
Surface extension of faults shown taken from New Mexico Bureau of Geology and Mineral Resources (Revised 2002).
- Fault
Surface extension of faults shown taken from SNL Sand Report (2003).
- Fault
Fault referred to as "EOD" fault in SNL Sand Report (2003).

