

HAFB 2003



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 49TH FIGHTER WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

18 APR 2003

MEMORANDUM FOR NEW MEXICO ENVIRONMENT DEPARTMENT

Attn: Mr. James Bearzi
Hazardous Waste Bureau
2905 Rodeo Park Drive, East Bldg 1
Santa Fe NM 87505-6303



FROM: 49 CES/CD
550 Tabosa Ave
Holloman AFB, NM 88330-8458

SUBJECT: Submittal of Fourth Quarter 2001 Monitoring Report, 20,000-Pound Open Detonation Unit (ODU) and Quality Assurance/Quality Control Report

1. Attached is the Fourth Quarter 2001 20,000-pound ODU Monitoring Report and the Fourth Quarter 2001 Monitoring Report Quality Assurance/Quality Control (Atchs 1 and 2, respectively).
2. The monitoring reports contain the results of soil sampling following the detonation events of 20 Oct 01. These results were compared to decision criteria specified in Atch J of the Operating Permit. Results from these analyses show that the ODU operations are effective.
3. If you have any questions or require additional information, please contact Ms. Debbie Hartell or Mr. Darwin St. John at (505) 572-3931.

Howard E. Moffitt
HOWARD E. MOFFITT
Deputy Base Civil Engineer

Attachments:

1. Fourth Quarter 2001 Monitoring Report 20,000-Pound Open Detonation Unit
2. Fourth Quarter 2001 Monitoring Report Quality Assurance/Quality Control Results

cc w/Atchs:

Mr. Cornelius Amindyas
New Mexico Environment Department
Hazardous waste Bureau
4131 Montgomery Blvd NE
Albuquerque, New Mexico 87109

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Langley Air Force Base,
Virginia*

Final

*Fourth Quarter 2001 Monitoring Report
20,000-Pound Open Detonation Unit*

*Holloman Air Force Base,
New Mexico*

April 2003



*49 CES/CEV
Holloman Air Force Base,
New Mexico*

**FINAL
FOURTH QUARTER 2001 MONITORING REPORT
20,000-POUND OPEN DETONATION UNIT**

Prepared for:

**Holloman Air Force Base
49 CES/CEV
550 Tabosa Avenue
Holloman AFB, New Mexico 88330**

Prepared by:

**Foster Wheeler Environmental Corporation
143 Union Boulevard, Suite 1010
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Under Contract No. DACW45-94-D-0003

Delivery Order 37, Work Authorization Directive 7

**U.S. Army Corps of Engineers
Omaha District
Omaha, Nebraska**

April 2003

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LIST OF ACRONYMS

AFB	Air Force Base
DQO	data quality objective
EOD	explosive ordnance disposal
EPA	United States Environmental Protection Agency
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
mg/kg	milligrams per kilogram
NCP	National Contingency Plan
OD	open detonation
QA	quality assurance
QC	quality control
RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine
USAF	United States Air Force
UTL	upper tolerance limit
Work Plan	Final Work Plan Addendum

1.0 INTRODUCTION

During the fourth quarter of 2001, Holloman Air Force Base (AFB) performed the 14th quarterly sampling event at the 20,000-Pound Open Detonation (OD) Unit in accordance with Attachment J of the operating permit Sampling and Analysis Plan (USAF, 1996). Twelve locations were sampled for metals and explosive compounds and the analytical results were compared to the decision criteria outlined on page 33 of Attachment J of the operating permit. No sample results exceeded the decision criteria, and therefore, no changes to operations at the 20,000-Pound OD Unit are recommended. The following report summarizes the field operations, analytical results, potential risk, and conclusions from the 14th quarterly sampling event.

2.0 FIELD OPERATIONS

The fourth quarter 2001 detonation event occurred on October 18, and sampling was conducted on October 20, 2001. A total of 12 soil samples and one field duplicate were collected from 3 different strata within the boundaries of the 20,000-Pound OD Unit. Field and quality assurance/quality control (QA/QC) samples were obtained following the procedures outlined in the Final Work Plan Addendum for the 20,000-Pound Open Detonation Unit (Work Plan) (Foster Wheeler, 1999). Samples were analyzed for metals and explosive compounds as specified in the Work Plan.

During the field operations, the dimensions of each stratum were measured and recorded, and a grid was developed based on these measurements. Random sampling locations were determined following the guidelines established in the Work Plan. Sample locations are listed in Table 2-1.

Samples were labeled according to the following number sequence: OD-SO-s-x, where

OD = open detonation

SO = soil

s = stratum (A, B, or C)

x = sequential sample number within each stratum (01, 02, 03, 04)

Table 2-1. Fourth Quarter 2001 Sample Locations

Stratum: A Number of Samples: 4 Number of Potential Sampling Locations (n): 16 Scale Factor (n-1): 15			
Sample Number	Random Number	Scaled Random Number	Grid-to-Node Sample
1	0.942	14.1	A14
2	0.888	13.3	A13
3	0.188	2.8	A3
4	0.610	9.1	A9

Stratum: B Number of Samples: 4 Number of Potential Sampling Locations (n): 20 Scale Factor (n-1): 19			
Sample Number	Random Number	Scaled Random Number	Grid-to-Node Sample
1	0.975	18.5	B19
2	0.146	2.8	B3
3	0.397	7.5	B8
4	0.476	9.0	B9

Stratum: C Number of Samples: 4 Number of Potential Sampling Locations (n): 24 Scale Factor (n-1): 23			
Sample Number	Random Number	Scaled Random Number	Grid-to-Node Sample
1	0.250	5.8	C6
2	0.776	17.8	C18
3	0.974	22.4	C22
4	0.592	13.6	C14

The area sampled was based on wind data recorded at the time of the August 10, September 21, September 25, and October 18, 2001 detonations. The assumption was made that any small particles from the detonation events would settle downwind of the detonation location. Figure 2-1 illustrates the strata layout and the sample locations associated with the October 20, 2001 sampling event. The wind data are presented below:

- August 10, 2001 (11:45)—wind direction 300 degrees/wind speed 9 knots
- September 21, 2001 (21:11)—wind direction 190 degrees/wind speed 8 knots
- September 25, 2001 (11:20)—wind direction variable/wind speed 5 knots
- October 18, 2001 (11:43)—wind direction variable/wind speed 3 knots

3.0 ANALYTICAL RESULTS

This section presents an evaluation of the QA/QC data associated with the analytical results for the fourth quarter 2001 monitoring event. Analytical methods for chemical analysis were taken from the latest revision of United States Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste, SW-846, Third Edition and Updates (EPA, 1986).





3.1 QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

The QC data were reviewed to determine usability and achievement of project data quality objectives (DQOs). The review focused on laboratory method blanks, matrix and control sample spikes, surrogate recoveries, and holding times. Overall, QC data associated with this sampling event indicate that project measurement data are reliable and fulfill project DQOs.

The explosives data (EPA SW-846 Methods 8330 and 8332) for this monitoring event are reported to the method detection limit. A "J" qualifier signifying an estimated concentration was assigned to concentrations reported below the sample-specific detection limit and above the method detection limit. Explosive compounds that were not detected are reported with a "U" qualifier accompanying the sample detection limit.



LEGEND

-  Sample Locations
-  Open Detonation Unit
-  Streets and Roads
-  Installation Boundary

20,000-Pound Open Detonation Unit
October 20, 2001 Sampling Event
Holloman Air Force Base, New Mexico

Figure 2-1
Sample Locations



Foster Wheeler Environmental Corporation