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1 Apr 99

U.S. Nuclear Regulatory Commission  
Region II  
61 Forsyth Street, SW  
Suite 23T85  
Atlanta, GA 30303

Gentlemen:

SUBJECT: IMPROPER EXPENDITURE OF DEPLETED URANIUM MUNITIONS

This letter is submitted per 10 CFR 30.50 as an initial report to an incident which occurred on February 19, 1999, concerning depleted uranium (DU) ammunition expended on the Live Impact Area of the Vieques Naval Range, Atlantic Fleet Weapons Training Facility, Naval Station Roosevelt Roads, Puerto Rico.

Headquarters Marine Corps personnel first identified the incident on March 5, 1999 during a review of ordnance expenditure databases. The Naval Radiation Safety Committee verbally reported this incident to the Nuclear Regulatory Commission, Region II, on that same day.

The firing of DU ammunition on Navy or Marine Corps firing ranges is a violation of the Navy's Master Material License No. 45-23645-01NA, and specifically, the Naval Radioactive Material Permit No. 13-00164-L1NP pertaining to depleted uranium. A formal Joint Marine Corps - Navy investigation is in progress and corrective measures will be implemented to prevent future occurrences. Supporting documentation is contained in enclosure (1).

Sincerely,

G.A. HIGGINS  
Commander, MSC, U.S. Navy  
Executive Secretary  
Naval Radiation Safety Committee

Enclosure: (1) Report of Depleted Uranium Recovery Operations

Copy to:  
CMC SD  
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### Report of Depleted Uranium Recovery Operations

On February 19, 1999, during a training exercise on the Live Impact Area of the Vieques Inner Range on the island of Vieques, Puerto Rico, two U.S. Marine Corps Harrier aircraft expended 263 depleted uranium (DU) 25mm rounds. Each 25mm round contains 148 grams of DU in the form of a pencil shaped penetrator. The Live Impact Area (LIA) is located on the eastern tip of the Island of Vieques and covers approximately 2.5 square miles (reference Figure 1). Only a few individuals are authorized access to the area and it is guarded 24 hours per day. Interviews with the Marine pilots isolated the affected area to a small portion of the LIA called the North Convoy (reference Figure 2).

A preliminary investigation into the cause of the incident revealed that two individuals did not follow standard written procedures. Procedures dictate that the individuals issuing and receiving ammunition must check the Notice of Ammunition Reclassification (NAR) database for each type of ammunition prior to the transfer occurring. The NAR specifies that these 25mm DU rounds are "war reserve" and are to be used strictly during combat and are restricted from peacetime or training use. Both individuals failed to refer to the NAR prior to the DU ammunition being issued. A formal Joint Marine Corps - Navy investigation is currently being conducted.

A team of Navy health physicists was dispatched to Vieques between 10 and 19 March 1999, to locate and recover as many DU rounds as possible. Visual searches and radiological surveys indicated that only a limited area of the North Convoy site was actually affected. Penetrators were located approximately 10 to 20 feet apart along three distinct paths radiating in a northern direction between two armored tank targets (reference Figure 3). This pattern corresponded to the direction of fire employed by both Harrier pilots. Buried penetrators were visually located by the presence of a depression, hole, or divot in the soil and confirmed radiologically using a 2" X 2" sodium iodide detector. Penetrators were found as deep as 18 inches in the soil and were easily detected using this method.

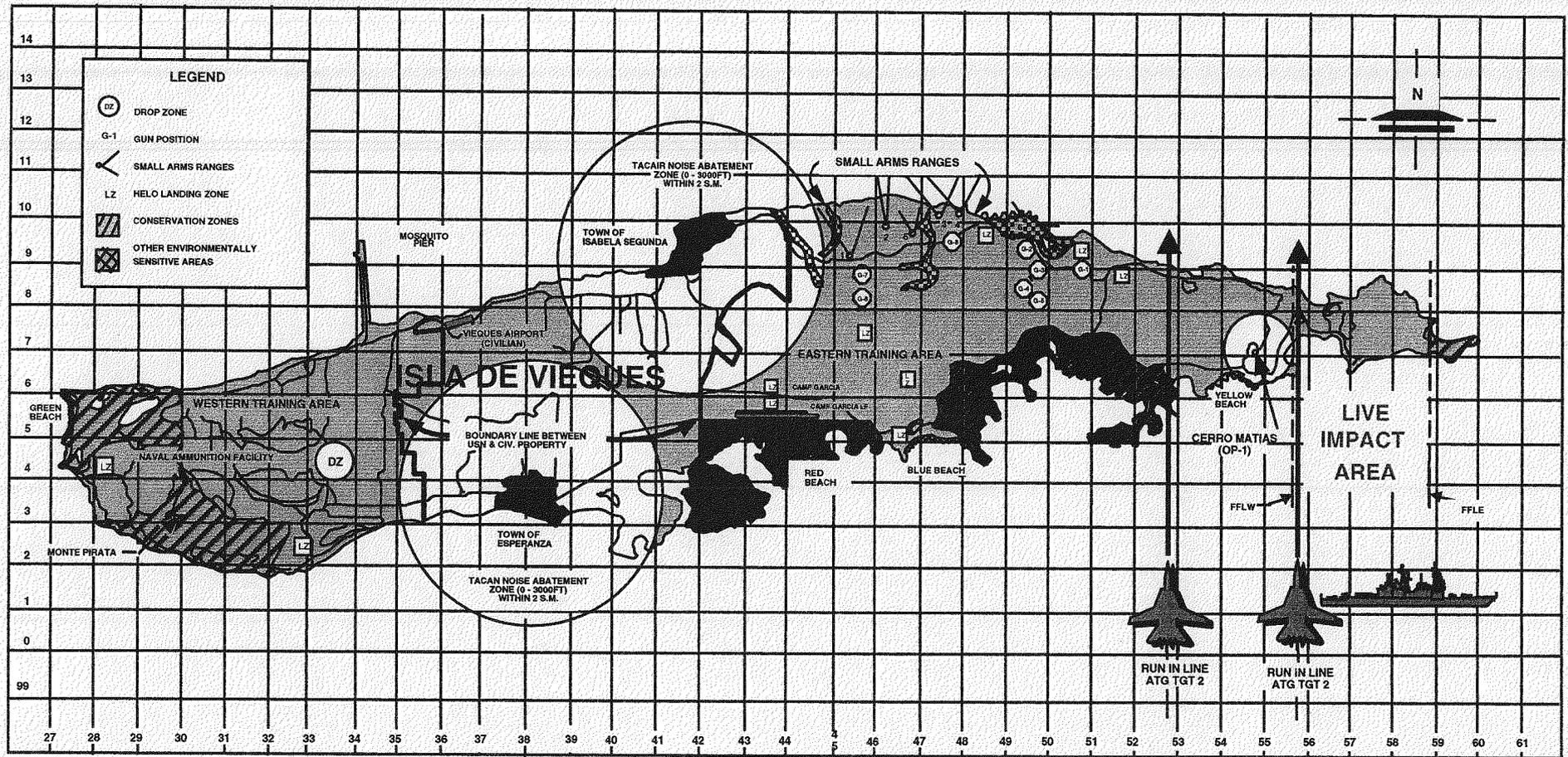
A total of 57 DU penetrators were recovered, most of them completely intact, and located within the shrubbery and grass just north of the North Convoy target area (reference Figure 3). Only a few holes exhibited residual contamination after the penetrator was removed. In each case, part of the penetrator

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had fractured into smaller pieces which were too difficult to recover. The contaminated soil was collected and packaged for appropriate disposal.

A thorough radiological survey of the affected area, out to the perimeter of the vegetation, was conducted using a 2" X 2" sodium iodide detector following the recovery of all penetrators (reference Figure 3). No additional penetrators or residual contamination were noted as a result of the radiological survey. Due to the dense vegetation and the possibility of hidden unexploded conventional ordnance, surveys were limited to the immediate vicinity of the North Convoy target site. Visual and radiological surveys were conducted at several other target sites on the Live Impact Area to confirm that only the North Convoy site was involved. No penetrators or contamination were found at these sites. All recovered penetrators and contaminated soil have been placed in containers and securely stored until proper disposal can be arranged.

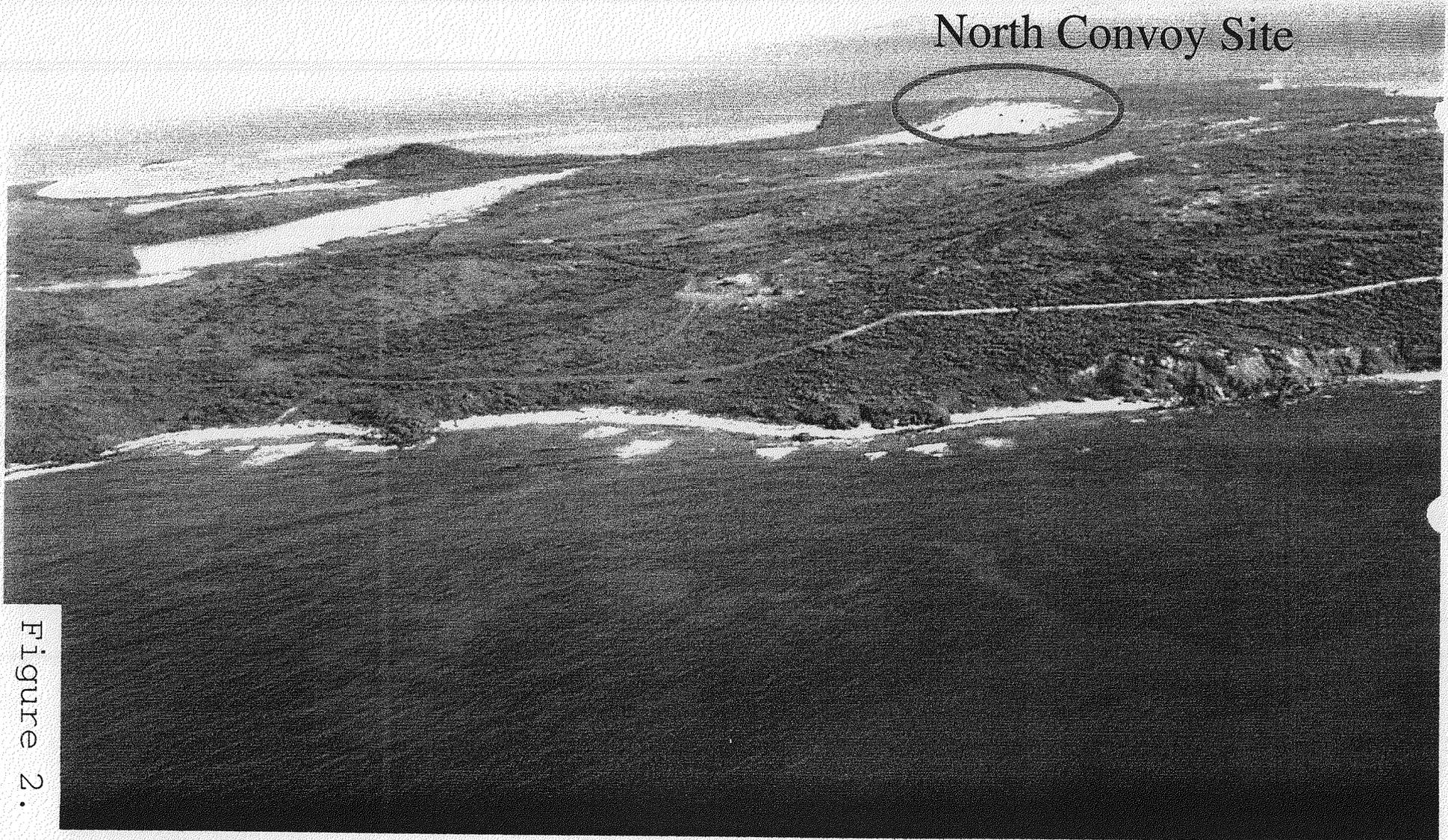
A return to the North Convoy site to continue surveys and remediation efforts is scheduled for May 6-15, 1999. A follow on report will be submitted June 1, 1999, providing additional recovery information following the May 1999 site visit.



VIEQUES ISLAND AND INNER RANGE

Figure 1.

# Vieques Inner Range Live Impact Area



North Convoy Site

Figure 2.

# North Convoy Vieques Inner Range

— Area 100% Surveyed

— Area Searched

— Path of Penetrators Found

3/15/1999

Figure 3.