

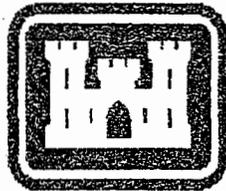
**DRAFT FINAL REPORT**

**DIGITAL GEOPHYSICAL MAPPING - UNEXPLODED ORDNANCE**

at the  
**West Point Elementary School Gymnasium Construction Site**  
West Point, New York

by  
**CHEMRAD Tennessee Corporation**

under contract to  
**U. S. Army Corps of Engineers, Engineering and Support Center, CEHNC**  
Huntsville, Alabama  
contract No. DACA87-00-D-0011 Order No. 003



**1.0 INTRODUCTION**

This report documents the Digital Geophysical Mapping (DGM) of the gymnasium construction site at West Point Elementary School, USMA, West Point, NY. This DGM project was conducted under contract to U. S. Army Engineering and Support Center (CEHNC), Huntsville, AL. Field DGM survey activities began on Wednesday, 06 September 2000 and were completed the following day. This report, as required by the Statement of Work, describes the survey methods and presents the survey findings.

**1.1 SITE DESCRIPTION**

The gymnasium construction site is northeast of USMA Building 705A which is the elementary school building. The construction site is approximately .7 ac in size. The DGM covered 0.974 ac.

## 1.2 BRIEF HISTORY

The U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville (CEHNC) is the Mandatory Center of Expertise (CX) for the Ordnance and Explosive program. The mission is to eliminate or reduce the imminent danger to the public posed by abandoned ordnance and explosives (OE) at current or formerly used defense sites through education, policy, performance and quality assurance. The CEHNC is responsible for OE activities in support of Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP - FUDS), Installation Restoration (IR), Base Realignment and Closure (BRAC), and Service for Others (SFO) programs.

Digital geophysical mapping is a primary method used to locate unexploded ordnance (UXO). Effectiveness is determined by a quality reproducible systemized approach using accurate navigation, clean digital geophysical data without operator induced anomalies, through data analysis and anomaly discrimination, accurate dig sheets, and precise anomaly reacquisition and field marking.

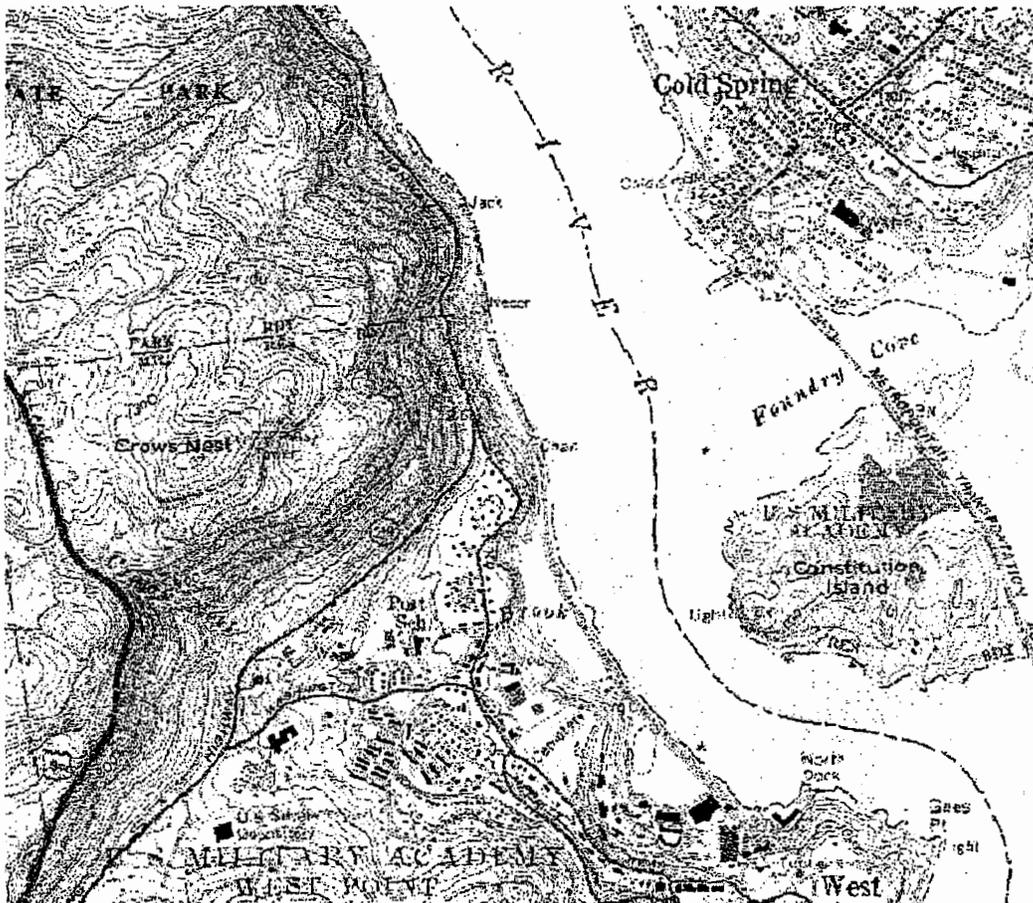
The gymnasium site is located in an area which may have been an impact area for munitions (See Table 1) from two sources – a cannon and projectile foundry located at Cold Springs, NY and the USMA artillery range (See Figure 1).

**Table 1**  
**UXO Items Encountered at USMA**

2.25 ejection projectile	1
3-inch Absterdam, loaded	1
75mm projectile, loaded	70
75mm projectiles, empty	374
4.5-inch projectile, loaded	1
4.5-inch ejection projectile, empty	2
4.75-inch ejection projectile, empty	3
6-inch solid shot (Civil War cannon ball)	1
6.5-inch projectile, loaded	1
8-inch projectile, loaded	1
8-inch projectile, empty	1
half of 10-inch shell (Civil War cannon ball)	1
half of 15-inch mortar shell (Civil War mortar)	1
M1907 PTTF fuze, expended	17

Source: "Unexploded Ordnance Site Survey Report for Crows Nest", Human Factors Applications, Inc., Contract DACA31-92-D-001, Delivery Order 0032, May 1994.

**Figure 1**  
**Topographic Map of Area**



## 2.0 METHODS

The survey was conducted in local coordinates based on construction stations along the north-south trending sidewalk on the eastern side of the site. Point 0,0 (USRADS 1) was assumed for existing STA 0+00 at the intersection of the existing sidewalk and existing parking lot. Point 0,100 (USRADS 2) was assumed for existing STA 1+00, and Point 0,150 (USRADS 3) was assigned to existing STA 1+50.

CHEMRAD surveyed these grids using the EM61 ½ coil in a litter carry configuration with the USRADS navigation system. The survey was performed with a lane spacing of 3 feet or less to achieve maximum detection for the given sensor.