

**SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. I04FL091400
BOSTWICK BOMB TARGET
4 February 1994**

SITE NAME(S). Bostwick Bomb Target; also referred to as Putnam Bomb Target.

LOCATION. The site is located approximately 2 to 3 miles northeast of the town of Bostwick in Section 22, Township 8 South, Range 26 East, Putnam County, Florida (see Attachment 1).

SITE HISTORY. In the early part of 1940, the United States (U.S.) acquired a total of 640 acres by lease and condemnation for leasehold (actual dates unknown) from eight different owners for a naval bomb target. The Naval Air Advanced Training Command utilized the site for training operations associated with Jacksonville Naval Air Station, located about 25 miles north. Naval improvements at the site consisted of an approximately 40-acre circular clearing (outlined with limestone on the ground surface) in the middle of the site for a target, fencing, and warning signs (see Attachment 2). The site remained active until 1977 when its functions were no longer required by the Navy for training purposes. The Navy determined the site was surplus to their needs and terminated the lease on 15 December 1977. Extensive restorations were required and made on about 70 acres in the center of the site.

SITE VISIT. A site visit was conducted on 8 December 1993 by K. Longworth and S. Newchurch, Ecology and Environment, Inc. (E & E). E & E interviewed Mr. Bostwick, representing UCPC, the site owner. Mr. Bostwick said that UCPC employees had told him that the Navy cleared the target of practice ordnance and related debris sometime in early 1978 and that the target was being used by the U.S. Military until sometime in 1977. Mr. Bostwick indicated that an unspecified number of fires resulted from near misses at the target prior to the site restoration activities. Mr. Bostwick then showed E & E one 1-foot-long "practice bomb" that was previously found on site.

During the site visit, it was observed that the site was wooded, and that the property is currently being used to grow and harvest pine trees. It appeared that younger pine trees were growing in the former target area. No practice bombs or other metal objects were observed during E & E's site visit; however, no attempt to survey the site for ordnance was made because of safety concerns. The current site conditions are shown on Attachment 3.

E & E also obtained information from Southern Division Naval Facility Engineering Command-Real Estate Division regarding an ordnance inspection by B. Hall and others from the Weapons Department of U.S. Naval Air Station, Jacksonville, Florida. Mr. Hall conducted the visual ordnance inspection of the Bostwick Bomb Target site on 9 May 1977. Several types of "dud" or expended ordnance were observed on site. A copy of a letter detailing Mr. Hall's observations is attached (Attachment 4). Mr. Hall indicated that ordnance removal activities were subsequently conducted; however, documentation regarding any restoration activities at the former bomb target has not been acquired.

CATEGORY OF HAZARD. Ordnance and Explosive Waste (OEW).

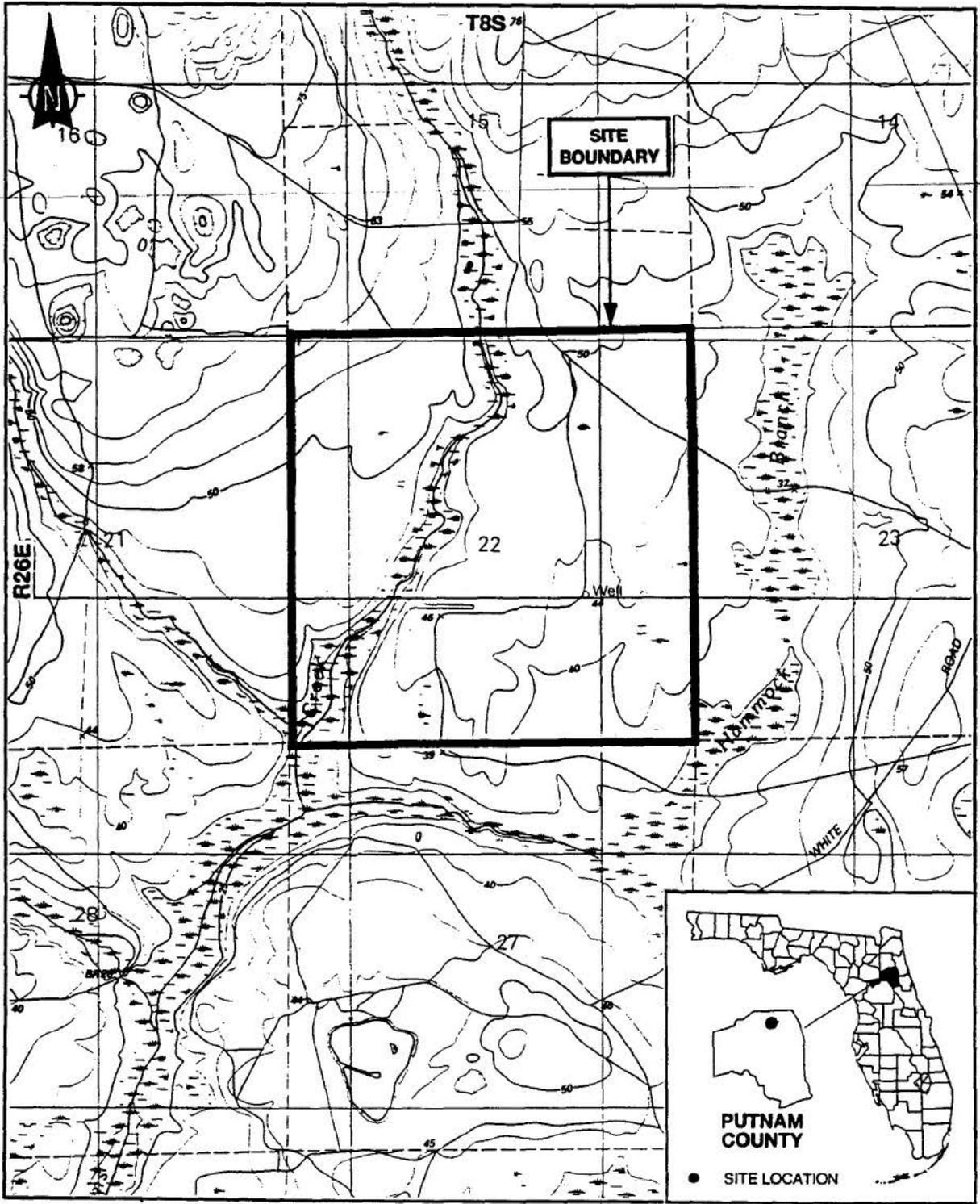
PROJECT DESCRIPTION. One potential project exists at this site: to locate and remove bombs and/or practice bombs. Even though ordnance reportedly has been removed from the

Site Survey Summary
Bostwick Bomb Target
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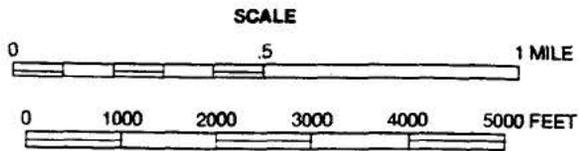
site, it is possible that ordnance is still present, particularly in the marshy wooded area surrounding Simms Creek west of the former target. The bombs also may be hazards even if they are nonexplosive because they can become projectiles if they come in contact with the high-speed saws that are used during logging operations.

AVAILABLE STUDIES AND REPORTS. According to naval and UCPC sources, an ordnance cleanup was performed at this site in the late 1970s; however, actual cleanup documentation is unavailable. A 1969 aerial photograph and a 1965 site plan map show the bomb target layout.

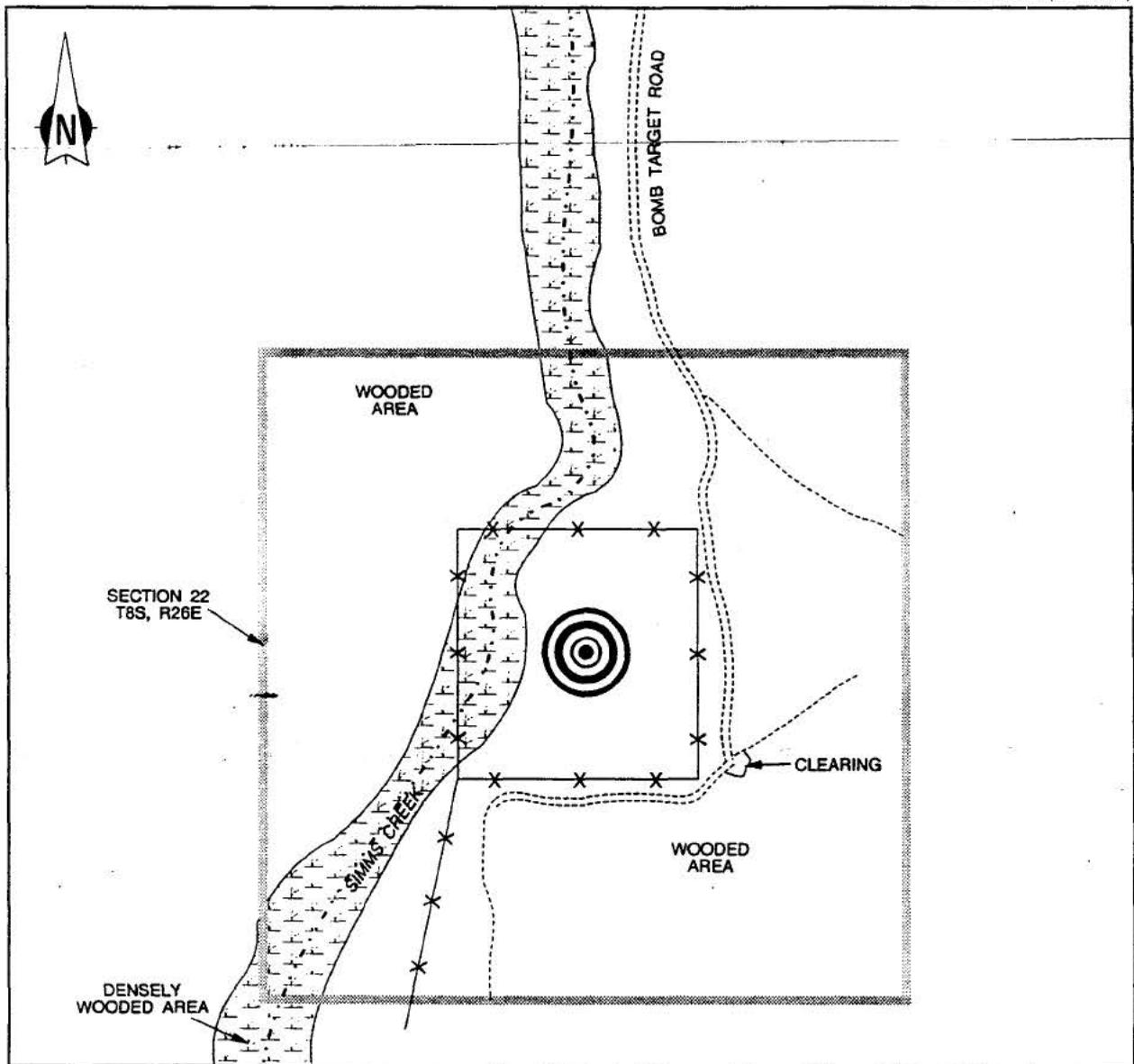
PA POC. Ivan Acosta (904) 232-1693.



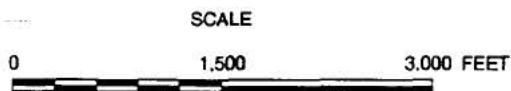
SOURCE: U.S.G.S. 7.5 Minute Series (Topographic-Bathymetric) Quadrangle: Bostwick, Florida 1991.



Attachment 1
LOCATION MAP — BOSTWICK BOMB TARGET, PUTNAM COUNTY, FLORIDA



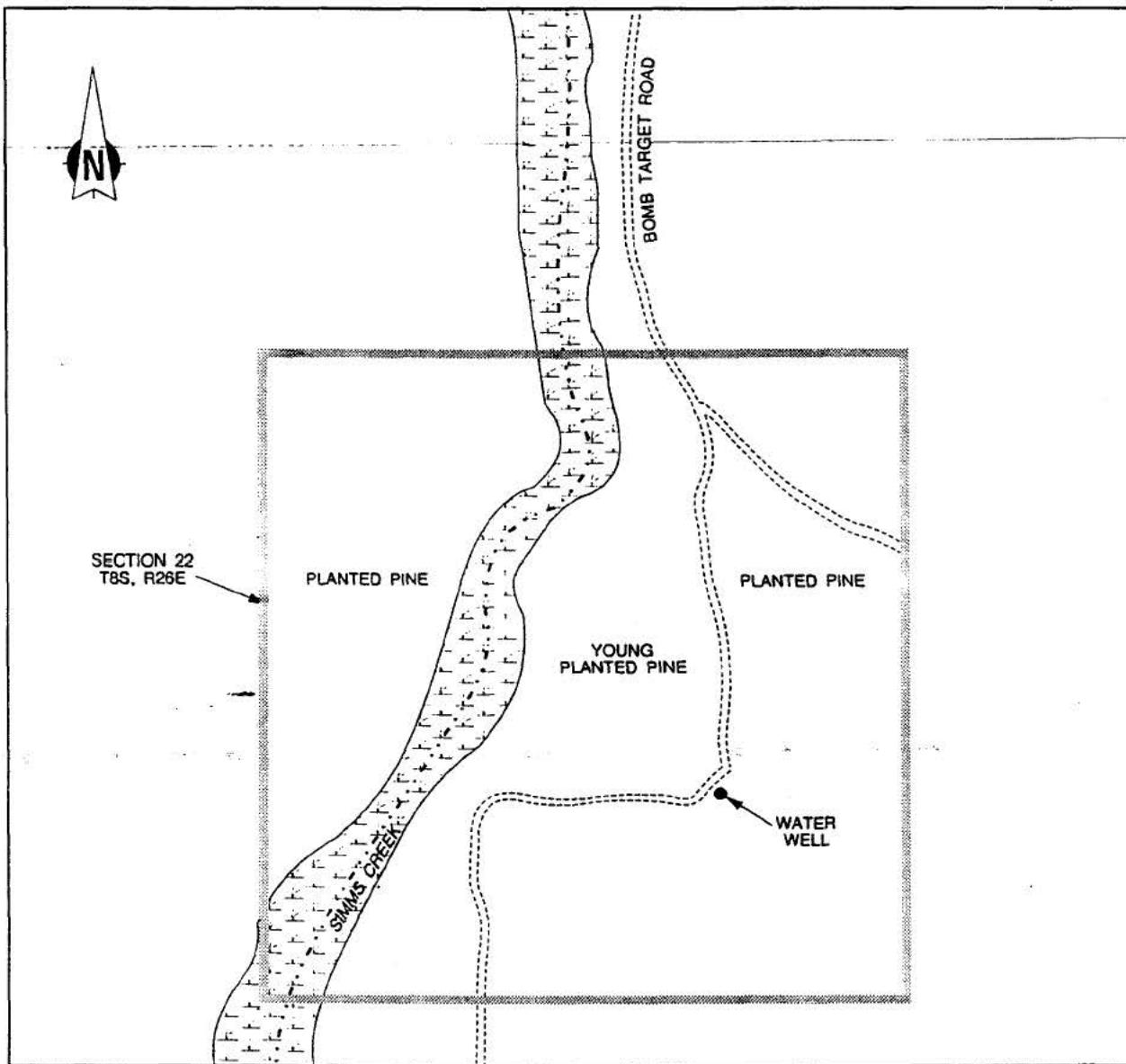
SOURCE: Union Camp Paper Corporation 1965; Ecology and Environment, Inc., 1994.



KEY:

- Unpaved Road
- Jeep Trail
- Stream

-  Marshy Wooded Area
-  Fence
-  Site Boundary



SOURCE: Ecology and Environment, Inc., 1994.

SCALE

0 1,500 3,000 FEET

KEY:

-  Site Boundary
-  Unpaved Road
-  Stream
-  Marshy Wooded Area

2:00

505

75: Rodgers
CLR Unger (AIRZANT)
690-7481

WEAPONS DEPARTMENT
U. S. NAVAL AIR STATION
JACKSONVILLE, FLORIDA 32212

Code 500
10 May 1977

From: Weapons Officer
To: Commanding Officer
Via: Executive Officer

Subj: Visual Inspection of Putnam Bombing Range Target Area conducted
9 May 1977

1. On 9 May 1977, I conducted a visual inspection of Putnam Bombing Range in the company of (Mr. Bobby HALL), WG-6502-9, Munitions Inspector, and LCDR L. S. VENTERS, JR., USN, Target Division Officer, NAS, Jacksonville, Florida.

2. The following types of "dud" or expended ordnance were observed to be present in part, as well as complete rounds. Not all of the items found could be certified as "inert" by visual inspection.

2.75 Rocket Heads

2.75 Rocket Motors

MK-87 Water Sand Fill - 500 LB. Shapes

2.25 Rockets SCAR

MK-76 and MK-106 Practice Bombs (one (1) MK-106 Practice Bomb appeared to have been dropped intact with cotter key safety pin still installed)

MK-23 Practice Bomb

MK-89 Bomb Practice - 56 LB. Size Low Drag Sub-Caliber

MK-82 Low Drag Bomb - 500 LB. - some blue paint showing

LAU-69 Rocket Pods

30 MM Projectiles

MK-15 - 100 LB. Water Sand Fill

MK-81 Bombs with some blue paint visible - 250 LB. Low Drag

LAU-68 Rocket Pods; 7 Round 2.75 Rockets

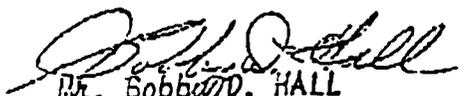
MK-5-3 Minature Bomb Practice - MK-5 MOC 3 LBS

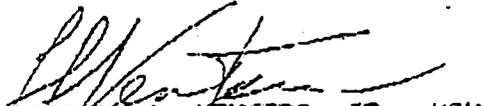
Code 500
10 May 1977

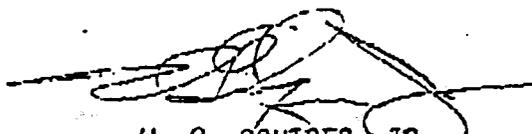
Subj: Visual Inspection of Putnam Bombing Range Target Area conducted
9 May 1977

3. Several "craters" were observed which were approximately 6-to-8 feet in diameter, had a depth of 18 inches to 2 feet deep with almost verticle side walls. It is beyond the writer's competence to assess beyond any doubt the causative agent for these craters.

Very respectfully,


R. Bobby D. HALL
WG-9 Munitions Inspector


LCDR L. S. VENTERS, JR., USN
Target Division Officer


W. G. SOUTRES, JR.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FORMERLY USED DEFENSE SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

Bostwick Bomb Target, FL
(Putnam Bomb Target, FL)

Site No. I04FL091400

FINDINGS OF FACT

1. In the early part of World War II, the United States acquired a total of 640 acres by lease and condemnation for leasehold (actual dates unknown) from eight different owners for a Naval bomb target. The site was located in Section 22, Township 8 South, Range 26 East, about two miles northwest of the town of Bostwick in Putnam County, Florida. The site was developed and sequentially known as the Bostwick Bomb Target and the Putnam Bomb Target.
2. The Naval Air Advanced Training Command utilized the site for training operations associated with the Jacksonville Naval Air Station located about 25 miles to the north. Naval improvements at the site consisted of clearing about 40 acres in the middle of the site for a target in the shape of a circle (outlined with limestone on the surface of the ground), fencing and warning signs. The site remained active until 1977 when its functions were no longer required by the Navy for training purposes.
3. By 1977, only one lease was in effect as one of the original lessors had acquired fee title to the entire 640 acre site. The Navy determined the site was surplus to their needs and terminated the lease on 15 December 1977. Extensive restorations were required and made on about 70 acres in the center of the site. All acquisition and disposal information was acquired from maps, correspondence and records of the Jacksonville Naval Air Station, the Naval Construction Battalion Center in Port Hueneme, California, and the Naval Facilities Engineering Command in Charleston, South Carolina. The site is owned by a private corporation and utilized to grow timber for harvest.

DETERMINATION

Based on the foregoing findings of fact, the Bostwick Bomb Target (Putnam Bomb Target), Florida, has been determined to be formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701 et seq.

17 July 94
DATE

R. F. Yankoupe
ROGER F. YANKOUBE
Brigadier General, USA
Commanding

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. IO4FL091401
BOSTWICK BOMB TARGET, FLORIDA
SITE NO. IO4FL091400

4 February 1994

PROJECT DESCRIPTION. The site is a former bomb target. A visual inspection was performed by the United States (U.S.) Naval Air Station-Weapons Department on 9 May 1977. According to the Weapons Department report, several types of "dud" or expended ordnance were observed to be present in part, as well as complete rounds. Only some of the items found could be certified as "inert" by visual inspection. According to naval and Union Camp Paper Corporation sources, an ordnance cleanup was performed after this inspection; however, documentation to support this claim is unavailable. Even though ordnance cleanup activities reportedly have been conducted, it is possible that ordnance is still present on site, particularly in the wooded marshy area surrounding Simms Creek west of the former target. It also should be noted that any metal objects (e.g., practice bombs) are potential hazards to timber workers on site because the bombs can become projectiles if they come in contact with the high-speed saws used during logging operations.

PROJECT ELIGIBILITY. Bostwick Bomb Target is eligible for DERP-FUDS. The project has been evaluated in accordance with the 16 March 1993 DERP-FUDS Standing Operating Procedures for Performing Preliminary assessment at Potential Ordnance and Explosive Waste Sites.

POLICY CONSIDERATIONS. The site has been contaminated by the U.S. military and is a possible danger to the public. Currently, Department of Defense (DoD) policy permits remediation of DoD-generated ordnance.

PROPOSED PROJECT. The Inventory Project Report should be referred to Huntsville Division for a determination of further action.

RISK ASSESSMENT Categorization (RAC). Attached (RAC 3).

DISTRICT POC. Ivan Acosta, CESAJ-PD-EE, (904) 232-1693.

10 MAR 94

Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name	<u>Bostwick Bomb Target</u>	Rater's Name	<u>K. Longworth</u>
Site Location	<u>Putnam County, Florida</u>	Phone No.	<u>(904) 877-1978</u>
DERP Project #	<u>I04FL091400</u>	Organization	<u>Ecology and Environment, Inc.</u>
Date Completed	<u>January 28, 1994</u>	RAC Score	<u>3</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at this site. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter: OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	(10)
Bombs, Explosive	(10)
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	(10)
Detonators, Blasting Caps, Fuzes, Boosters, Burstors	6
Bombs, Practice (w/spotting charges)	(6)
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	<u>10</u>

What evidence do you have regarding conventional OEW? A letter provided by United States (U.S.) Navy, Southern Division, Facility Engineering Command-Real Estate Division states an ordnance inspection was performed on 9 May 1977 by

A. (cont.) lists several types of ordnance observed on site as well as the observation of several unnatural depressions.

B. Pyrotechnics (For munitions not described above.)

VALUE

Munition (Container) Containing
White Phosphorus or other
Pyrophoric Material (i.e.,
Spontaneously Flammable) 10

Munition Containing A Flame
or Incendiary Material (i.e.,
Napalm, Triethylaluminum Metal
Incendiaries) 6

Flares, Signals, Simulators 4

Pyrotechnics (Select the largest single value) 0

What evidence do you have regarding pyrotechnics? No evidence of
pyrotechnics was found.

C. Bulk High Explosives (Not an integral part of conventional ordnance;
uncontainerized.)

VALUE

Primary or Initiating Explosives 10
(Lead Styphnate, Lead Azide,
Nitroglycerin, Mercury Azide,
Mercury Fulminate, Tetracene, etc.)

Demolition Charges 10

Secondary Explosives 8
(PETN, Compositions A, B, C,
Tetryl, TNT, RDX, HMX, HBX,
Black Powder, etc.)

Military Dynamite 6

Less Sensitive Explosives 3
(Ammonium Nitrate, Explosive D, etc.)

High Explosives (Select the largest single value) 0

What evidence do you have regarding bulk explosives? No evidence of bulk
high explosives was found.

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or
other conventional ordnance; uncontainerized)

VALUE

Solid or Liquid Propellants 6

Propellants 0

What evidence do you have regarding bulk propellants? No evidence of
bulk propellants was found.

E. Radiological/Chemical Agent/Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear, incendiary and smoke)	5
Radiological/Chemical Agent <u>(Select the largest single value)</u>	<u>0</u>
What evidence do you have of chemical/radiological OEW? <u>none</u>	

=====

TOTAL HAZARD SEVERITY VALUE 10
(Sum of Largest Values for A through E--Maximum of 61)
 Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	22 and greater
CRITICAL	II	11 to 21
MARGINAL	III	6 to 10
NEGLIGIBLE	IV	1 to 5
**NONE		0

* Apply Hazard Severity Category to Table 3.

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD

(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations.	4
Inside walls, ceilings, or other parts of Buildings or Structures.	3
Subsurface	(2)
Location (Select the single largest value)	<u>5</u>

What evidence do you have regarding location of OEW? During an interview, the current landowner reported that practice bombs had been found on or near ground surface. Several ordnance items were observed by Mr. Hall of the U.S. Naval Air Station-Jacksonville during a visual inspection on 9 May 197

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	(2)
Over 2 miles	1
Distance (Select the single largest value)	<u>2</u>

What are the nearest inhabited structures? Roads and residences.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 5

Narrative Rural housing development on west side of site.

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of buildings in the area. Rural single-family residences.

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	<u>3</u>
Describe the site accessibility. <u>Site is accessible by an unpaved road; however, a locked gate restricts access.</u>	

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	<u>5</u>

Describe the site dynamics. Currently, the site is forested/farmed plantation pine. During pine timbering activities, 1- to 2-foot-long trenches are dug for planting. In addition, erosion of sediments along Simms Creek could potentially expose buried ordnance, and it is also possible

TOTAL HAZARD PROBABILITY VALUE

(Sum of Largest Values for A through F--Maximum of 30)

25

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	A	28 or greater
PROBABLE	B	22 to 27
OCCASIONAL	C	16 to 21
REMOTE	D	9 to 15
IMPROBABLE	E	less than 9

* Apply Hazard Probability Level to Table 3.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

- RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial 205-955-4968 or DSN 645-4968.
- RAC 2 High priority on completion of INPR - Recommend further action by CEHND.
- RAC 3 Complete INPR - Recommend further action by CEHND.
- RAC 4 Complete INPR - Recommend further action by CEHND.
- RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

The site is a former bomb target. A visual inspection was performed by the U.S. Naval Air Station Weapons Department on 9 May 1977. According to the report, several types of "dud" or expended ordnance were observed to be present in part, as well as complete rounds. Only some of the items found could be certified as "inert" by visual inspection. According to Naval and Union Camp Paper Company sources, an ordnance cleanup was performed after this inspection; however, documentation to support this claim is unavailable. It also should be noted that any metal objects (e.g., practice bombs) are potential hazards to timber workers on site because the bombs can become projectiles if they come in contact with the high-speed saws used during logging operations.