

WB
PK
CEHND-PM-SO

CONTROL NUMBER: 5-290
DUE DATE: 07 JUN 1994

6 Jun 94

MEMORANDUM THRU CEHND-ED-ES

FOR CEHND-PM

SUBJECT: DERP FUDS SANDUSKY PLUM BROOKS ORD WORKS INPR
G05OH001800

1. Subject data has been reviewed and comments by Branch are as indicated:

Comments	No	No.
Enclosed	Comment	N/A Hours

(X) () () (1) Safety Office Review by King
JL

2. Additional comments:

Encl

gdc B
C. DAVID DOUTHAT
Chief, Safety Division

DESIGN REVIEW COMMENTS

PROJECT DERP FUDS SANDUSKY PLUM BROOKS ORD WORKS

- | | | | |
|--|---|--|--------------------------------------|
| <input type="checkbox"/> SITE DEV & GEO | <input type="checkbox"/> MECHANICAL | <input checked="" type="checkbox"/> SAFETY | <input type="checkbox"/> SYSTEMS ENG |
| <input type="checkbox"/> ENVIR PROT&UTIL | <input type="checkbox"/> MFG TECHNOLOGY | <input type="checkbox"/> ADV TECH | <input type="checkbox"/> VALUE ENG |
| <input type="checkbox"/> ARCHITECTURAL | <input type="checkbox"/> ELECTRICAL | <input type="checkbox"/> ESTIMATING | <input type="checkbox"/> OTHER |
| <input type="checkbox"/> STRUCTURAL | <input type="checkbox"/> INST&CONTROLS | <input type="checkbox"/> SPECIFICATIONS | |

REVIEW INPR/5-290

DATE 02 JUNE 1994

TYPE

NAME R. KING/54587 *RDK*

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.	GENERAL	This INPR states that this site produced TNT/DNT and later that the magazine area was used for powder storage. Based upon this information, concur with the INPRs' recommendation for OEW. Recommend an EE/CA be scheduled for this site.	
2.	GENERAL	The original DD 1391 and an updated RAC Form is attached. RAC score of 3 is assigned.	

ACTION CODES: W - WITHDRAWN
 A - ACCEPTED/CONCUR N - NON-CONCUR
 D - ACTION DEFERRED VE - VE POTENTIAL/VEP ATTACHED

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

Site Name Plum Brook Ordnance Works Rater's Name Randall King
 Site Location Sandusky, OH Phone No. 205-955-4587
 DERP Project # G050H001806 Organization CEHND-PM-50
 Date Completed 1 Jun 94 RAC Score RAC-3

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. 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, Bursters	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>0</u>

What evidence do you have regarding conventional OEW? None Known

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? none known

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

VALUE

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

Demolition Charges 10

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

Military Dynamite 6

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

High Explosives (Select the largest single value) 8

What evidence do you have regarding bulk explosives? site produced
TNT & DNT

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

VALUE

Solid or Liquid Propellants 6

Propellants 6

What evidence do you have regarding bulk propellants? later magazine
area was used to store unknown powders

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 (Select the largest single value) 0

What evidence do you have of chemical/radiological OEW? NONE KNOWN

=====

TOTAL HAZARD SEVERITY VALUE 14

(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 <u>(Select the single largest value)</u>	<u>3</u>

What evidence do you have regarding location of OEW? site produced TNT, DNT, expect building and surround ground contamination

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 <u>(Select the single largest value)</u>	<u>4</u>

What are the nearest inhabited structures? Taken from original RAC

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 <u>(Select the single largest value)</u>	<u>2</u>
Narrative <u>unknown qty, taken from original RAC</u>	

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 <u>(Select the largest single value)</u>	<u>4</u>
Describe types of buildings in the area. <u>Taken from original RAC</u>	

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	0
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)

3

Describe the site accessibility. Taken from original RAC

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 (<u>Select largest value</u>)	0

Describe the site dynamics. None Expected

TOTAL HAZARD PROBABILITY VALUE

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

16

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.

New RAC upgrade RAC from 4-to-3.