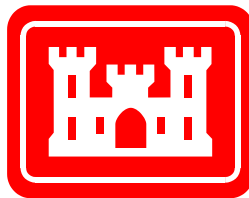


Time-Critical Removal Action Completion Report
Port Angeles Combat Range, MRS-1
Military Munitions Response Program
FUDS Project: F10WA003301
Contract Number: W9128F-18-D-0082, DO W9128F20F0129

October 2020

Prepared for:



U.S. Army Corps of Engineers, Kansas City District

U.S. Army Corps of Engineers, Omaha District

Prepared by:

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List of Acronyms and Abbreviations

AOR	AOR International, Inc.
Army	Department of the Army
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Port Angeles
CSM	Conceptual Site Model
DA PAM	Department of the Army Pamphlet
DERP	Defense Environmental Response Program
DoD	U.S. Department of Defense
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRA	Munitions Response Area
MRS	Munitions Response Site
PACR	Port Angeles Combat Range
PDT	Project Delivery Team
QA	Quality Assurance
TCRA	Time-Critical Removal Action
USACE	U.S. Army Corps of Engineers
UXOQP	Unexploded Ordnance Qualified Person

1.0 Introduction

AOR International, Inc. (AOR) under contract to the U.S. Army Corps of Engineers (USACE) Omaha District, has prepared this Completion Report for Port Angeles Combat Range (PACR) Time-Critical Removal Action (TCRA), Munitions Response Site (MRS)-1. This report documents the activities of the installation of warning signs within PACR MRS-1 completed in accordance with the TCRA Work Plan.

1.1 Project Authorization

This project was completed pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Defense Environmental Response Program – Formerly Used Defense Sites (DERP-FUDS). Formerly Used Defense Sites are properties that the Department of Defense (DoD) once owned or used, but no longer controls. The U.S. Army Corps of Engineers (USACE) is the manager of the DERP-FUDS program and is responsible for implementing appropriate response actions where environmental impacts have occurred from historical activities at DoD sites and where such releases may constitute a residual human health or ecological threat.

These activities were completed in accordance with the PACR TCRA that details specific procedures to install warning signs on the perimeter of the 105.7-acre area within PACR MRS-1.

Signs met size and description requirements found in Department of the Army Pamphlet (DA PAM) 385-63. Signage installed under this TCRA will reduce the immediate risk to human health that the munitions at the site present.

1.2 Site Description

PACR is located approximately seven miles southeast of the city of Port Angeles, in Clallam County, Washington. The acreage that was leased to, or otherwise possessed by, the United States Army for establishment of the range was approximately 1,628 acres and was used for weapons practice with 37-millimeter (mm) and 75 mm projectiles, 60 mm and 81 mm mortars, and various small arms. The focus of this Completion Report is the 105.7-acre area within MRS-1, a 621-acre area owned by the City of Port Angeles (City). The City holds the property as a wildlife and water conservation area. While the property is not open to the public and some areas are densely vegetated, it was not fenced, and the City acknowledged members of the public had entered the property for hiking and hunting. To support the effectiveness and future enforcement of the restrictions, the installation of warning signs was determined appropriate for the MRS-1.

2.0 Summary of Activities

The PACR TCRA MRS-1 was completed in July 2020 by a team consisting of personnel from AOR, USACE Omaha, Kansas City and Seattle Districts. The primary purpose of the TCRA consisted of installing warning signs outside the perimeter of the 105.7-acre area within PACR MRS-1 to reduce the immediate risk to human health that potential munitions and explosives of concern (MEC) present at the site.

The warning sign design met the requirements for description, size, and placement in accordance with DA PAM 385-63, Range Safety (2014), and the Project Delivery Team (PDT). Table 1 lists members of the PDT. The size of the small warning signs was 1'x 2' and the larger entry signs were 4' x4'. See Appendix A for the design feature of these signs.

AOR field crew and representatives from both USACE Omaha and Seattle Districts mobilized to perform the installation of perimeter signs at PACR MRS-1 are listed below.

Name	Company	Position
Randy Schneider	AOR	Unexploded Ordnance Safety Officer (UXOSO)
Jason Kanski	AOR	Unexploded Ordnance Technician III
Brett Marraccini	AOR	GIS Support Technician
Joseph Marsh	USACE, Seattle	Quality Assurance (QA)
Danielle Bieber	USACE, Omaha	Quality Assurance (QA)

2.1 Signage Installation Activities

The field crew comprising of two AOR Unexploded Ordnance Qualified Persons (UXOQPs), AOR GIS Support Technician and two Quality Assurance (QA) representatives from the USACE Omaha and Seattle Districts, mobilized to perform the installation of perimeter signs outside the 105.7-acre area at PACR MRS-1. Initial installation activities lasted two days beginning on 28 July and ending midday 29 July 2020.

Prior to the beginning of each workday, the UXOSO conducted a morning safety brief detailing the days' work events, location, weather, UXO avoidance procedures and emergency routes.

Seventeen small warning signs were placed at 200-meter intervals or less around the outside of the perimeter of the area. Small signs along Deer Park Rd were mounted on 8' U-Channel steel post and attached with anti-theft hardware. All other small signs were installed on 6' U-Channel Steel post with anti-theft hardware. All locations were first checked with a hand-held magnetometer prior to ground disturbance. U Channel posts were pounded into the ground using a weighted post pounder.

The two larger entry signs were placed at natural and obvious entry points to the 105.7-acre area adjacent to Deer Park Rd. The larger signs were installed on two 4"x 4" posts, concreted in the ground and attached by anti-theft hardware.

A map depicting locations and global positioning system (GPS) coordinates of sign placement is provided as Attachment A. Selected photographs of field activities are provided as Attachment B.

No MEC or Munitions Debris (MD) items were discovered during installation of warning signs.

2.2 Deficiencies/Corrections

During the installation of the first large entry sign it was noticed by the QA representative from the USACE Seattle district that the word Trespassing was misspelled (see photo #2) The discrepancy was reported to the PDT and it was decided to continue with the installation of all signs and make corrections at a later date.

On August 15, 2020 personnel from the sign manufacturer Olysign, Inc., located in Port Angeles, WA, fabricated and installed vinyl, adhesive lettering to correct the spelling error on signs located along Deer Park Rd without entering the MRS (see photos #3 & #5). The remaining signs within the MRS, were corrected by AOR and USACE personnel on September 29 and October 09, 2020. During the sign correction trip on September 29, 2020, the team noted small sign S1 had been removed.

3.0 Conclusion

The warning signs were installed on the perimeter of MRS-1 to present munitions awareness and safety information to the public.

The site conditions, the nature of the potential hazard, and the potential exposure pathways to trespassers and authorized workers present an endangerment to public health. The warning signs installed by this TCRA address this. The installed signage reduces the immediate risk to human health and welfare that any remaining munitions at this site may present by informing the public of the danger posed by past military munitions and by providing risk reduction and educational information.

Given that hunters and hikers are the primary trespassers at the site, risk will be reduced by the installed signs as allowed by the Deed to the City of Port Angeles, and providing information to the City regarding munitions-related hazard recognition and response actions to assist with improved control of the property. With the signs now installed, the City of Port Angeles plans to enforce the Washington State law RCW 9A.52.080 against trespassing at the property.

The Conceptual Site Model (CSM) for the site considered the use restrictions in the Deed that preclude intrusive activities. However, the CSM includes a potentially complete pathway for potential exposure to MEC in subsurface soils for personnel that may violate the use restrictions. While exposure to subsurface MEC is unlikely due to the deed provisions restricting digging and harvesting of timber, the CSM acknowledges that subsurface MEC could migrate to the surface by natural processes (erosion or frost heave). Even though previous investigations within the accessible areas of the site removed visible MEC items, potential exposure to surface MEC in the future is still of concern. The City of Port Angeles has indicated their intent to enforce state trespassing laws at MRS-1. However, notice that the area is not open to the public was necessary to prosecution. The warning signs installed under this TCRA provide that notice.

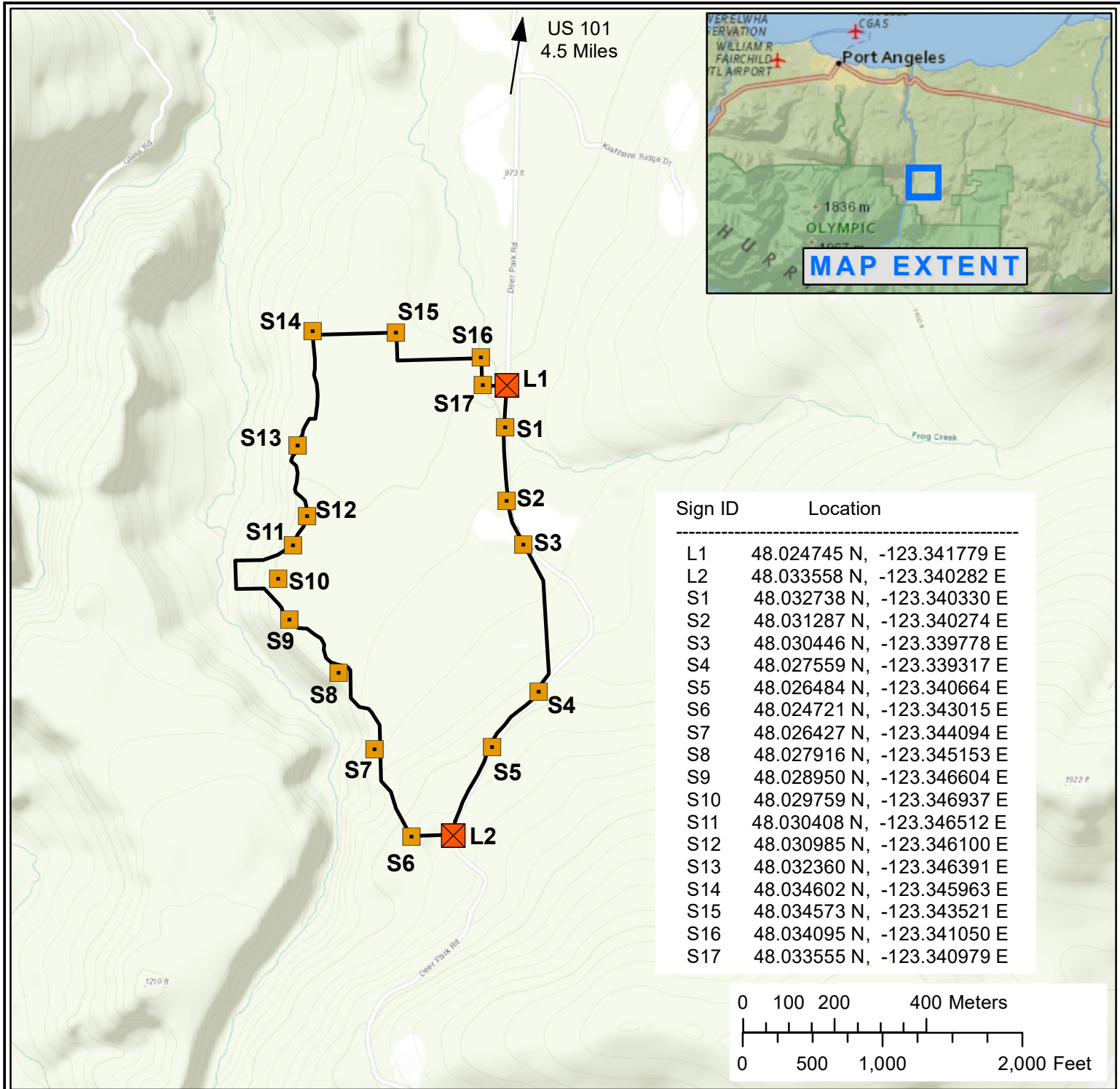
4.0 References

Department of the Army Pamphlet (DAPAM) 385-63, "Range Safety" (2014).

USACE, Action Memorandum for Time-Critical Removal Action, Port Angeles Combat Range, MRS-1, January 2020.

USACE, Work Plan for Time-Critical Removal Action, Port Angeles Combat Range, MRS-1, May 2020.

Attachment A
Figure 1, Sign Placement



Sign ID	Location
L1	48.024745 N, -123.341779 E
L2	48.033558 N, -123.340282 E
S1	48.032738 N, -123.340330 E
S2	48.031287 N, -123.340274 E
S3	48.030446 N, -123.339778 E
S4	48.027559 N, -123.339317 E
S5	48.026484 N, -123.340664 E
S6	48.024721 N, -123.343015 E
S7	48.026427 N, -123.344094 E
S8	48.027916 N, -123.345153 E
S9	48.028950 N, -123.346604 E
S10	48.029759 N, -123.346937 E
S11	48.030408 N, -123.346512 E
S12	48.030985 N, -123.346100 E
S13	48.032360 N, -123.346391 E
S14	48.034602 N, -123.345963 E
S15	48.034573 N, -123.343521 E
S16	48.034095 N, -123.341050 E
S17	48.033555 N, -123.340979 E

Figure 1 Sign Placement

Port Angeles Combat Range MRS-1 TCRA



US Army Corps of Engineers

Drawn By: BMarraccini

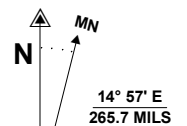
Scale: **1:12,000**

Date Drawn: 8/4/2020

Checked By: NB Rev: 0

Submitted By: BMarraccini

Revision Date: 9/9/2020




2020 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET


Coordinate System:
NAD 1983 UTM Zone 10N
EPSG: 26910

Port Angeles, WA

LEGEND

Installed Sign Locations  TCRA Project Boundary

 Large 4x4 Signs

 Small 1x2 Signs

Attachment B

Photographs



Photo #1: Large Entry Sign (L1) installed



Photo #2: Large Entry Sign (L2) installation along Deer Park Rd



Photo #3: Large Entry Sign (L2) with misspelled "Trespassing"



Photo #4: Large Entry Sign (L1) after correction



Photo #5: Small Sign (S1) w/misspelling along Deer Park Rd



Photo #6: Corrected Small Sign along Deer Park Rd



Photo #7: Field Team moving from S2 to S1 along Deer Park Rd



Photo #8: Small Sign (S3) along Deer Park Rd



Photo #9: Small Sign (S4) along Deer Park Rd



Photo #10: Small Sign (S5) along Deer Park Rd



Photo #11: Small Sign (S6)



Photo #12: Small Sign (S7)



Photo #13: Small Sign (S8)

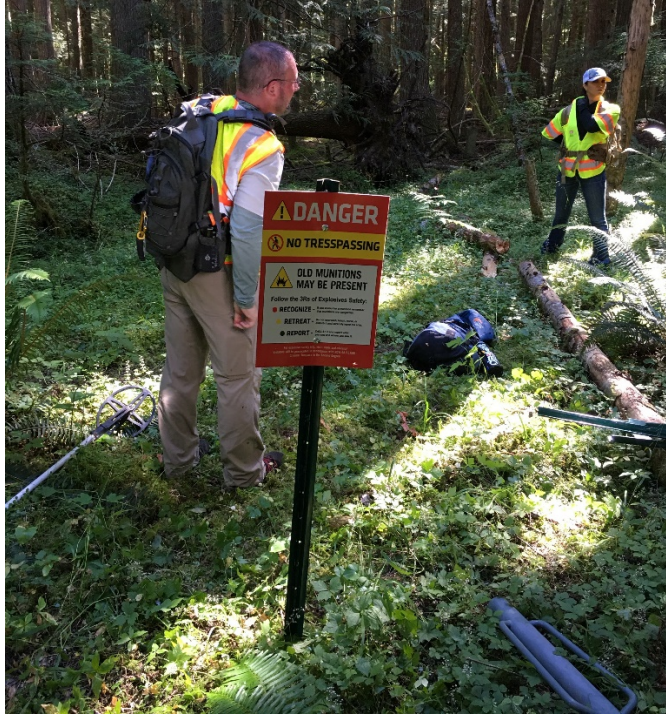


Photo #14: Small Sign (S9)



Photo #15: Small Sign (S10)



Photo #16: Small Sign (S11)



Photo #17: Small Sign (S12)



Photo #18: Small Sign (S13)



Photo #19: Small Sign (S14)



Photo # 20: Small Sign (\$15)



Photo #21: Corrected Small Sign (\$16)



Photo #22: Small Sign (S17)