

Port Angeles Combat Range Port Angeles, Washington



Public Involvement Plan

Final
Formerly Used Defense Sites
Military Munitions Response Program

FUDS Property No. F10WA033301
Contract No. W9128-10-D-0058
Delivery Order 0006

May 2013



This page intentionally left blank

Port Angeles Combat Range Port Angeles, Washington

Public Involvement Plan

Final

Formerly Used Defense Sites Military Munitions Response Program

FUDS Property No. F10WA033301

Version 1.0

Prepared for:



United States Army Corps of Engineers
USACE Project Management – Kansas City District
Munitions Design Center – Omaha District
USACE Regional District - Seattle

May 2013

This page intentionally left blank

CONTRACTOR'S STATEMENT OF INDEPENDENT TECHNICAL REVIEW

HDR Environmental, Operations and Construction, Inc. has completed this Public Involvement Plan for Formerly Used Defense Sites Military Munitions Response Program Remedial Investigation Environmental Services for the Port Angeles Combat Range, Port Angeles, Washington. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy, principles, and procedures, utilizing justified and valid assumptions, was verified. This included review of technical assumptions; methods, procedures, and materials to be used; and whether the product meets customer's needs consistent with law and existing Corps policy.

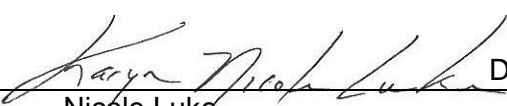
Reviewed/Approved by:



Lawrence Devries
Project Manager

Date: April 23, 2013


Reviewed/Approved by:



Nicole Luke
Project Scientist

Date: April 23, 2013

Reviewed/Approved by:



Patrick Scher
Quality Assurance Manager

Date: April 23, 2013

This page intentionally blank

TABLE OF CONTENTS

1.0	OVERVIEW OF PUBLIC INVOLVEMENT PLAN.....	1-1
1.1	Public Involvement Goals and Objectives	1-1
2.0	PROPERTY DESCRIPTION	2-1
2.1	Site Location	2-1
2.2	Site Description.....	2-1
2.3	Site History	2-9
2.3.1	Summary of Historic Munitions and Explosives of Concern Related Activities....	2-9
2.3.2	Historic Range Clearances	2-10
2.4	Past Military Munitions Response Program Related Activities at Port Angeles Combat Range	2-10
2.4.1	Range Clearance Technology Assessment	2-11
2.4.2	Inventory Project Report	2-11
2.4.3	Archives Search Report	2-11
2.4.4	Archives Search Report Supplement	2-11
2.4.5	Site Inspection	2-12
2.4.6	Environmental Security Technology Certification Program Demonstration.....	2-12
2.5	Project Activities and Performance Objectives	2-12
3.0	COMMUNITY BACKGROUND	3-1
3.1	Current Land Use	3-1
3.2	Nearby Population	3-1
3.2.1	Demographic	3-1
3.2.2	Types of Business and Industry	3-2
3.2.3	Munitions Response Site and Adjacent Parcel Ownership	3-5
3.2.4	Future Land Use	3-7
3.3	Cultural Resource Surveys	3-7
3.4	Past Regulatory Activities	3-7
3.5	History of Community Involvement.....	3-7
3.6	Key Community Concerns	3-7
4.0	PORT ANGELES COMBAT RANGE PUBLIC INVOLVEMENT PROGRAM	4-1
4.1	Public Involvement Program	4-1
4.2	Administrative Record and Information Repository.....	4-5

4.3	Public Involvement Activities.....	4-5
5.0	REFERENCES.....	5-1

List of Tables

Table 2-1:	MMRP MRS Inventory	2-1
Table 2-2:	PACR MRS with Sub-Ranges Acreage and Coordinates	2-2
Table 3-1:	United States Census Bureau	3-2
Table 3-2:	Parcel Ownership	3-5
Table 4-1:	CERCLA Requirements for Public Involvement	4-3

List of Figures

Figure 2-1:	Project Site Map, Port Angeles Combat Range.....	2-3
Figure 2-2:	PACR MRS with Sub-Ranges, Port Angeles Combat Range, WA	2-5
Figure 2-3:	Topography, Port Angeles Combat Range, WA	2-7
Figure 3-1:	Nearby Census Population, Port Angeles Combat Range, WA.....	3-3
Figure 3-2:	Adjacent Parcel Ownership, Port Angeles Combat Range, WA	3-9

Appendices

Appendix A	Acronyms and Abbreviations
Appendix B	Government Officials Contact List
Appendix C	Regulatory Agencies and Interested Parties
Appendix D	Restoration Advisory Board Members
Appendix E	Media Contact List
Appendix F	Definitions
Appendix G	Meeting Locations
Appendix H	Fact Sheet
Appendix I	Comment Response Table
Appendix J	Approval Letters
Appendix K	Sample Public Notices Advertisements
Appendix L	Standard Form 298

1.0 OVERVIEW OF PUBLIC INVOLVEMENT PLAN

HDR Environmental, Operations and Construction, Inc. (HDR) is submitting this Draft Public Involvement Plan (PIP) for the Formerly Used Defense Sites (FUDS) Military Munitions Response Program (MMRP) to the U.S. Army Corps of Engineers (USACE) in accordance with Delivery Order 0006 under Contract W9128F-10-D-0058 to conduct a Remedial Investigation, (RI) Feasibility Study and (FS) preparation of a Decision Document for the Port Angeles Combat Range (PACR) located in Clallam County, Washington.

The purpose of this PIP is to promote communication between USACE and the community surrounding the PACR. This PIP has been developed to support work planning, field investigation, reporting, and decision document activities to occur between April 2013 and December 2014. The USACE began using the term “Public Involvement” in 2004 to denote the Army’s approach to working with communities. This plan identifies issues of community concern about PACR, and serves as a guide for public involvement goals and objectives.

Federal agencies develop public involvement programs to be consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) Section 113(k)(2), as amended by Superfund Amendments and Reauthorization Act of 1986 (SARA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). It is the policy of the Department of Defense (DoD) to involve the local community in the environmental restoration process. These requirements are the basis for more comprehensive and effective community relations activities. By identifying the public’s concerns, the USACE is able to fashion a response that more effectively addresses the community’s needs.

This plan addresses how the public will be informed and involved during the PACR project activities under the FUDS MMRP. Included in this plan are the:

- Public involvement goals and objectives;
- Site location, description, ownership and history;
- Community background and profile; and
- Proposed public involvement program.

This information is based on research conducted in the community, the past record of PACR activities, and interviews conducted with key stakeholders during past site investigations.

1.1 Public Involvement Goals and Objectives

The goal of the USACE is to be forthright, responsive, clear, and proactive in their communications involving the stakeholders. Stakeholders include members of the Federal and State regulatory agencies, local government officials (City and County), the general public, interest groups, and the media who express an interest in this site. The objective is to understand the communities concerns and address each concern in a timely manner (USACE, 2004).

This page intentionally left blank

2.0 PROPERTY DESCRIPTION

The PACR property in Clallam County is described below including a site location, description, and history. It also details the past MMRP related activities conducted at the PACR property, and the proposed project activities and performance objectives.

2.1 Site Location

The PACR, FUDS property number F10WA0033, is located approximately 7 miles southeast of the City of Port Angeles, in Clallam County, Washington. The PACR is located in Sections 5, 8, and 17, Township 29 North, Range 5 West of the Willamette Meridian. **Figure 2-1** presents the location of the PACR FUDS eligible project site. The entire PACR Munitions Response Site (MRS) is listed as 2,629 acres. A portion of this acreage is within the boundary of the Olympic National Park.

2.2 Site Description

The PACR is included in the MMRP Inventory in the Defense Environmental Restoration Program Annual Report to Congress Fiscal Year 2011 (DoD, 2011) under Federal Facility Identification number WA09799F318400 with range information as follows:

Table 2-1: MMRP MRS Inventory

Site ID	MRSP Score	Nearest City	Landowner Name	Ownership Interest	Range Total Acreage	Land Use Restrictions	Land Use Access Controls
01OEW	No Data Available	Port Angeles	Other Federal Government	No Data Available	2,629	No Data Available	No Data Available

Note:
MRSP = Munitions Response Site Prioritization Protocol

The U.S. National Park Service (NPS) does not have a programmatic agreement with the DoD. Therefore, USACE is not permitted to enter Olympic National Park and conduct an investigation. Thus, this portion of the PACR MRS within the Olympic National Park will not be investigated under the FUDS MMRP. The portion of PACR MRS eligible under FUDS MMRP is approximately 1,629 acres. The exact acreage is not known; however, the Archives Search Report (ASR) (USACE, 1996) for the PACR MRS lists the acreage as “1,600 (+/-) acres”. The acreage and coordinates for the PACR MRS and sub-ranges are listed in **Table 2-2** below and the ASR Supplement (USACE, 2004) as follows:

Table 2-2: PACR MRS with Sub-Ranges Acreage and Coordinates

Range/Sub-range Name	Range Identification	Approximate Acreage	UTM Coordinates (meters)
Range Complex No. 1	F10WA003301R01	2,629	N 5318355 E 473503
Direct Fire Impact Area	F10WA003301R01-SR01	119	N 5319614 E 474222
Direct Fire and Combat Training	F10WA003301R01-SR02	37	N 5245500 E 474341
Indirect Fire Impact Area	F10WA003301R01-SR03	483	N 5319084 E 473895
Buffer Zone	F10WA003301R01-SR04	856	N 5317495 E 473788
Buffer Zone and Combat Training	F10WA003301R01-SR05	23	N 5319758 E 474317
Combat Training Area	F10WA003301R01-SR06	41	N 5320231 E 474337
Impact/Buffer Area	F10WA003301R01-SR07	960	N 5318355 E 473503

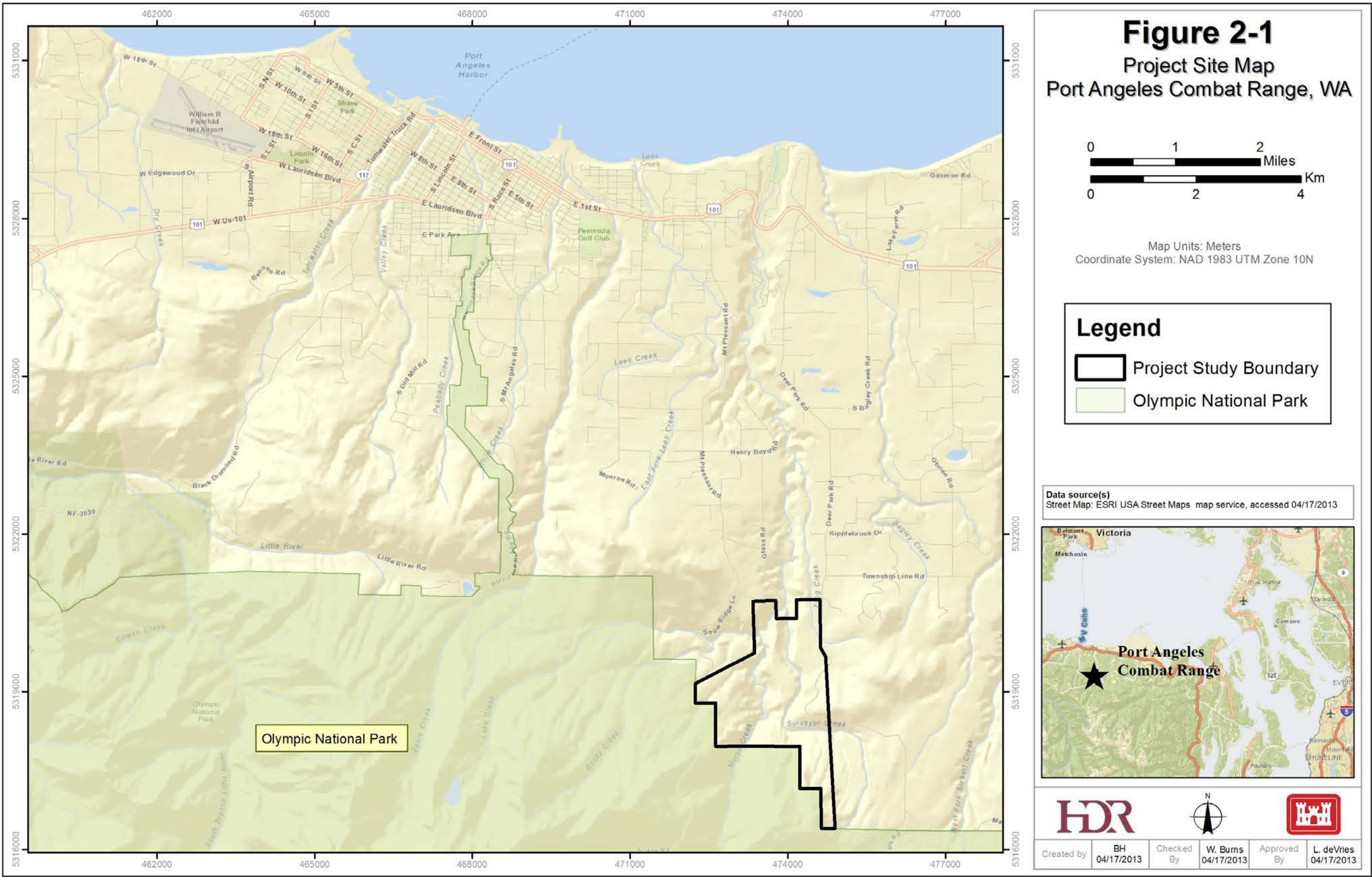
Coordinates for the ranges are in Universal Transverse Mercator (UTM), Zone 10N, North American Datum (NAD) 83.

The reported area of Range Complex No.1 MRS (2,629 acres) exceeds the total area of the seven sub-ranges combined (2,519 acres). This discrepancy is due to the area of the Impact/Buffer extending beyond the FUDS property boundary within the northern portion of the MRS. **Figure 2-2** presents the PACR MRS and sub-ranges.

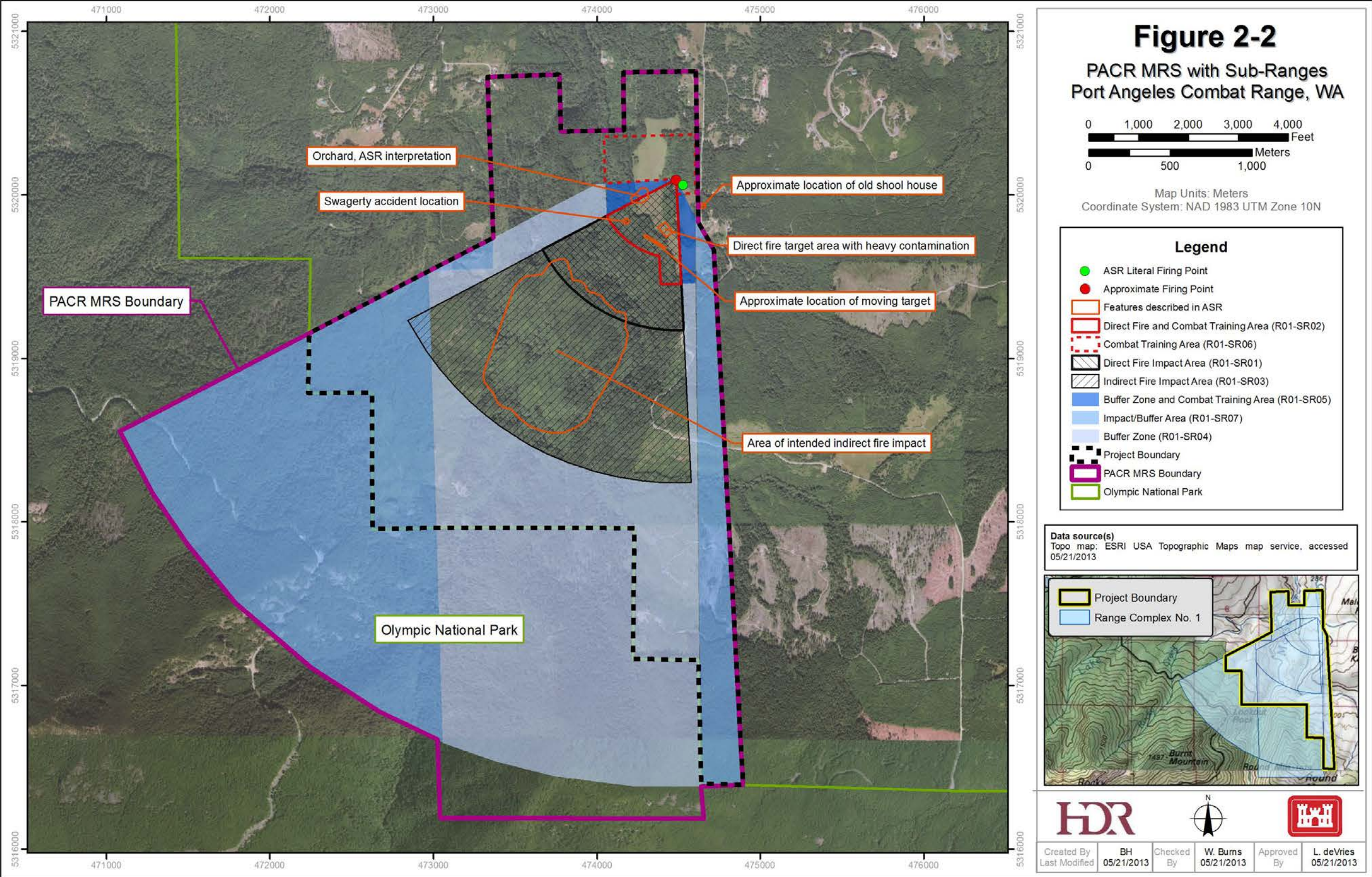
The PACR site is part of the Olympic Peninsula in the northwest portion of the State of Washington. The topography and vegetation, as well as a summary review of historical aerial photos indicate the land is hilly to semi-mountainous. The northern portion of the PACR contains areas of meadowland/grassland, but other areas are densely forested. The minimum and maximum elevations of the PACR are approximately 700 feet (ft) in the north and 3,541 ft in the south at Round Mountain. Morse and Surveyor Creeks have eroded deeply into the terrain at the PACR..

Vegetation on the PACR property consists of primarily second growth fir and alder with some cedar trees. In forested areas, the PACR property has very dense undergrowth that makes access difficult. Recently logged areas have very dense re-growth of small trees and shrubs that makes these areas nearly inaccessible. The PACR site topography, including surface elevations and prominent features, is provided on **Figure 2-3** (Shaw, 2009).

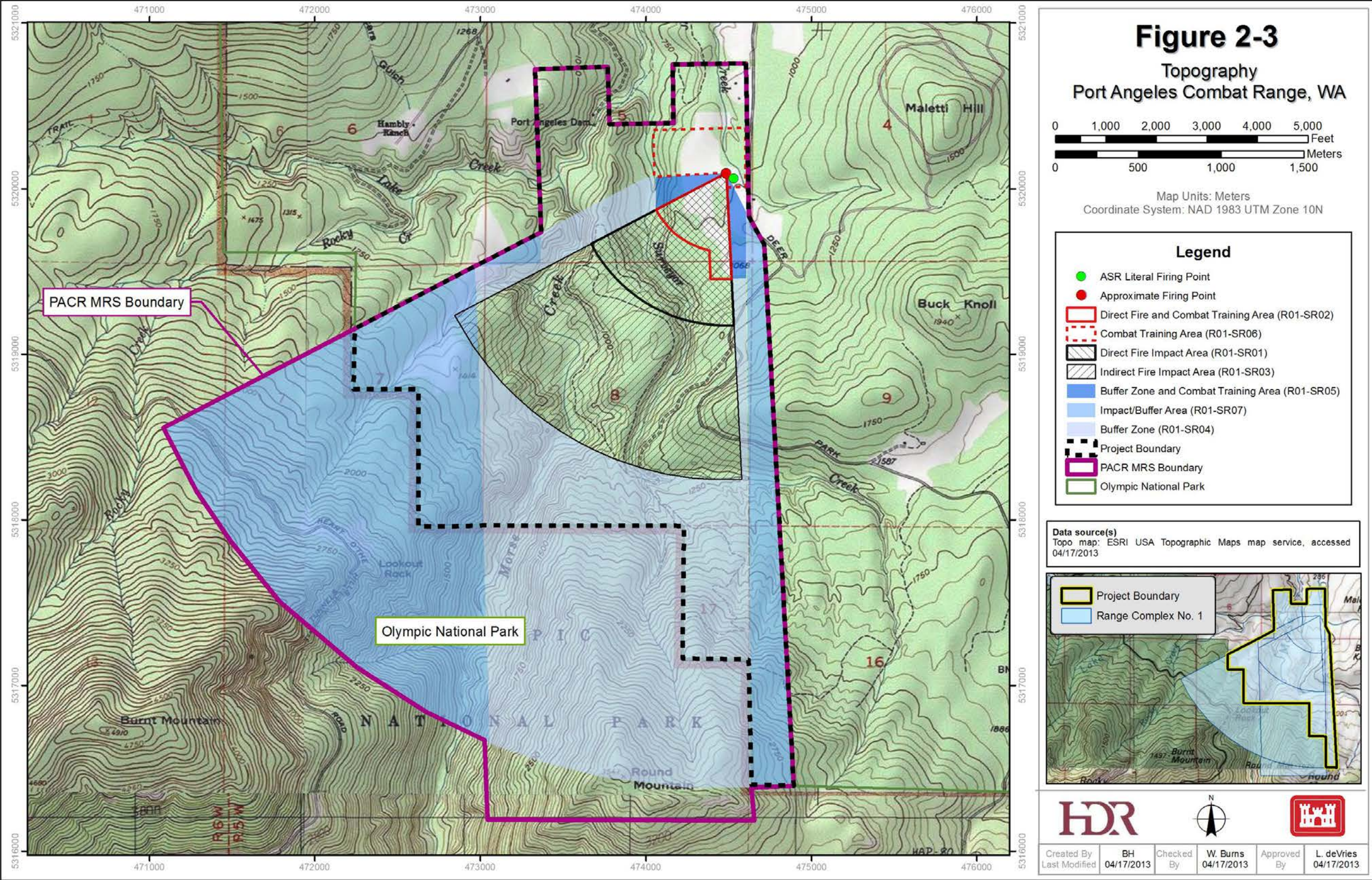
Review of historical aerial photographs indicates that an area of meadowland/grassland has been present since at least 1939. This open meadowland/grassland was used as a firing point for the range. The southern portion of the property is located within the Olympic National Park. The Buffer Zone extends into the Olympic National Park.



This page intentionally left blank



This page intentionally left blank



This page intentionally left blank

2.3 Site History

In early 1943, the 115th Cavalry Squadron (mechanized) requested that land be leased in the area of Port Angeles, Washington for use as a ground-to-ground combat range. Through leases and use permits, approximately 1,600 acres were obtained within Sections 5, 8, and 17 within Township 29 North, Range 5 West for use as the PACR. There were no buildings or improvements other than a spotting tower. Troops were encamped at the Port Angeles Fair Grounds/Conservation Corps Camp. In April and May 1944, the range was declared excess and all leases and permits were canceled.

Two young boys were killed in August 1948 when a 37 millimeter (mm) shell exploded while they were cutting some downed timber within the former range. The 37mm shell was embedded in a log they were sawing. Immediately after the death of the two boys, the Army initiated the dedudding of the area expected to be impacted. On May 7, 1949, a Certificate of Clearance was issued noting that approximately 775 acres had been cleared of dangerous/explosive material. The locations of the previous clearance efforts are not precisely known. Subsequent clearances of the PACR occurred in 1952, 1955, 1956, and 1957; however, they were not completed to the standards implemented today. Current standards employ better technology, robust data collection/removal requirements and more stringent Quality Assurance and Quality Control.

In 1963, the Army repurchased 652 acres of “potentially contaminated” (impacted) land to restrict access where the UXO accident occurred. The 652 acres were retained by the Army until 1967 when they were transferred to the City of Port Angeles and to Mr. Raymond Diehl. A “surface use only” and indemnity clause was included in the quitclaim deed records (USACE, 1996).

2.3.1 Summary of Historic Munitions and Explosives of Concern Related Activities

The range was intended to be used for tactical firing problems and short-range known distance firing (200 to 300 yards). An Inventory Project Report (INPR) in 1993 (USACE, 1993) indicated the range was used for weapons practice with 37mm and 75mm projectiles, 60mm and 81mm mortars, and various small arms. The ASR indicated that there were reports that mortars and land mines were used at the PACR; however, there is no definitive evidence that land mines with energetics were used at PACR. Records indicate that the range consisted of a single firing line, with firing occurring to the south into the hilly and mountainous terrain.

Interviews with former residents of the area and enlisted personnel who used the range indicated that all firing was west of Deer Park Road. Firing occurred at direct stationary and moving targets (targets and tanks pulled across the range using cables) and indirect firing using coordinates.

2.3.2 Historic Range Clearances

Based on the death of the two boys in August of 1948, multiple range clearances were conducted by the Army; however, the range clearances were not performed to today's standards. A summary of the historic range clearances are presented below:

- Following the accident, a range clearance was conducted from October 1948 through January 1949 consisting of an inspection and "de-dudding" program for approximately 775 acres thought to be impacted. The work consisted of using mine detectors to sweep all open fields and known impact/target areas. Trees, which were thought to contain projectiles, were cut down. Heavy timber, difficult terrain, and the vastness of the area hampered clearing efforts. On May 7, 1949 a Certificate of Clearance was issued by the disposal unit that stated, "Due to the use of high explosives, wide dispersity [sic] of fire and roughness of terrain it is recommended that these lands be restricted to surface use only." Items recovered were identified as "dangerous &/or explosive materials." The perimeter of the area was posted with signs warning of the potential danger.
- In September 1952, personnel from the bomb disposal team swept a 10-acre parcel (Peterson property) in the impacted area that had been reportedly missed during the 1948-1949 work. No explosives were found. Despite no ordnance or scrap being found, "surface use only" was recommended to remain in place.
- In November 1955, a visual inspection of approximately 1,600 acres of the range was made by the bomb disposal team. A Certificate of Clearance was issued that declared the range clear of impact areas, except for one small parcel (0.71 acres). It was not reported if ordnance was found.
- A subsurface sweep (maximum 12-inch depth) of the 0.71-acre parcel was carried out by Fort Lewis personnel September 17-21, 1956. Considerable scrap metal from a target tank was collected as well as various items of expended ordnance. Items recovered included twenty-six 37mm M51 rounds; one 37mm M63 high explosive round; four rusted bodies, M51 fuze type; and three rusted fin fragments from an 81mm mortar round.
- A final clearance certificate from March 1957 indicated that further actions toward clearing the area would not achieve a completely "free and clear" determination. Items recovered were identified as "dangerous &/or explosive materials" (USACE, 1996).

2.4 Past Military Munitions Response Program Related Activities at Port Angeles Combat Range

Several investigations focusing on the identification of MEC have been performed at the PACR since the clearance efforts that occurred in the 1950's. The following sections describe the scope and major conclusions of the previous work.

2.4.1 Range Clearance Technology Assessment

In 1986, a Range Clearance Technology Assessment was completed for the PACR (NEODFC, 1986). The report concluded that access to virtually all the range is extremely limited due to terrain and vegetation and "Additional mechanical clearance of the range is environmentally, technically, and economically unfeasible at this time or in the foreseeable future."

2.4.2 Inventory Project Report

An INPR was prepared and issued in 1993. The report determined that the PACR was formerly used by the Army and is eligible for investigation under the FUDS program. It was also proposed that further evaluation of the site be completed to better determine the hazards posed by the presence of UXO (USACE, 1993).

2.4.3 Archives Search Report

An Archives Search Report (ASR) was prepared and issued in 1996 (USACE, 1996) for the PACR summarizing historical information and a site visit that occurred during July 1994, to confirm site conditions. The PACR ASR identified six areas of interest:

- Area A – Direct Fire Impact Area,
- Area B – Indirect Fire Impact Area,
- Area C – Buffer Zone,
- Area D – Combat Training Area,
- Area E – All remaining land, and
- Area F – Impact/Buffer Area (additional acreage).

The ASR identified the likely munitions used at PACR. During the site visit, the ASR team did not observe any ordnance-related items, metal fragments, or obvious signs of ordnance usage.

Community interviews were conducted during the ASR to obtain any historic knowledge and allow the community to express concerns.

None of the accumulated evidence summarized in the ASR indicated that Chemical Warfare Materiel (CWM) or Chemical Agent Identification Sets (CAIS) were used at the PACR.

2.4.4 Archives Search Report Supplement

The ASR Supplement (USACE, 2004) identified one range and seven sub-ranges as follows:

- Range Complex No. 1,
 - Direct Fire Impact Area,
 - Direct Fire and Combat Training Area,
 - Indirect Fire Impact Area,
 - Buffer Zone,

- Buffer Zone and Combat Training,
- Combat Training Area, and
- Impact/Buffer Area.

2.4.5 Site Inspection

A Site Inspection (SI) was conducted in 2008 and 2009. Field activities included visual surveys and environmental media sampling.

The SI field investigation was conducted during October 2008. A two-person reconnaissance team, including a qualified UXO Technician, conducted the visual inspection. Subsurface anomalies were noted in the area described in the 1955 range clearance as an “Area of Heavy Contamination” (Shaw, 2009).

Based on historical evidence of MEC, Range Complex No. 1 at the PACR FUDS property was recommended for additional investigation for potential MEC hazards.

2.4.6 Environmental Security Technology Certification Program Demonstration

In 2011, geophysical survey data were collected over an area at the PACR in an effort to characterize the site for future Environmental Security Technology Certification Program (ESTCP) (ESTCP, 2011) demonstration. Geophysical data were collected over an area of approximately 31 acres. During the geophysical data collection a 37mm projectile from the PACR site was made. The Clallam County Sheriff’s office was immediately notified. A Washington State Police bomb technician safely disposed of these collected items explosively on September 29, 2011.

2.5 Project Activities and Performance Objectives

The overall project objective is to conduct a Remedial Investigation (RI) and Feasibility Study (FS) for the Port Angeles Combat Range to determine whether the PACR MRS warrants further response action pursuant to CERCLA and the NCP. The RI will accomplish the following objectives:

- Determine nature (types and condition) and extent (horizontal and vertical location) of munitions and munitions related contamination;
- Determine the risk posed to human health and the environment by the munitions, if required;
- Determine remediation alternatives if further munitions response actions are required; and
- Prepare a Decision Document for the selected remedy, if required.

The results of the RI will provide sufficient information to determine whether the PACR MRS will warrant further response action pursuant to CERCLA and the NCP, consistent with the FUDS MMRP.

3.0 COMMUNITY BACKGROUND

The following sections detail the current land use, nearby population, and anticipated future land use of the PACR.

3.1 Current Land Use

The PACR is primarily maintained as a protected watershed for the city of Port Angeles, timber production, Olympic National Park, and private residences. The site is accessible to the general public. During the SI fieldwork in 2008, barbed wire fencing was observed along the Deer Park Road boundary in the northern portion of the PACR. The fencing was in poor condition and was propped up in places. The southern portion of the PACR is within the Olympic National Park. This portion of the PACR will not be investigated during the course of this RI because the NPS does not have a programmatic agreement with the DoD to allow USACE access to property managed by Olympic National Park. Members of the public who attended the public information meeting for the SI indicated that the area is used for hiking and hunting. A few remaining signs warning of munitions hazards are still present (Shaw, 2009).

3.2 Nearby Population

The closest population center is the city of Port Angeles, Washington located approximately 7 miles to the northwest. The 2010 census population was 19,038 persons United State Census Bureau (USCB) (USCB, 2010). The 2010 population density for Clallam County is 40.4 persons per square mile.

Estimated populations (USCB, 2010) within a 4-mile radius and 2-mile radius of the PACR FUDS property boundary are 3,887 and 1,064, respectively. The estimated numbers of households within a 4-mile radius and 2-mile radius of the FUDS property boundary are 1,769 and 496, respectively (**Figure 3-1**).

3.2.1 Demographic

According to the U.S. Department of Commerce, United States Census Bureau findings of 2010, the City of Port Angeles had 19,038 in total population. Of the total population, 8,459 live in households, and 4,808 are families residing in the city. The population density was 1,779.3 inhabitants per square mile (687.0 /km²). There were 9,272 housing units at an average density of 866.5 per square mile (334.6 /km²). The racial makeup of the city was 88.9% White, 0.8% African American, 3.2% Native American, 1.8% Asian, 0.2% Pacific Islander, 0.9% from other races, and 4.3% from two or more races. Hispanic or Latino of any race was 4.0% of the population.

There were 8,459 households out of which 25.7% had children under the age of 18 living with them, 39.9% were married couples living together, 11.8% had a female householder with no husband present, 5.1% had a male householder with no wife present, and 43.2% were non-families. 35.5% of all households were made up of individuals and 14.6% had someone living

alone who was 65 years of age or older. The average household size was 2.19 and the average family size was 2.79.

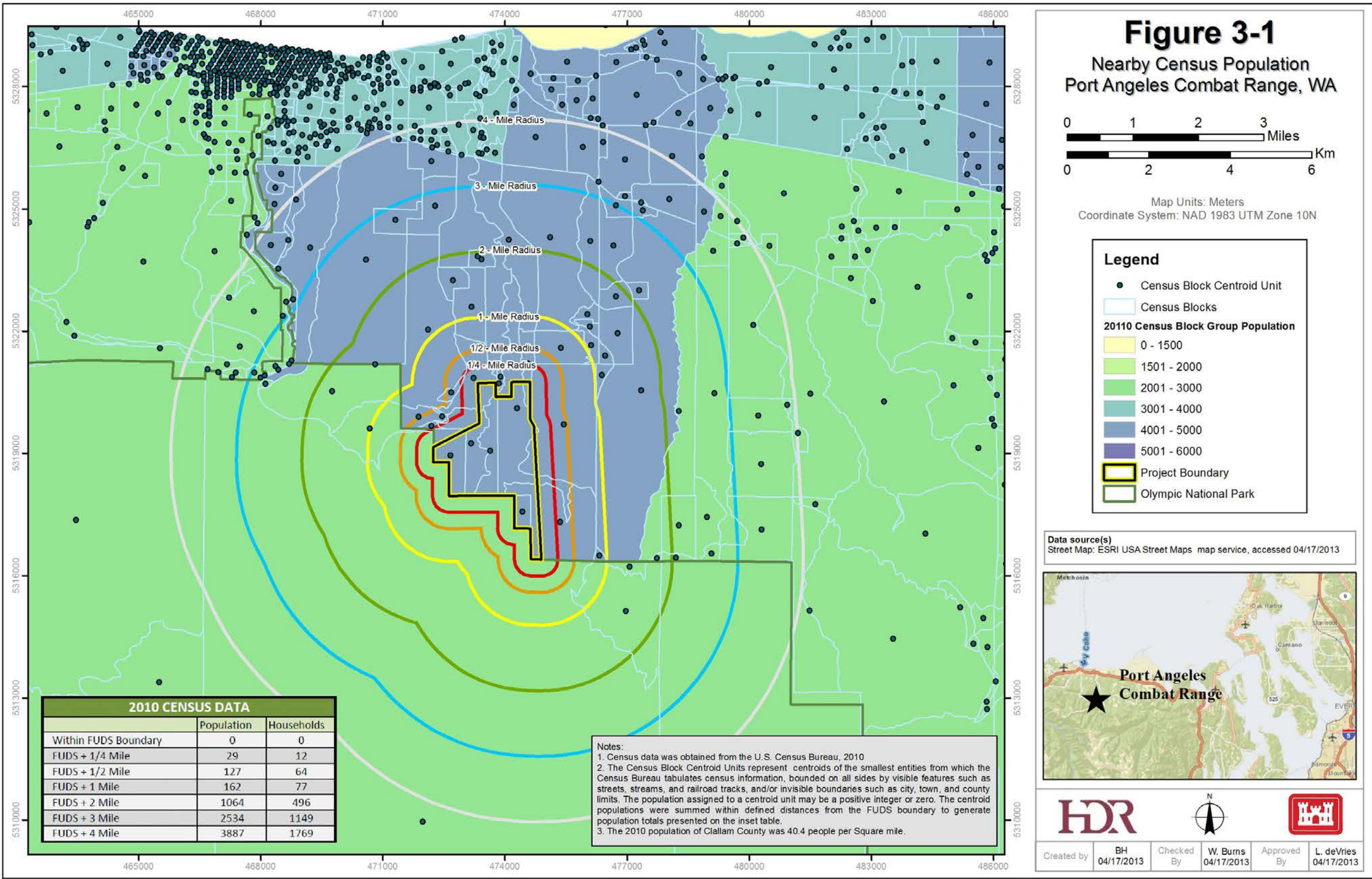
The median age in the city was 41.6 years. 20.6% of residents were under the age of 18; 9.7% were between the ages of 18 and 24; 23.4% were from 25 to 44; 28.3% were from 45 to 64; and 18% were 65 years of age or older. The gender makeup of the city was 48.6% male and 51.4% female.

3.2.2 Types of Business and Industry

Based on the 2007-2011 American Community Survey by the United States Census Bureau (USCB, 2011), the business industry in Clallam County is broken down below in **Table 3-1**.

Table 3-1: United States Census Bureau

Industry	Percent
Agriculture, forestry, fishing and hunting, and mining	2.2%
Construction	5.0%
Manufacturing	9.8%
Wholesale trade	1.5%
Retail trade	12.3%
Transportation and warehousing, and utilities	6.0%
Information	3.1%
Finance and insurance, and real estate and rental and leasing	4.7%
Professional, scientific, and management, and administrative and waste management services	7.8%
Educational services, and health care and social assistance	23.6%
Arts, entertainment, and recreation, and accommodation and food services	9.0%
Other services, except public administration	6.9%
Public administration	7.9%



This page intentionally left blank

3.2.3 Munitions Response Site and Adjacent Parcel Ownership

In order to gain access during the RI field investigation Right-of-Entry (ROE) forms will be sent to the landowners within, and adjacent to the PACR MRS. The ROE grants the USACE and its contractor permission to access the portions of the MRS that lies on private land. Parcels within the MRS are owned by State and Local government, and commercial and private landowners. **Table 3-2** and **Figure 3-2** present the parcel ownership.

Table 3-2: Parcel Ownership

Property Number	Property ID	Property Address
52904230010	47368	5051 DEER PARK RD PORT ANGELES, WA 98362
52904230020	47369	73 KLAHHANE RIDGE DR PORT ANGELES, WA 98363
52904230070	47374	154 KLAHHANE RIDGE DR PORT ANGELES, WA 98362
52904320020	47379	5285 DEER PARK RD PORT ANGELES, WA 98362
52904320030	47380	DEER PARK RD PORT ANGELES, WA 98362
52904320042	47381	DEER PARK RD PORT ANGELES, WA 98362
52904320052	47383	5455 DEER PARK RD PORT ANGELES, WA 98362
52904330000	47384	5455 DEER PARK RD PORT ANGELES, WA 98362
52904330025	47387	5555 DEER PARK RD PORT ANGELES, WA 98362
52904330075	47389	DEER PARK RD PORT ANGELES, WA 98362
52904330100	47390	n/a
52905130000	47401	MT PLEASANT RD PORT ANGELES, WA 98362
52905140000	47404	4874 DEER PARK RD PORT ANGELES, WA 98362
52905140200	47406	5038 DEER PARK RD PORT ANGELES, WA 98362
52905320000	47418	SNOW RIDGE LN PORT ANGELES, WA 98362
52905440000	47419	SNOW RIDGE LN PORT ANGELES, WA 98362

Table 3-2: Parcel Ownership

Property Number	Property ID	Property Address
52905440100	47420	DEER PARK RD PORT ANGELES, WA 98362
52905500030	47423	283 WILD ORCHID LN PORT ANGELES, WA 98362
52905500040	47424	283 WILD ORCHID LN PORT ANGELES, WA 98362
52905500050	47425	322 WILD ORCHID LN PORT ANGELES, WA 98362
52905500060	47426	325 WILD ORCHID LN PORT ANGELES, WA 98362
52905500070	47429	96 WILD ORCHID LN PORT ANGELES, WA 98362
52906410000	47479	SNOW RIDGE LN PORT ANGELES, WA 98362
52906430000	47481	MT PLEASANT RD PORT ANGELES, WA 98362
52907110000	47483	MT PLEASANT RD PORT ANGELES, WA 98362
52907410000	47485	MT PLEASANT RD PORT ANGELES, WA 98362
52908110000	47490	DEER PARK RD PORT ANGELES, WA 98362
52908140000	47492	DEER PARK RD PORT ANGELES, WA 98362
52908210000	47493	DEER PARK RD PORT ANGELES, WA 98362
52908410000	47495	DEER PARK RD PORT ANGELES, WA 98362
52909210000	47497	DEER PARK RD PORT ANGELES, WA 98362
52909220000	47498	DEER PARK RD PORT ANGELES, WA 98362
52909220100	47501	DEER PARK RD PORT ANGELES, WA 98362
52909220500	47505	DEER PARK RD PORT ANGELES, WA 98362
52916000000	47730	n/a
52917100000	47732	DEER PARK RD PORT ANGELES, WA 98362

3.2.4 Future Land Use

The future use of the PACR MRS is anticipated to be the same or very similar to the current use. The PACR will continue to be maintained as a protected watershed for the city of Port Angeles. Development in privately owned portions of the site should be anticipated. Future plans include the continuation of forest management, hunting, and possibly fish and wildlife conservation.

3.3 Cultural Resource Surveys

No cultural resources have been identified within the PACR. During the SI, The Washington Department of Archaeology and Historic Preservation (WDAHP) was contacted to determine if any new historical or cultural sites may have been identified within the PACR. The WDAHP recommended that consultation with nearby tribes and an archaeological survey be conducted. The USACE Seattle District completed an archaeological evaluation of the PACR and noted a "No Historic Properties Affected" determination. This determination was forwarded to the WDAHP, who concurred with the determination. A copy of the WDAHP concurrence letter is included with the SI report (Shaw, 2009).

3.4 Past Regulatory Activities

There have been no regulatory actions, with respect to MEC or MC, reported for the PACR.

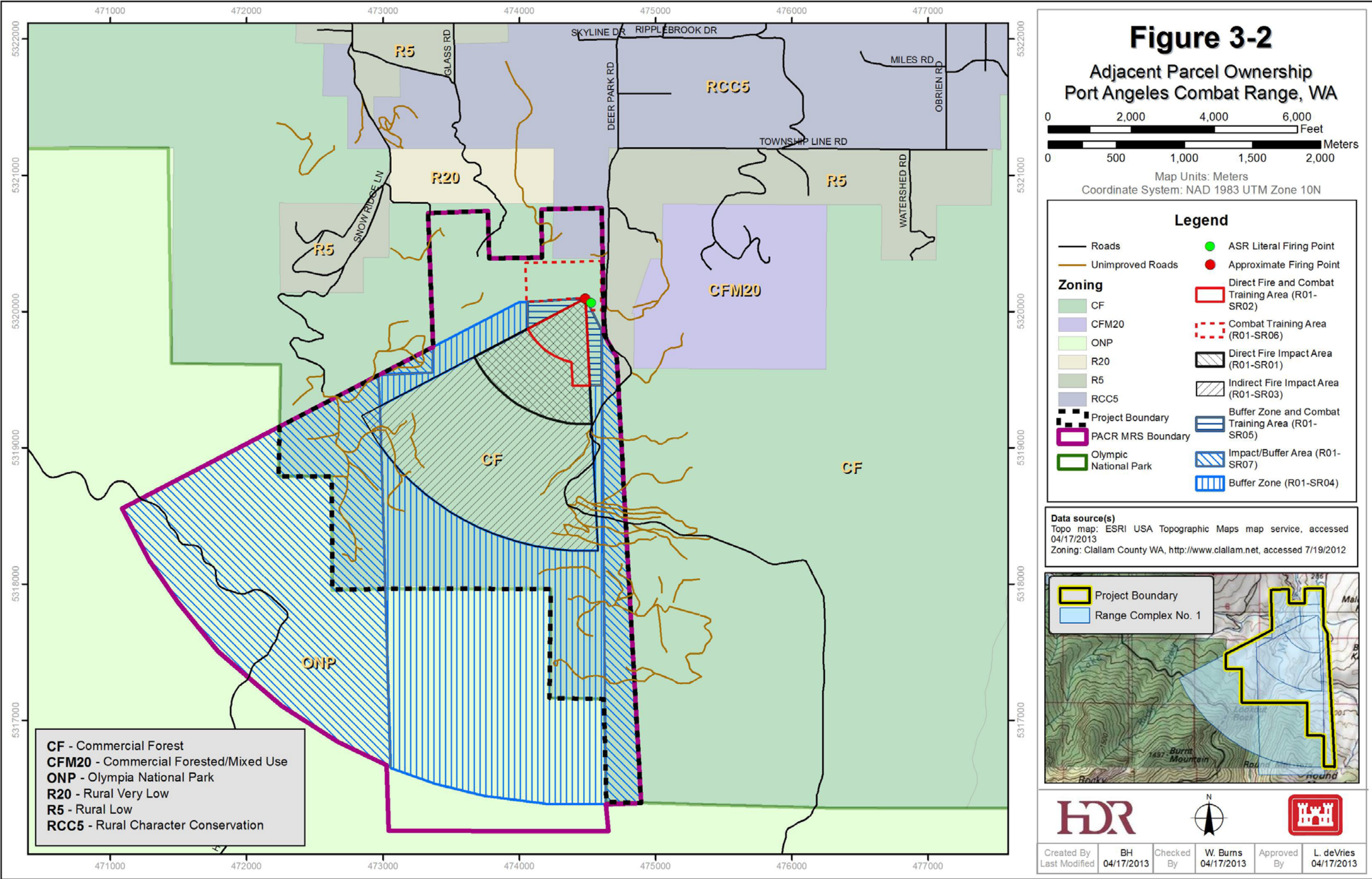
3.5 History of Community Involvement

Community interviews were conducted as part of the ASR efforts. Historic information was collected from residents, enlisted personnel that trained within the MRS, and other local points of contact that had information regarding the site. During the SI, an advertisement for a public meeting was published and a meeting was held. There was limited interest from the community at that time. During a meeting that occurred during December 2012 the City of Port Angeles and Clallam County voiced their interest in the project and indicated that the public be apprised of ongoing efforts.

3.6 Key Community Concerns

At this time, there have not been any significant concerns expressed.

This page intentionally left blank



This page intentionally left blank

4.0 PORT ANGELES COMBAT RANGE PUBLIC INVOLVEMENT PROGRAM

This final section of the PIP presents the USACE Public Involvement Program proposed for the PACR site, and lists the public involvement activities planned for this RI project.

4.1 Public Involvement Program

The Public Involvement Program is an integral part of the FUDS program. It provides the opportunity for dialogue between the USACE and the local groups and individuals interested, affected, and perceived to be.

The goals of the PIP include:

- Ensure that stakeholders understand that personal and property safety is the paramount concern during munitions response projects.
- Serve the community's information needs by keeping local residents, officials, and other stakeholders informed in a timely manner.
- Provide local residents, officials, and other stakeholders an opportunity to review and comment on studies being conducted, and on proposed remedial or removal response alternatives and decisions.
- Keep the public well informed of ongoing and planned public involvement activities associated with the project.
- Encourage and enable the public to get involved.
- Listen carefully to what the public is saying.
- Identify and deal responsively with public concerns.
- Change planned actions where the public comments or concerns have merit.
- Foster and maintain a climate of understanding and trust between stakeholders and the USACE by explaining to stakeholders how the USACE considers their comments, what USACE plans to do, and why the USACE reaches its decisions.

The target audiences for this plan include:

- Stakeholders made up of members of the general public who express an interest in PACR
- City and County agencies responsible for managing real estate within the PACR boundary.
- Interest groups
- Landowners
- Media
- Regulatory Agencies

The FUDS MMRP follows the CERCLA process. CERCLA requires certain public involvement activities to occur at specific milestones. **Table 4-1** summarizes the CERCLA requirements for public involvement (USACE, 2004b).

Table 4-1: CERCLA Requirements for Public Involvement

Community Relations Activities	Remedial Response Phases									
	PAE	SI	ASR	Pre-Remedial Investigation	RI	FS	Proposed Plan	Pre-Record of Decision	ROD	Remedial Design, Remedial Action, and O&M
Contact State/Local Officials	D	R	R		R	R			D	D
News Release	D	D	D		D	D	D			D
Workshops		D	D		D	D				
Community Interviews				D	D					
Community Relations Plan		R	R	R	R	R	R	R	R	R
Determine need for Restoration Advisory Board (RAB)					R					
Initiate and Maintain the Administrative Record	R	R	R	R	R	R	R	R	R	D
Establish an Information Repository and Inform the Public		R	R	R	R	R	R	R	R	
Publicize Technical Assistance Opportunities				R						
Fact Sheets	D	D	D	D	D	D	R			R
Public Notice			R		R		R		R	
Public Meeting			D				R			
Public Comment Period (30-60 days)			R				R			
Responsiveness Summary			R					R		
Revise Proposed Plan (if needed)								R		
Second Comment Period (30-60 days)								R		
Revise Community Relations Plan				R	R	R	R	R	R	R

Note:
PAE= Preliminary Assessment of Eligibility
SI= Site Inspection
RI= Remedial Investigation
FS= Feasibility Study
ROD= Record of Decision
O&M= Operation and Maintenance
D= Desirable
R=Required
ASR= Archives Search Report

This page intentionally left blank

4.2 Administrative Record and Information Repository

An Administrative Record and Information Repository (AR/IR) will be created for the PACR project. The AR/IR will include public comments and documents that demonstrate the public's opportunity to participate in and comment on the selection of the response action and documents that form the basis for selection of the response action. Specific documents that will be maintained by the administrative record in the information repository are presented below:

- Any comments received from the Public
- The Final Remedial Investigation and Feasibility Study Report
- The Proposed Plan for the remedial action
- The Record of Decision Document

If any of the reports contain project sensitive information that pose a significant risk to the public (i.e. specific locations of munitions items) a version approved for public release by the USACE may be issued (USACE, 2004b).

In addition to the required documents above, the following documents may be added to the administrative record at the discretion of the USACE:

- Community Involvement Plan
- Any newspaper articles or public notices with affidavit of publication
- Documentation of any public meetings

The AR/IR will be established at the City of Port Angeles library located at:

2210 South Peabody Street
Port Angeles, WA 98362
Phone: (360) 417-8500
North Olympic Library System
Website: nols.org

Standard Form 298 (rev 8/98), prescribed by ANSI Standard Z39.18 will be utilized as the document control form when information is added to the AR/IR (**Appendix L**).

4.3 Public Involvement Activities

To meet the goals of the PIP, different activities are performed at different stages of the PACR RI project. Fifteen various public involvement activities proposed for the PACR RI project are presented below.

Activity 1: Contact Federal/State/Local Officials

Objective: To notify government entities that a project is being initiated and to obtain preliminary input, obtain contact information and address any immediate concerns.

Method: An in person meeting is preferred; however, a teleconference may be substituted.

Timing: Completed during a meeting in December 2012. Meeting minutes are included in **Appendix L**.

Activity 2: Distribute Fact Sheet

Objective: To provide a simple and comprehensive summary of the project to stakeholders or other interested parties.

Method: A double-sided, 8 ½ x 11 inch fact sheet will be prepared and can be distributed by any means delegated by the USACE. Fact Sheets may be distributed via mail, posted on an internet website, provided as handouts during public meetings, posted in public locations such as a post office, etc.

Timing: To be distributed as if appropriate throughout the life cycle of the project.

Activity 3: Send Right-of-Entry Permission Forms

Objective: To obtain permission to enter property within the MRS

Method: The USACE Seattle District Real Property Office will distribute letters to the landowners. A USACE Real Property office representative may follow up via phone or in person if there is no response received via mail.

Timing: Approximately 4-5 months prior to the commencement of the RI field work.

Activity 4: An Advertisement Seeking Public Interest in the PACR RI Project

Objective: To provide a means in which the public can show interest. The objective of the advertisement is to seek public interest in PACR.

Method: An advertisement will be placed in a local newspaper.

Timing: Prior to completion of the work plan documents.

Activity 5: Community Interviews

Objective: To obtain additional information about the PACR MRS or to document any stakeholder concerns

Method: An in person interview is preferred; however, it may be conducted via telephone or email.

Timing: As necessary.

Activity 6: Establish an Administrative Record and Information Repository

Objective: To establish a public record for the project documents and provide a location that the public can easily gain access to the documents.

Method: The City of Port Angeles Library will be utilized as the Information Repository.

Timing: Commencement of the project.

Activity 7: An advertisement Seeking the Desire to Form a RAB (if appropriate)

Objective: To provide the community with a way to become actively involved in the decision making process and participate in PACR.

Method: An advertisement will be placed in a local newspaper. If more than 50 people respond to the advertisement seeking interest from the public, an advertisement seeking the desire to form a RAB (if appropriate) will be placed in a local newspaper.

Timing: After the advertisement seeking general project interest from the public.

Activity 8: Support RAB Meetings Quarterly or Greater (if appropriate)

Objective: To provide a scheduled gathering to promote public involvement (if appropriate).

Method: RAB meetings will be held if and when the committee is established. The meetings will be open to the public. Public notices and news releases about the meetings will be placed in the local paper, and a meeting announcement will be sent to a mailing list of interested parties/stakeholders. Minutes of the RAB meeting are written and mailed to this mailing list.

Timing: To Be Determined dependent on need and project progress.

Activity 9: Support a City Council Meeting to Brief the Project Prior to the RI Field Work

Objective: To provide the City Council members a platform for communication and awareness.

Method: A meeting at a public location will be held with City Council members to brief them on PACR field investigations. This will create a stage for dialog and feedback.

Timing: Prior to the commencement of the field investigations.

Activity 10: News Release (if appropriate)

Objective: To notify the public about PACR project related activities to mitigate potential concerns before they arise.

Method: A press release may be issued to a local television station, radio station or newspaper. All external communication to the media will occur through the USACE Seattle District Public Affairs Office.

Timing: As necessary.

Activity 11: Support a Public Meeting Prior to the Commencement of the RI Field Work (if appropriate)

Objective: To provide the public with a platform for communication and awareness.

Method: A meeting at a public location will be held with the public to brief them on PACR field investigations. This will provide an opportunity to inform the public of project progress and the planned investigation.

Timing: To be determined.

Activity 12: A Public Meeting to Present the Proposed Plan

Objective: To present the Proposed Plan for remedial activities to the public and obtain any preliminary comments.

Method: A meeting at a public location will be held.

Timing: Upon completion of the Draft Final Proposed Plan.

Activity 13: An Advertisement for the Public Comment Period for the Proposed Plan Document

Objective: To notify the public about the 30 day Public Comment Period and to solicit input from the public regarding the proposed remediation plan.

Method: An advertisement will be placed in a local newspaper.

Timing: Upon completion of the Draft Final Proposed Plan.

5.0 REFERENCES

- Department of Defense (DoD). (2011). *MMRP Inventory in the Defense Environmental Programs Annual Report to Congress Fiscal Year 2011*. Department of Defense.
- ESTCP. (2011). *Environmental Security Technology Certification Program (ESTCP) Data Collection Report EM61-MK2 Data Collection and Analysis at the Port Angeles Combat Range, Port Angeles, WA, September*. Environmental Security Technology Certification Program.
- Naval Explosives Ordnance Disposal Facility Center (NEODFC.) (1986). *(NEODFC) Range Clearance Technology Assessment. Final. NAVEODTECHCEN Technical Report TR-275*. . Indian Head, Maryland: Naval Explosives Ordnance Disposal Facility Center .
- Shaw. (2009). *Site Inspection Report Port Angeles Combat Range*. Shaw Environmental, Inc.
- USACE. (1993). *An Inventory Project Report (INPR)*. U.S. Army Corps of Engineers.
- USACE. (1996, September). *Archives Search Report, Port Angeles Combat Range, Clallam County, Washington, Prepared by the U.S. Army Corps of Engineers, Rock Island District. September*. USACE.
- USACE. (2004). *Archives Search Report Supplement, Port Angeles Combat Range, Clallam County, Washington, Prepared by the U.S. Army Corps of Engineers, Rock Island District*. . U.S. Army Corps of Engineers.
- USACE. (2004, 04 09). *Engineering Pamphlet (EP) EP 1110-3-8, Public Participation in the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS)*. Retrieved 2012, from USACE:
<http://www.nan.usace.army.mil/business/buslinks/raritan/pdf/ep1110-3-8.pdf>
- USACE. (2004b). *ER200-3-1. Environmental Quality Formerly Used Defense Site (FUDS) Program Policy. CEMP-D. May 10*. USACE.
- USCB. (2010). *U.S. Census Bureau State and County QuickFacts*. Retrieved 2011, from U.S. Census Bureau: <http://quickfacts.census.gov/qfd/states/00000.html>
- USCB. (2011). *American Community Survey, Clallam County, WA 2007-2011* . Retrieved 2013, from United States Census Bureau: <http://www.census.gov/acs/www/>

This page intentionally left blank

Appendix A

Acronyms and Abbreviations

This page intentionally left blank

AR	Administrative Record
ASR	Archive Search Report
CAIS	Chemical Agent Identification Sets
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWM	Chemical Warfare Materiel
DoD	Department of Defense
ESTCP	Environmental Security Technology Certification Program
FS	Feasibility Study
FUDS	Formerly Used Defense Site
HDR	HDR Environmental, Operations and Construction, Inc.
INPR	Inventory Project Report
IR	Information Repository
KM	Kilometer
MC	Munitions Constituents
MM	Millimeter
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
NAD	North American Datum
NCP	National Contingency Plan
NPS	National Park Service
O&M	Operations and Management
ONP	Olympic National Park
PACR	Port Angeles Combat Range
PAE	Preliminary Assessment of Eligibility
PIP	Public Involvement Plan
PP	Proposed Plan
RAB	Restoration Advisory Board
RI	Remedial Investigation
ROD	Record of Decision
ROE	Right of Entry
SI	Site Inspection
USACE	United States Army Corps of Engineers
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
WA	State of Washington
WDAHP	Washington Department of Archaeology and Historic Preservation

This page intentionally left blank

Appendix B

Government Officials Contact List

This page intentionally left blank

Federal Legislators

Senator Patty Murray

Washington, D.C. Office
154 Russell Senate Office Building
Washington, D.C. 20510
Phone: (202) 224-2621

Senator Maria Cantwell

Washington, D.C. Office
311 Hart Senate Office Building
Washington, D.C. 20510
Phone: (202) 224-3441

Congressman Derek Kilmer District 6

Washington, D.C. Office
1429 Longworth House Office Building
Washington, DC 20515
Phone: (202) 225-5916

Washington State Government

Governor Jay Inslee

Governor Jay Inslee
Office of the Governor
PO Box 40002
Olympia, WA 98504-0002
Phone: (360) 902-4111

State Senator Jim Hargrove

Port Angeles District Office
535 East 1st Street
P.O. Box 2496
Port Angeles, WA 98362
Phone: (360) 457-2520

Clallam County Officials

Clallam County Commissioners

223 East 4th Street, Suite 4
Port Angeles, Washington 98362-3000
Phone: (360) 417-2233

Board of County Commissioners

Jim McEntire, District 1, East County
Mike Chapman, District 2, Central County
Mike Doherty, District 3, West County

City of Port Angeles Officials

Mayor Cherie Kidd

Port Angeles City Hall
321 East 5th Street
Port Angeles, WA 98362
Phone: (360) 417-4630

Port Angeles City Council

Port Angeles City Hall
321 East 5th Street
Port Angeles, WA 98362
Phone: (360) 417-4630

City Council Members

Deputy Mayor Brad Collins
Councilmember Sissi Bruch
Councilmember Dan Di Guilio
Councilmember Patrick Downie
Councilmember Max Mania
Councilmember Brooke Nelson

Appendix C

Regulatory Agencies and Interested Parties

This page intentionally left blank

Regulatory Agencies and Interested Parties

U.S. Army Corps of Engineers

Project Management: Kansas City District

Edwin Louis
U.S. Army Corps of Engineers
Kansas City District
601 E. 12th Street
Kansas City, Mo 64106
Phone: (816) 389-3563
Edwin.G.Louis@usace.army.mil

Military Munitions Design Center: Omaha District

John Miller
U.S. Army Corps of Engineers
Omaha District
1616 Capitol Ave., Ste. 9000
Omaha, NE 68102
Phone: (402) 995-2735
john.m.miller@usace.army.mil

Regional: Seattle District

Mark Murphy
U.S. Army Corps of Engineers
Seattle District
PO Box 3755
4735 E Marginal Way
Seattle, WA 98134-2385
Phone: (206) 316-3925
mark.s.murphy@usace.army.mil

Rodney Taie
U.S. Army Corps of Engineers
Seattle District
PO Box 3755
4735 E Marginal Way
Seattle, WA 98134-2385
Phone: (206) 316-3925
Phone: (206) 764-3498
rodney.t.taie@usace.army.mil

**U.S. Environmental Protection Agency
Region 10**

Aaron Lambert
U.S.EPA Region 10
1200 6th Avenue, Suite 900
Seattle, WA 98101
Phone: (206) 553-1200

Washington Department of Ecology

Barry Rogowski
Washington Department of Ecology
300 Desmond Drive
Lacey, WA 98503
Phone: (360) 407-7236

Ronnie Johnson
Washington Department of Ecology
300 Desmond Drive
Lacey, WA 98503
Phone: (360) 407-6487

City of Port Angeles

Glenn Cutler
321 East 5th Street
Port Angeles, WA 98362
Phone: (360) 417-4752

Clallam County

Jen Garcelon
Clallam County Public Works Department
223 E. Fourth St., Suite 7
Port Angeles, WA 98362
Phone: (360) 417-2347

RAB Administrative Officer

(To be determined, if required)

Appendix D

Restoration Advisory Board Members

(This information will be provided only if the formation of a RAB is required)

This page intentionally left blank

Appendix E

Media Contact List

This page intentionally left blank

Television Stations

KIRO CBS Channel 7
2807 3rd Avenue
Seattle, WA 98121
Phone: (206) 728-7777
Website: www.kirotv.com

KOMO ABC
140 4th Avenue North #140
Seattle, WA 98109
Phone: (206) 404-4000
Website: www.komonews.com

KING Channel 5
333 Dexter Avenue North
Seattle, WA 98109
Phone: (206) 448-5555
Website: www.king5.com

KCPQ FOX
1813 Westlake Avenue North
Seattle, WA 98109
Phone: (206) 674-1313
Website: www.q13fox.com

Radio Stations

KNWP 90.1 FM Northwest Public Radio
The Edward R. Murrow College of Communication
Washington State University
PO Box 642530
Pullman, WA 99164-2530
Phone: (800) 842-8991
Website: www.nwpr.org

KONP 1450 AM News/Talk Radio
Radio Pacific, Inc.
PO Box 1450
Port Angeles, WA 98362
Phone: (360) 457-1450
Website: www.konp.com

Newspapers

Peninsula Daily News
305 West First St.
P.O. Box 1330
Port Angeles, WA 98362
Phone: (360) 452-2345
Website: www.peninsuladailynews.com

Appendix F

Definitions

This page intentionally left blank

Anomaly – Any identified subsurface mass that may be geologic in origin, unexploded ordnance (UXO), or some other man-made material. Such identification is made through geophysical investigation and reflects the response of the sensor used to conduct the investigation. (Handbook on the Management of Munitions Response Actions, Interim Final, EPA, May 2005).

Anomaly Avoidance – Techniques employed on property known or suspected to contain unexploded ordnance, other munitions that may have experienced abnormal environments (e.g., discarded military munitions), munitions constituents in high enough concentrations to pose an explosive hazard, or chemical agents, regardless of configuration, to avoid contact with potential surface or subsurface explosive or CA hazards, to allow entry to the area for the performance of required operations. (AF Manual 91-201 and DOD 6055.09-M).

Applicable or Relevant and Appropriate Requirements – Applicable requirements are cleanup standards, standards of control, and other substantive environmental protection requirements promulgated under Federal or state environmental law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance found at a CERCLA site. Relevant and appropriate requirements are cleanup standards that, while not “applicable,” address situations sufficiently similar to those encountered at a CERCLA site where their use is well suited to the particular site. (National Oil and Hazardous Substances Pollution Contingency Plan [NCP], 40 CFR Part 300, July 2005).

Chemical Warfare Materiel (CWM) – Items generally configured as a munition containing a chemical compound that is intended to kill, seriously injure, or incapacitate a person through its physiological effects. CWM includes V- and G-series nerve agents or H-series (mustard) and L-series (lewisite) blister agents in other-than-munition configurations; and certain industrial chemicals (e.g., hydrogen cyanide [AC], cyanogen chloride [CK], or carbonyl dichloride [called phosgene or CG]) configured as a military munition. CWM does not include riot control devices, chemical defoliants and herbicides, industrial chemicals (e.g., AC, CK, or CG) not configured as a munition, smoke and other obscurant producing items, flame and incendiary producing items, or soil, water, debris or other media contaminated with low concentrations of chemical agents where no CA hazards exist. (MRSP, 32 CFR Part 179, October 2005).

CWM contains the following four subcategories:

1. *CWM, explosively configured – All UXO or DMM that contain a CA fill and any explosive component. Examples are M55 rockets with CA, the M23 VX mine, and the M360 105-mm GB artillery cartridge.*
2. *CWM, non-explosively configured – All UXO or DMM that contain a CA fill but that do not contain any explosive components. Examples are any chemical munitions that do not contain explosive components and VX or mustard agent spray canisters.*
3. *CWM, bulk container – All discarded (e.g., buried) non-munitions-configured containers of CA (e.g., a ton container) and CAIS K941, toxic gas set M-1 and K942, toxic gas set M-2/E11.*
4. *Chemical Agent Identification Sets (CAIS) – Military training aids containing small quantities of various CA and other chemicals. All forms of CAIS are scored the same in this rule, except CAIS K941, toxic gas set M-1; and CAIS K942, toxic gas set M-2/E11, which are considered forms of CWM, bulk container, due to the relatively large quantities of agent contained in those types of sets.*

Closed Range – A military range that has been taken out of service as a range and that either has been put to new uses that are incompatible with range activities or is not considered by the military to be a potential range area. A closed range is still under the control of a Component. (MGDERP, September 2001).

Conceptual Site Model (CSM) – The CSM is a description of a site and its environment that is based on existing knowledge. It describes sources of MEC or hazardous, toxic, and radioactive waste at a site; actual, potentially complete, or incomplete exposure pathways; current or reasonably anticipated future land use; and potential receptors. The source-receptor interaction is a descriptive output of a CSM. The CSM serves as a planning instrument, a modeling and data interpretation aid, and a communication device among the Project Team.

Defense Sites – Locations that are or were owned by, leased to, or otherwise possessed or used by the Department of Defense. The term does not include any operational range, operating storage or manufacturing facility, or facility that is used for or was permitted for the treatment or disposal of military munitions. (10 U.S.C. 2710(e)(1)).

Components – The Office of the Secretary of Defense (OSD), the Military Departments, the Defense Agencies, the Department Field Activities, and any other Department organizational entity or instrumentality established to perform a government function. (MRSP, 32 CFR Part 179, October 2005).

Direct Impact Area – An area where stationary or towed targets are fired upon by artillery or mortars.

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal, or removed from storage in a military magazine or other storage area, for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of consistent with applicable environmental laws and regulations. (10 U.S.C. 2710(e)(2)).

Explosive Ordnance Disposal (EOD) – The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded explosive ordnance. It may also include explosive ordnance that has become hazardous by damage or deterioration.

Explosive Ordnance Disposal (EOD) Personnel – Active duty military personnel of any military service branch that are trained in the detection, identification, field evaluation, safe rendering, recovery, and final disposal of explosive ordnance and of other munitions that have become an imposing danger, for example, by damage or deterioration. (Handbook on the Management of Munitions Response Actions, Interim Final, EPA, May 2005).

Facility – A building, structure, or other improvement to real property, in relation to work classification. (10 U.S.C. 2801)

Formerly Used Defense Sites (FUDS) – Facility or site (property) that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to the contamination by hazardous substances. By the DoD Environmental Restoration Program (ERP) policy, the FUDS program is limited to those real properties that were transferred from DoD control prior to 17 October 1986. FUDS properties can be located within the 50 States, District of Columbia, Territories, Commonwealths, and possessions of the United States. (FUDS Program Policy, ER 200 3-1, May 2004).

Hazardous Substance – (A) Any substance designated pursuant to Section 1321(b)(2)(A) of title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to

Section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act [42 U.S.C. 6921] (but not including any waste the regulation of which under the Solid Waste Disposal Act [42 U.S.C. 6901 et seq.] has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of title 33, (E) any hazardous air pollutant listed under Section 112 of the Clean Air Act [42 U.S.C. 7412], and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to Section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). (CERCLA, 42 U.S.C. § 9601 et seq.).

In-Direct Impact Area - An area that is fired upon with mortars that has a general area of impact but no defined targets.

Installation - (as defined by the Restoration Management Information System [RMIS] Data Element Dictionary for a Federal Facility Identification [FFID]) – The FFID number is a unique identifier, assigned to an installation/property in RMIS. The 14-character aggregate string is used in RMIS as the key column for each data table and is used to track all associated records for each installation. An installation may have a single range or multiple ranges (and each range may have more than one site contained within its boundaries) and a single or multiple sites, not associated with a range. (Management Guidance for the Defense Environmental Restoration Program, September 2001).

Material Potentially Presenting an Explosive Hazard (MPPEH) - Material potentially containing explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or material potentially containing a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated with munitions production, demilitarization or disposal operations). Excluded from MPPEH are munitions within DoD's established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions.

Military Installation – A base, camp, post, station, yard, center, or other activity under the jurisdiction of the Secretary of a Military Department, or, in the case of an activity in a foreign country, under the operational control of the Secretary of a military department or the Secretary of Defense, without regard to the duration of operational control. (10 U.S.C. 2801).

Military Munitions – All ammunition products and components produced for or used by the Armed Forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, and demolition charges; and devices and components of any item thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, nuclear components, other than non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization

operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) have been completed. (10 U.S.C. 101(e)(4)).

Military Range – Designated land and water areas set aside, managed, and used to research, develop, test, and evaluate military munitions, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas. (40 CFR 266.201).

Munitions and Explosives of Concern (MEC) – Military munitions that are 1) unexploded ordnance, as defined in 10 U.S.C. 101(e)(5); 2) abandoned or discarded, as defined in 10 U.S.C. 2710(e)(2); 3) MC (e.g., TNT, RDX) present in soil, facilities, equipment, or other materials in high enough concentrations so as to pose an explosive hazard. (MRSP, 32 CFR Part 179, October 2005).

Munitions Constituent (MC) – Any material that originates from UXO, DMM, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. 2710(e)(4)).

Munitions Debris (MD) – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. (DoD 6055.09-M).

Munitions Response – Response actions, including investigation, removal actions, and remedial actions, to address the explosives safety, human health, or environmental risks presented by UXO, DMM, or MC or to support a determination that no removal or remedial action is required. (MRSP, 32 CFR Part 179, October 2005).

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former ranges and munitions burial areas. A munitions response area is comprised of one or more munitions response sites. (MRSP, 32 CFR Part 179, October 2005).

Munitions Response Site (MRS) – A discrete location within an MRA that is known to require a munitions response. (MRSP, 32 CFR Part 179, October 2005).

Operational Range – A range that is under the jurisdiction, custody, or control of the Secretary of Defense and that is used for range activities, or although not currently being used for range activities, that is still considered by the Secretary to be a range and has not been put to a new use that is incompatible with range activities. (10 U.S.C. 101(e)(3)).

Ordnance and Explosives (OE) – Military munitions that have been abandoned, expelled from demolition pits or burning pads, lost, discarded, or buried. These include dud-fired UXO, soil presenting explosive hazards, and buildings with explosives residues that present explosion hazards. Note: The term OE has been replaced with the term Munitions and Explosives of Concern (MEC) in more recent publications.

Other than Operational Range – A closed, transferred, or transferring range.

Pollutant and Contaminant – These terms include, but are not be limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring; except that the term pollutant or contaminant shall not include petroleum, including crude oil or any fraction thereof which is not otherwise

specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of paragraph (14) and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas). (CERCLA, 42 U.S.C. § 9601 et seq.).

Range Activities – Research, development, testing, and evaluation of military munitions, other ordnance, and weapons systems; and the training of members of the Armed Forces in the use and handling of military munitions, other ordnance, and weapons systems. (10 U.S.C. 101(3)(2)).

Relative Risk – The evaluation of individual sites to determine high, medium, or low relative risk to human health and the environment, based on contaminant hazards, migration pathways and receptors, in accordance with the DoD's Risk-Based Site Evaluation Primer. (MGDERP, September 2001).

Removal – The cleanup or removal of released hazardous substances from the environment. Such actions may be taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. The term includes, in addition, without being limited to, security fencing or other measures to limit access, provision of alternative water supplies, temporary evacuation and housing of threatened individuals not otherwise provided for, action taken under Section 9604(b) of this title, and any emergency assistance which may be provided under the Disaster Relief and Emergency Assistance Act [42 U.S.C. 5121 et seq.] The requirements for removal actions are addressed in 40 CFR §§300.410 and 300.415. The three types of removals are emergency, time-critical, and non-time critical removals. (CERCLA, 42 U.S.C. § 9601 et seq.).

There are three types of removals:

1. **Emergency** – *Emergency removal or response is performed when an immediate or imminent danger to public health or the environment is present and action is required within hours. Trained responders identify the explosive threat and make the decision as to whether the munitions and explosive of concern should be moved or blown in place and ensure the threat is removed safely and expeditiously.*
2. **Time-critical** – *A response to a release or threat of release that poses such a risk to public health (serious injury or death), or the environment, that cleanup or stabilization actions must be initiated within six months.*
3. **Non-time critical** – *An action initiated in response to a release or threat of a release that poses a risk to human health and welfare, or the environment. Initiation of removal cleanup actions may be delayed for six months or more.*

Risk Reduction – The movement of any site from a higher to lower relative risk category as a result of natural attenuation, interim remedial, remedial, or removal actions taken. (DoD Instruction 4715.7, Environmental Restoration Program, April 1996).

Site (as defined in the Restoration Management Information System Data Element

Dictionary for a SITE ID) – A unique name given to a distinct area of an installation containing one or more releases or threatened releases of hazardous substances treated as a discreet entity or consolidated grouping for response purposes. Includes any building, structure, impoundment, landfill, storage container, or other site or area where a hazardous substance was or has come to be located, including formerly used sites eligible for building

demolition/debris removal. Installations and ranges may have more than one site. (MGDERP, September 2001).

Stakeholder – Groups or individuals who were interested in, concerned about, affected by, who had a vested interest in, or would be involved in the munitions response at an MRA/MRS.

Transferred Range – A property formerly used as a military range that is no longer under military control and had been leased by the DoD, transferred, or returned from the DoD to another entity, including federal entities. This includes a military range that is no longer under military control but was used under the terms of a withdrawal, executive order, special-use permit or authorization, right-of-way, public land order, or other instrument issued by the federal land manager. (MGDERP, September 2001).

Transferring Range – A military range that is proposed to be transferred or returned from the DoD to another entity, including federal entities. This includes a military range that is used under the terms of a withdrawal, executive order, act of Congress, public land order, special-use permit or authorization, right-of-way, or other instrument issued by the federal land manager or property owner. An operational or closed range will not be considered a “transferring range” until the transfer is imminent. (MGDERP, September 2001).

Unexploded Ordnance (UXO) – Military munitions that have been primed, fuzed, armed, or otherwise prepared for action and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material, and remain unexploded either by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5)).

UXO Technicians – Personnel who are qualified for and filling Department of Labor, Service Contract Act, Directory of Occupations, contractor positions of UXO Technician I, UXO Technician II, and UXO Technician III. (Department of Defense Explosive Safety Board TP18, December 2004).

X-ray Fluorescence (XRF)- Analytical method that uses x-ray tubes to irradiate samples with x-rays. When an atom absorbs the source x-rays, the incident radiation dislodges electrons from the innermost shells of the atom, creating vacancies. The electron vacancies are filled by electrons cascading in from outer electron shells. Electrons in outer shells have higher energy states than inner shell electrons, and the outer shell electrons emit energy as they cascade down into the inner shell vacancies. This rearrangement of electrons results in emission of x-rays character.

Appendix G

Meeting Locations

This page intentionally left blank

Possible Public and Restoration Advisory Board Meeting Locations

Port Angeles City Hall

321 East 5th Street
Port Angeles, WA 98362
Phone: (360) 457-0411

Vern Burton Community Center

308 East 4th Street
Port Angeles, WA 98362
Phone: (360) 417-4550

North Olympic Library

2210 South Peabody Street
Port Angeles, WA 98362
Phone: (360) 417-8500

Port Angeles School District

216 East 4th Street
Port Angeles, WA 98362
Phone: (360) 457-8575

Note: Currently, a Restoration Advisory Board has not been established for the PACR project. If it determined one is necessary, the above possible meeting locations may be used.

This page intentionally left blank

Appendix H

Fact Sheet

This page intentionally left blank

Remedial Investigation/Feasibility Study Formerly Used Defense Sites Program Port Angeles Combat Range

FACT SHEET

The U.S. Army Corps of Engineers

- Is dedicated to protecting human health and the environment by addressing areas impacted by historic munitions use
- Seeks input from the community and other interested Stakeholders throughout the Remedial Investigation and Feasibility Study process
- Will characterize the nature and extent of munitions related contamination to make informed risk management decisions and to select the appropriate remedial options
- Will establish an Administrative Record at the Port Angeles Main Library to make the work planning, report, proposed plan and record of decision documents available to the public

For More Information Please Contact:

U.S. Army Corps of Engineers
Seattle District
Public Affairs Office
PO Box 3755
Seattle, WA 98124-3755
Phone: (206) 764-3750
Email: paoteam@nws02.usace.army.mil



**US Army Corps
of Engineers®**

Formerly Used Defense Sites

During the past 200 years, some activities supporting military readiness have resulted in the need for environmental cleanup within the United States and its territories. Formerly Used Defense Sites (FUDS) are properties used by the military prior to October 1986 to train and support Soldiers, Airmen, Sailors, and Marines as well as to test new weapons and warfare capabilities. When no longer needed, many of these properties were cleaned up according to the best practices available at the time and then transferred to other owners such as private individuals or federal, state, tribal or local government entities. Congress created the FUDS program in 1986. The Army oversees the program for the Department of Defense (DoD) utilizing the Corps of Engineers to identify eligible properties, investigate their condition and manage required cleanup. Teams from Corps' districts consult with state environmental and health offices, the U.S. Environmental Protection Agency, landowners and the public while performing the work.

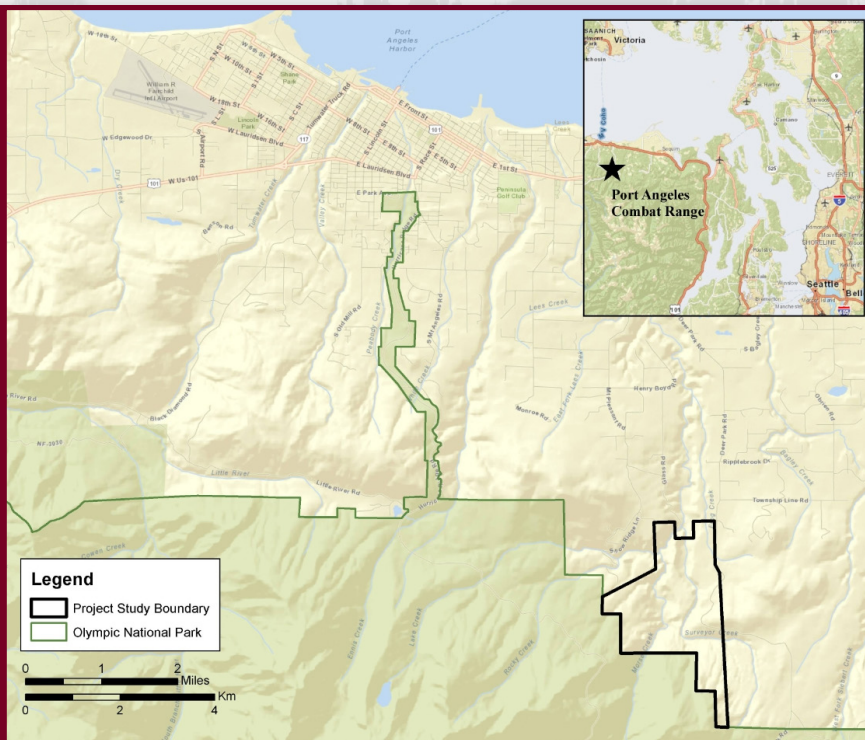
Project Objectives

The project objectives are to determine the nature (types and condition of munitions) and the extent of areas impacted by munitions and related contamination to be used for subsequent remedial actions, and to develop a baseline explosive hazard and MC risk assessment to determine the threat to human health and the environment.

Site Description

The Port Angeles Combat Range (PACR) is located approximately 60 miles northwest of Seattle, Washington and 7 miles southeast of the City of Port Angeles, in Clallam County, Washington. The area being investigated is approximately 1,628 acres north of and adjacent to the Olympic National Park. The terrain is predominantly mountainous with steep slopes and heavy coniferous and deciduous vegetation.

Project Site



Site History

In early 1943, the 115th Cavalry Squadron (mechanized) requested that land be leased in the area of Port Angeles, Wash., for use as a ground-to-ground combat range. The range was intended to be used for tactical firing problems and short-range known distance firing (200 to 300 yards). Through leases and use permits, approximately 1,600 acres were obtained within Sections 5, 8, and 17 within Township 29 North, Range 5 West for use as the PACR. The Inventory Project Record indicated the range was used for weapons practice with 37mm and 75mm projectiles, 60mm and 81mm mortars, and various small arms. The Archives Search Report also indicated that there were reports that mortars and land mines were used at the PACR; however, there is no definitive evidence that land mines with energetics were used at the FUDS. There were no buildings or improvements other than a spotting tower. Troops were encamped at the Port Angeles Fair Grounds/Conservation Corps Camp.

In April and May 1944, the range was declared excess and all leases and permits were canceled. Two young boys were killed in August 1948 when a 37mm shell exploded while they were cutting some downed timber within the former range. The 37mm shell was embedded in a log they were sawing. Immediately after the death of the two boys, the Army initiated the dedudiving of the area expected to be contaminated. On May 7, 1949, a Certificate of Clearance was issued noting that approximately 775 acres had been cleared of dangerous/explosive material. Subsequent clearances of the PACR occurred in 1952, 1955, 1956, and 1957, however they were not completed to the standards implemented today. The exact locations of these investigations are not documented.

Remedial Investigation and Feasibility Study Process

The Army follows the Remedial Investigation/Feasibility Study (RI/FS) process that is described in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). The overall process is summarized below:

- **Scoping:** Review available information from past site use, clearance efforts, and planned future use of the site to develop a comprehensive plan for investigating the nature and extent of munitions and the hazard posed by munitions items that may remain at the site.
- **Community Relations:** Obtain input from stakeholders and document community relations activities in a community relations plan, and establish an administrative record.
- **Remedial Investigation:** Conduct the remedial investigation.
- **Feasibility Study:** Evaluate various clean up options and their based on criteria of protecting human health and the environment, compliance with environmental regulations, long and short term effectiveness, cost and community acceptance. The ultimate goal of the study is to achieve no further action. Land use controls may be implemented if no further action cannot be achieved.
- **Proposed Plan:** Describe the remedial alternatives and discuss the rationale supporting the preferred clean up alternative. There will be a 30 day public comment period and an opportunity for a public meeting.
- **Record of Decision:** Consideration of public comments, provide a summary of comments and responses, and document the selected remedy. The selected remedial design/action will be implemented at a later time.

Proposed Schedule

- **Fall 2013**
Finalization of the Work Planning Documents
- **Fall 2013**
Field Investigation
- **Spring 2014**
RI/FS Reports:
- **Summer 2014**
Proposed Plan and Public Comment Period
- **Winter 2014**
Record of Decision

Field Investigation

The field investigation will be focused on areas believed to be most likely to have munitions items remaining from past uses as a firing range. State of the art metal detection instruments and investigative techniques will be used to locate potential munitions items on the surface of the ground as well as below the ground surface in these areas. Selected areas of the site will also be sampled for chemical contamination associated with past munitions use at the site (e.g., lead and explosive compounds). Any munitions items or associated hazardous materials will be disposed of in compliance with applicable regulations by USACE.

WHAT TO DO IF YOU FIND A SUSPECTED MUNITIONS RELATED ITEM

RECOGNIZE

Recognize that you may have encountered a munition. If you encounter or suspect you may have encountered a munition, consider it extremely dangerous. Munitions are sometimes hard to identify and come in many shapes and sizes.

RETREAT

Do not touch, move or disturb it. Carefully leave the area the way you entered.

REPORT

Contact one of the following:

- Washington State Police:
(360) 452-3394
- Clallam County Sheriff:
(360) 417-2459
- City of Port Angeles Police:
(360) 452-4545
- Call 911

Appendix J

Approval Letters

(Available upon request)

This page intentionally left blank

Appendix K

Sample Public Notice Advertisements

This page intentionally left blank

Sample Public Notice Seeking Community Interest

PUBLIC NOTICE
Port Angeles Combat Range Formerly Used Defense Site

The U.S. Army Corps of Engineers is performing a remedial investigation and feasibility study at the Port Angeles Combat Range Formerly Used Defense Site. The site is located approximately seven miles southeast of the City of Port Angeles, in Clallam County, Wash. The Corps is seeking community input to address any questions or concerns regarding the historic use of military munitions at the Port Angeles Combat Range. The field investigation will occur during the fall of 2013. The public will have the opportunity to review and comment on the proposed plan based on the results of the remedial investigation and feasibility study. The public comment period for the proposed plan is anticipated to occur during the summer of 2014. For more information about the project, visit: ["website link to fact sheet to be placed here"](#).

Please contact the Corps' Seattle District Public Affairs Office with any questions or concerns at:

U.S. Army Corps of Engineers

**Seattle District
Public Affairs Office
P.O. Box 3755
Seattle, Washington 98124-3755
Phone: (206) 764-3750
Email: paoteam@nws02.usace.army.mil**

Sample Public Notice for the Formation of a Restoration Advisory Board

PUBLIC NOTICE
Port Angeles Combat Range Formerly Used Defense Site
Formation of Restoration Advisory Board
Membership Solicitation

The Department of the Army recognizes the importance of stakeholder participation in the Defense Environmental Restoration Program. Therefore, the U.S. Army Corps of Engineers is announcing the establishment of a Restoration Advisory Board or RAB. The RAB is being created in order to improve public participation by involving the community in the environmental restoration of the Formerly Used Defense Sites property at the Port Angeles Combat Range.

The RAB will include community members who reflect the diverse interests of the local community. RAB members will be asked to review and comment on plans and technical documents relating to the ongoing environmental studies and restoration activities at the Port Angeles Combat Range. RAB members will have the opportunity to provide comments that may accelerate the restoration. Members will also be expected to serve as voluntary liaison between the community and the Corps, and be available to meet with community members and/or groups. Community RAB members will receive no compensation for their service. RAB meetings will be open to the public. For more information about the project, visit: ["website link to fact sheet to be placed here"](#).

Community interest forms can be obtained by contacting:

U.S. Army Corps of Engineers
Seattle District
Public Affairs Office
P.O. Box 3755
Seattle, Washington 98124-3755
Phone: (206) 764-3750
Email: paoteam@nws02.usace.army.mil

Members will be expected to serve a 1 to 2 year term, and attend RAB meetings regularly. Forms will be reviewed by the selection panel. The selection panel will make recommendations to the Corps District Commander for approval of RAB members. The selection panel members will be representatives from the Corps, the Washington Department of Ecology, the community and the U.S. Environmental Protection Agency, as appropriate. To qualify, interested parties must be local residents of the City of Port Angeles, or others who are directly affected by the Port Angeles Combat Range.

Sample Public Notice for the Proposed Plan Public Comment Period

PUBLIC NOTICE
Port Angeles Combat Range Formerly Used Defense Site
Proposed Plan Public Comment Period

The U.S. Army Corps of Engineers has prepared a proposed plan (web link for proposed plan) to remediate historic military munitions present at the Port Angeles Combat Range Formerly Used Defense Site. The Corps in consultation with the Washington Department of Ecology will select a final remedy after reviewing and considering all written comments received by the public during the 30-day public comment period.

The Corps is issuing this proposed plan as part of its public participation responsibilities under Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan. The proposed plan and other relevant documents utilized while preparing the proposed plan are contained in the administrative record for the project located at:

City of Port Angeles Library
2210 South Peabody Street
Port Angeles, WA 98362
Phone: (360) 417-8500

North Olympic Library System Hours:

Monday - Thursday: 10am - 8pm
Friday: 10am - 6pm
Saturday: 10am - 5pm

The 30 day public comment period will occur from MONTH, DAY, YEAR until MONTH, DAY, YEAR.

The Corps will also hold a public meeting to present the proposed plan and all of the alternatives presented in the feasibility study. The Corps will answer any questions and accept comments at the meeting. The public meeting will be held on MONTH, DAY, YEAR at TIME (am or pm) at:

Port Angeles City Hall
321 East 5th Street
Port Angeles, WA 98362

This page intentionally left blank

Appendix L

Standard Form 298

This page intentionally left blank

REPORT DOCUMENTATION PAGE				<i>Form Approved OMB No. 0704-0188</i>	
<small>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</small>					
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY)		2. REPORT TYPE		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (Include area code)

INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date, including day, month, if available. Must cite at least the year and be Year 2000 compliant, e.g. 30-06-1998; xx-06-1998; xx-xx-1998.

2. REPORT TYPE. State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, etc.

3. DATES COVERED. Indicate the time during which the work was performed and the report was written, e.g., Jun 1997 - Jun 1998; 1-10 Jun 1996; May - Nov 1998; Nov 1998.

4. TITLE. Enter title and subtitle with volume number and part number, if applicable. On classified documents, enter the title classification in parentheses.

5a. CONTRACT NUMBER. Enter all contract numbers as they appear in the report, e.g. F33615-86-C-5169.

5b. GRANT NUMBER. Enter all grant numbers as they appear in the report, e.g. AFOSR-82-1234.

5c. PROGRAM ELEMENT NUMBER. Enter all program element numbers as they appear in the report, e.g. 61101A.

5d. PROJECT NUMBER. Enter all project numbers as they appear in the report, e.g. 1F665702D1257; ILIR.

5e. TASK NUMBER. Enter all task numbers as they appear in the report, e.g. 05; RF0330201; T4112.

5f. WORK UNIT NUMBER. Enter all work unit numbers as they appear in the report, e.g. 001; AFAPL30480105.

6. AUTHOR(S). Enter name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. The form of entry is the last name, first name, middle initial, and additional qualifiers separated by commas, e.g. Smith, Richard, J, Jr.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES). Self-explanatory.

8. PERFORMING ORGANIZATION REPORT NUMBER. Enter all unique alphanumeric report numbers assigned by the performing organization, e.g. BRL-1234; AFWL-TR-85-4017-Vol-21-PT-2.

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES). Enter the name and address of the organization(s) financially responsible for and monitoring the work.

10. SPONSOR/MONITOR'S ACRONYM(S). Enter, if available, e.g. BRL, ARDEC, NADC.

11. SPONSOR/MONITOR'S REPORT NUMBER(S). Enter report number as assigned by the sponsoring/monitoring agency, if available, e.g. BRL-TR-829; -215.

12. DISTRIBUTION/AVAILABILITY STATEMENT. Use agency-mandated availability statements to indicate the public availability or distribution limitations of the report. If additional limitations/ restrictions or special markings are indicated, follow agency authorization procedures, e.g. RD/FRD, PROPIN, ITAR, etc. Include copyright information.

13. SUPPLEMENTARY NOTES. Enter information not included elsewhere such as: prepared in cooperation with; translation of; report supersedes; old edition number, etc.

14. ABSTRACT. A brief (approximately 200 words) factual summary of the most significant information.

15. SUBJECT TERMS. Key words or phrases identifying major concepts in the report.

16. SECURITY CLASSIFICATION. Enter security classification in accordance with security classification regulations, e.g. U, C, S, etc. If this form contains classified information, stamp classification level on the top and bottom of this page.

17. LIMITATION OF ABSTRACT. This block must be completed to assign a distribution limitation to the abstract. Enter UU (Unclassified Unlimited) or SAR (Same as Report). An entry in this block is necessary if the abstract is to be limited.