



FINAL

# Operational Range Assessment Program Phase I Qualitative Assessment Report Plymouth Training Site, Maine

U.S. Army Operational Range Assessment Program  
Qualitative Operational Range Assessments

Prepared for:

U.S. Army Environmental Command and  
U.S. Army Corps of Engineers Baltimore District



Printed on  
recycled  
paper



May 2008



**ABBREVIATIONS/ACRONYMS**

ARID-GEO	Army Range Inventory Database-Geodatabase
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	Conceptual Site Model
DNT	Dinitrotoluene
DoD	Department of Defense
DODI	Department of Defense Instruction
E	Ecological receptors identified. (This refers to range grouping; pathway designation always precedes E designation.)
ESRI	Environmental Systems Research Institute
F	Fahrenheit
GW	Groundwater pathway identified. (This refers to range grouping; M designation always precedes GW designation.)
H	Human receptors identified. (This refers to range grouping; pathway designation always precedes H designation.)
HMX	Cyclotetramethylenetetranitramine
ITAM	Integrated Training Area Management
LS	Limited Source.
M	Munitions used. (This refers to range grouping; M designation always precedes applicable pathway.)
MCOC	Munitions Constituents of Concern
MDIFW	Maine Department of Inland Fisheries and Wildlife
MEARNG	Maine Army National Guard
MEDOC	Maine Department of Conservation
MEDEP	Maine Department of Environmental Protection
MEDWP	Maine Department of Environmental Health and Human Services, Division of Environmental Health, Drinking Water Program
MEGIS	Maine Office of Geographic Information Systems
MGS	Maine Geological Survey
mph	Miles per hour
NEEPA	New England Environmental Protection Agency
NGB	National Guard Bureau
NG	Nitroglycerin
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
ORAP	Operational Range Assessment Program
PETN	Pentaerythritoltetranitrate
PU	Pathway unlikely or incomplete. (This refers to range grouping; M designation always precedes PU designation.)
RDX	Cyclotrimethylenetrinitramine
RFMSS	Range Facility Management Support System
SW	Surface water pathway identified. (This refers to range grouping; M designation always precedes SW designation.)
TNT	Trinitrotoluene
TS	Training Site
U.S.	United States

USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Command
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

## EXECUTIVE SUMMARY

The United States (U.S.) Army is conducting qualitative assessments at operational ranges to meet the requirements of Department of Defense policy and to support the U.S. Army Sustainable Range Program. The operational range qualitative assessment (hereinafter referred to as Phase I Assessment) is the first phase of the U.S. Army Operational Range Assessment Program (ORAP). This Phase I Assessment evaluates the operational range area at Plymouth Training Site (TS) to assess whether further investigation is needed to determine if potential munitions constituents of concern (MCOC) are or could be migrating off-range at levels that may pose an unacceptable risk to human health or the environment. In conducting the Phase I Assessment, MCOC sources, potential off-range migration pathways, and potential off-range human and ecological receptors are evaluated as appropriate.

Plymouth TS is a 315.64 acre site located in Penobscot County in southern interior Maine, approximately five miles east-southeast of Newport, Maine and nine miles east of Pittsfield, Maine. Plymouth TS consists of two parcels, the first of which was acquired in 1971 and the second of which was acquired in the 1980s by the Maine Army National Guard (MEARNG). The training site is owned by the State of Maine. The Army Range Inventory Database-Geodatabase (ARID GEO) (2007) identified seven operational ranges at Plymouth TS consisting of maneuver and training areas and firing ranges (one inactive live-fire small arms firing range and one active non-live-fire practice / inert grenade launcher range) encompassing the entire 315.64 acre site. Two additional ranges included in the ARID-GEO, totaling 4.47 acres, were listed as historical maneuver and training areas; however, these ranges were identified as active ranges by the MEARNG (State Environmental Specialist, personal communication). A letter detailing the discrepancy was submitted to United States Army Environmental Command.

Of the nine operational ranges at Plymouth TS, the only MCOC source identified is the inactive small caliber firing range. In general, MCOC from source areas potentially impact the following source media: soil (e.g., impact areas surrounding targets).

MCOC can be released to surface water / sediment (downstream) via a variety of release mechanisms. Release mechanisms for soil may include erosion and runoff to nearby streams and wetlands. Once potential MCOC are deposited in surface water / sediment, they have the potential to migrate downstream and/or be taken up by aquatic plants or animals. Release mechanisms for surface water / sediment are natural stream flow and sediment transport. Drainage at Plymouth TS is directed through broad overland flow areas to intermittent streams and wetlands on range. The surface water then flows to the west and off-range. There are no primary human receptors located downstream of Plymouth TS. The main ecological receptors are sensitive environments (i.e., wetlands and Atlantic salmon habitat) located downstream from the range.

The nine ranges at Plymouth TS are categorized as Unlikely.

### **Unlikely – Five-Year Review**

Nine ranges at Plymouth TS are categorized as Unlikely, totaling 315.64 acres. These ranges consist of one inactive live-fire small arms firing range, one non-live-fire medium caliber practice / inert grenade launcher range, and seven non-live fire maneuver and training areas. Based upon a review of readily available information, ranges where there is sufficient evidence to show that there are no known releases or source-receptor interactions off-range that could present an unacceptable risk to

human health or the environment are categorized as Unlikely. Ranges categorized as Unlikely are required to be re-evaluated at least every five years. Re-evaluation may occur sooner if significant changes (e.g., change in range operations or site conditions, regulatory changes) occur that affect determinations made during this Phase I Assessment.

**Table ES-1** summarizes the Phase I Assessment findings.

**Table ES-1: Summary of Findings and Conclusions for Plymouth Training Site**

Category	Total Number of Ranges and Acreage	Source(s)	Pathway(s)	Human Receptors	Ecological Receptors	Conclusions and Rationale
Unlikely	9 ranges, 315.64 acres	No source – limited or no military munitions use (7 maneuver and training areas and active non-live-fire medium caliber practice / inert grenade launcher range)	Not evaluated (no source was identified)			Re-evaluate during the five-year review. No source was identified.
		Inactive live-fire small arms firing range	Wetlands/ surface water (Martin Stream)	None	Sensitive environments (i.e. wetlands, Atlantic salmon habitat)	Re-evaluate during the five-year review. Limited potential for off-range MCOC migration was identified.