

**FINAL
OPERATIONAL RANGE ASSESSMENT PROGRAM
PHASE I QUALITATIVE ASSESSMENT REPORT
RAVENNA TRAINING AND LOGISTICS SITE
NEWTON FALLS, OHIO**

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Prepared for:

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The logo for Malcolm Pirnie, Inc. consists of the words "MALCOLM" and "PIRNIE" stacked vertically in a bold, white, sans-serif font. The text is centered within a solid black rectangular background.

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 Ravenna Training and Logistics Site (RTLS) 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.

RTLS occupies approximately 21,683 acres of land in northeastern Ohio, approximately three miles east of Ravenna. Approximately 93 percent of RTLS is in Portage County, and seven percent of RTLS is in Trumbull County. The primary mission of RTLS is to provide “administrative, operating, security and logistics functions, to maintain and operate a battle-focused training environment to accommodate usage on a year-round basis” (AMEC Earth & Environmental, 2008).

As of February 2006, a total of 20,403 acres have been transferred to the United States Property and Fiscal Officer for Ohio (USP&FO) and subsequently licensed to the OHARNG for use as a military training site. The remaining 1,280 acres are still owned by the Army. According to the geographic information system data collected from the installation in May 2008, 22 operational range areas encompass approximately 3,407 acres. Approximately 18,276 acres were identified as other than operational land. Training activities conducted at RTLS include the use of weapons firing points, firing ranges, bivouac areas, and training areas (AMEC Earth & Environmental, 2008).

Potential MCOC sources were identified at RTLS at a medium caliber firing range and at training areas. In general, potential MCOC from primary source areas potentially impact the following source media: (1) soil (e.g., impact berms, impact areas surrounding targets) and (2) surface water / sediment (e.g., direct deposition into streams and wetlands).

Potential MCOC can be released to groundwater (down gradient), surface water / sediment (downstream), off-range soil, or the food chain via a variety of release mechanisms. Release mechanisms for soil may include leaching from soil to groundwater or erosion and runoff to off-range surface soil or to nearby streams. Once potential MCOC are deposited in surface water / sediment, they have the potential to migrate downstream, recharge the shallow groundwater, or be taken up by aquatic plants or animals. Release mechanisms for surface water / sediment are streamflow and sediment transport. The South Fork of Eagle Creek, Sand Creek, and Hinkley Creek drain into the West Branch of the Mahoning River south of the installation (USACE, 2007).

The main human receptors are users of water from off-installation wells and persons fishing in other than operational areas on and downstream of RTLS. The main ecological receptors are sensitive environments (which serve as surrogates for ecological receptors) and threatened and endangered species located off-installation and in other than operational areas on-installation.

Unlikely – Five-Year Review

Nineteen ranges at RTLS are categorized as Unlikely, totaling 3,407 acres. These ranges consist of a bridge training area, eight training areas, a hand grenade qualification course, three drop zones, a multipurpose training area (laser), a wheeled vehicle route, a tank driving range, a training and land

navigation training area, a 12-mile convoy route, a driving course, a pistol range, a vehicle maneuver area, and a firing range. Ranges where, based upon a review of readily available information, 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.

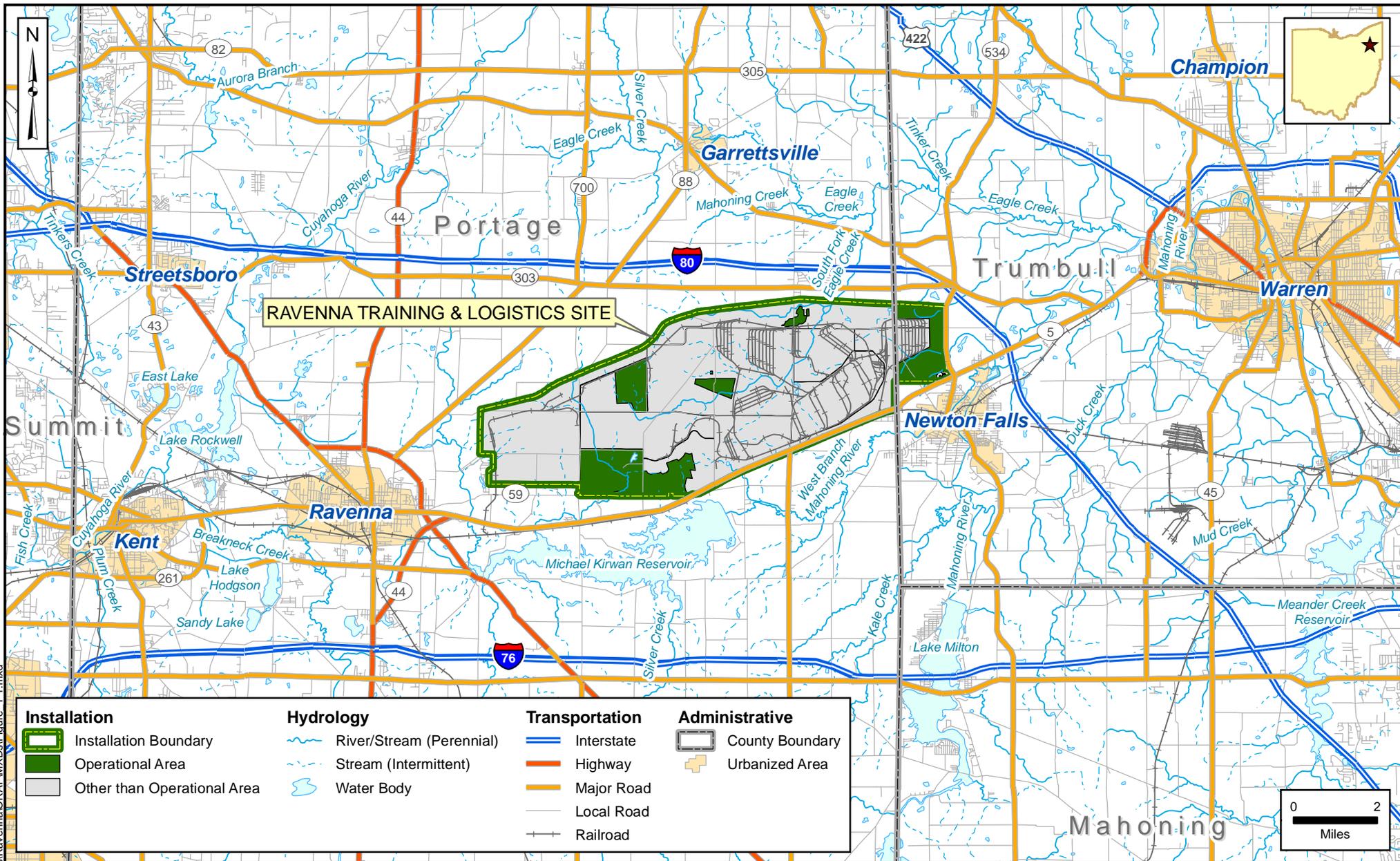
Table ES-1: Summary of Findings and Conclusions for RTLS

Category	Total Number of Ranges and Acreage	Group Identification	Source(s)	Pathway(s)	Human Receptors	Ecological Receptors	Conclusions and Rationale
Unlikely	22 operational ranges; 3,407 acres	LS	No source—limited or no military munitions use	Not evaluated (no source identified)			Re-evaluate during the five-year review. No source was identified.

ABBREVIATIONS/ACRONYMS

amsl	Above Mean Sea Level
ARID-GEO	Army Range Inventory Database-Geodatabase
bgs	Below Ground Surface
BRAC	Base Realignment and Closure
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.)
ECM	Earth-Covered Magazine
GIS	Geographic Information System
gpm	Gallons per Minute
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
HUC	Hydrologic Unit Code
IRP	Installation Restoration Program
LS	Limited Source
M	Munitions used. (This refers to range grouping; M designation always precedes applicable pathway.)
MCOC	Munitions Constituents of Concern
mg/kg	Milligrams per Kilogram
mm	Millimeter
MMRP	Military Munitions Response Program
mph	Miles per Hour
NFA	No Further Action
OB	Open Burn
OD	Open Detonation
OHARNG	Ohio Army National Guard
ORAP	Operational Range Assessment Program
PU	Pathway unlikely or incomplete. (This refers to range grouping; M designation always precedes PU designation.)
RDX	Cyclotrimethylenetrinitramine
RFMSS	Range Facility Management Support System
RI	Remedial Investigation
RTLS	Ravenna Training and Logistics Site
RVAAP	Ravenna Army Ammunition Plant
SR	State Route
SW	Surface water pathway identified. (This refers to range grouping; M designation always precedes SW designation.)
TNT	Trinitrotoluene
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
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WP	White Phosphorus
°F	Degrees Fahrenheit
µg/L	Micrograms per Liter



Installation	Hydrology	Transportation	Administrative
Installation Boundary	River/Stream (Perennial)	Interstate	County Boundary
Operational Area	Stream (Intermittent)	Highway	Urbanized Area
Other than Operational Area	Water Body	Major Road	
		Local Road	
		Railroad	

Operational Range Assessment Program
Phase I Qualitative Assessment
Ravenna Training & Logistics Site, OH
Figure 1-1
General Ravenna Training & Logistics Site Location

Data Sources:
 AEC, ARID-GEO, 2007
 OHARNG, 2008
 ESRI, StreetMap USA, 2005
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