



# FINAL

## Operational Range Assessment Program Phase I Qualitative Assessment Report Pu'u Pa Local Training Area, Hawai'i, Hawai'i U.S. Army Operational Range Assessment Program Qualitative Operational Range Assessments

Prepared for:  
U.S. Army Environmental Command and  
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Final Operational Range Assessment Program Phase I Qualitative Assessment Range Assessment Reports will be released beginning in March 2008 per the Direction of Army Headquarters. The cover page of this Report reflects the official finalization date. The date on subsequent pages/figures reflects the date upon which this document's conclusions are based.



## **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 Pu'u Pa Local Training Area (LTA) 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.

Pu'u Pa LTA is comprised of 13,272.50 acres of land located approximately one mile south of the town of Waimea on the island of Hawai'i. Pu'u Pa LTA resides within the footprint of the former Waikoloa Maneuver Area, which was acquired by the U.S. Navy in 1943 and served as a training camp until 1946. Portions of the former maneuver area were used as an artillery firing range, troop maneuvers, and for Camp Tarawa, a U.S. Marine Corps encampment site consisting of tents and Quonset huts (Earth Tech, Inc., 2002). Based on the available 31 December 2005 Army Range Inventory Database-Geodatabase data, Pu'u Pa LTA is currently comprised of a single training and maneuver area for light forces utilized by the Hawai'i Army National Guard (HIARNG).

A review of available records and background data as well as interviews with HIARNG personnel indicates that Pu'u Pa LTA has been used for training involving military munitions (live-fire and non-live-fire). As such, several potential sources of MCOC exist at Pu'u Pa LTA. However, no viable off-site transport mechanisms such as erosion, runoff, or infiltration to groundwater exist for potential MCOC to migrate off-range. Therefore, the one operational range at Pu'u Pa LTA has been categorized as Unlikely.

MCOC sources identified at Pu'u Pa LTA primarily consist of historical artillery firing points and impact areas and live-fire maneuver and training. In general, MCOC from primary source areas potentially impact the following source media: (1) soil (e.g., impact berms, impact areas surrounding targets, burn pits), and (2) surface water / sediment (e.g., direct deposition into streams and wetlands). While MCOC from historical training has the potential to impact the soil at firing points and impact areas, no migration pathways have been identified for the MCOC source to migrate down gradient of Pu'u Pa LTA.

### **Unlikely – Five-Year Review**

The one range at Pu'u Pa LTA is categorized as Unlikely, totaling 13,272.50 acres. This range consists of a single maneuver and training area. 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.

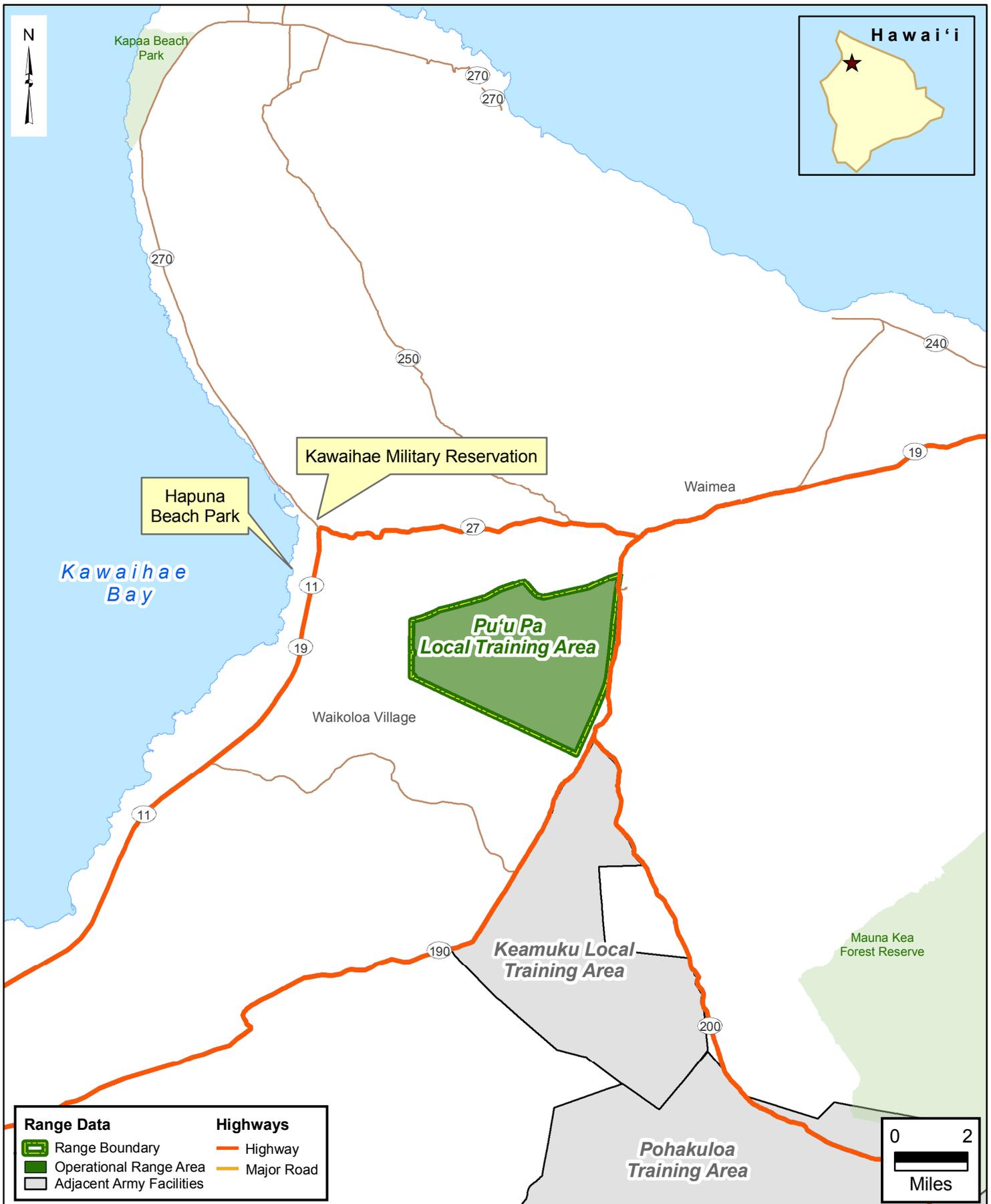
**Table ES-1** summarizes the Phase I Assessment findings.

**Table ES-1: Summary of Findings and Conclusions for Pu'u Pa LTA**

| Category | Total Number of Ranges and Acreage        | Source(s)  | Pathway(s)                       | Human Receptors                       | Ecological Receptors | Conclusions and Rationale  |
|----------|---|--|----------------------------------|---------------------------------------|----------------------|--|
| Unlikely | One operational range;<br>13,272.50 acres | Training and maneuver area (Historical munitions use associated with Waikoloa Maneuver Area) | No migration pathways identified | Not evaluated (no pathway identified) |                      | Re-evaluate during the five-year review. Due to the lack of migration pathways, munitions are not likely to migrate off range. |

## ABBREVIATIONS/ACRONYMS

|          |  |
|----------|--|
| amsl     | Above Mean Sea Level   |
| ARID-GEO | Army Range Inventory Database-Geodatabase  |
| CEMML    | Center for Environmental Management of Military Lands  |
| 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 is referring to range grouping, pathway designation always precedes E designation. |
| GIS      | Geographic Information System  |
| GW       | Groundwater pathway identified. This is referring to range grouping; M designation always precedes GW designation.       |
| H        | Human receptors identified. This is referring to range grouping; pathway designation always precedes H designation.      |
| HIARNG   | Hawai'i Army National Guard  |
| HMX      | Cyclotetramethylenetetranitramine  |
| LTA      | Local Training Area  |
| LS       | Limited Source   |
| M        | Munitions used. This is referring to range grouping; M designation always precedes applicable pathway.                   |
| MCOC     | Munitions Constituents of Concern  |
| mm       | Millimeters  |
| MPU      | Munitions used. Pathway unlikely.  |
| NG       | Nitroglycerin  |
| NGB      | National Guard Bureau  |
| ORAP     | Operational Range Assessment Program   |
| PU       | Pathway Unlikely. This is referring to range grouping, M designation always precedes PU designation.                     |
| RDX      | Cyclotrimethylenetrinitramine  |
| RFMSS    | Range Facility Management Support System   |
| SW       | Surface water pathway identified. This is referring 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  |
| UXO      | Unexploded Ordnance  |
| °F       | Degrees Fahrenheit   |



**Operational Range Assessment Program  
Phase I Qualitative Assessment  
Pu'u Pa Local Training Area, Hawai'i, HI**

Figure 1-1  
General Range Location

Data Sources:  
AEC, ORIS GIS Data 2005 Supplemental  
Data Request  
ESRI StreetMap USA, 2005

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