



FINAL

Operational Range Assessment Program Phase I Qualitative Assessment Report Kanaio Training Area, Maui, Hawai'i

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



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April 2008

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.



ABBREVIATIONS/ACRONYMS

amsl	above mean sea level
ARID-GEO	Army Range Inventory Database-Geodatabase
ARNG	Army National Guard
CCD	Census County Division
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.)
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.)
HE	High Explosives
HIARNG	Hawai'i Army National Guard
HMX	Cyclotetramethylenetetranitramine
LS	Limited Source
M	Munitions used. (This refers to range grouping; M designation always precedes applicable pathway.)
MCOC	Munitions Constituents of Concern
mm	Millimeters
NAR	Natural Area Reserve
NG	Nitroglycerin
NGB	National Guard Bureau
NPS	National Park Service
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
SOP	Standard Operating Procedure
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
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordnance
WP	White Phosphorus
°F	Degrees Fahrenheit

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 Kanaio Training Area 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.

Kanaio Training Area is comprised of approximately 4,771 acres, of which 95 acres are considered non-operational. The Kanaio range complex is located centrally on the southern coast of East Maui in the district of Makawao, Maui County, Hawai'i.

Based on Army Range Inventory Database-Geodatabase (ARID-GEO) data (dated 31 December 2005), Kanaio Training Area consists of two operational ranges, a non-live-fire maneuver and training area and a non-standard small arms range, authorized for use by Hawai'i Army National Guard (HIARNG) units. Kanaio Training Area was created as a live-fire training range; from 1965 until approximately 1981, training activities included the use of small caliber munitions, medium and large caliber projectiles (practice and high explosive rounds), rockets, pyrotechnics, obscurants, and grenades. During the 1980s training activities were significantly reduced at Kanaio Training Area, and up until 1987 through 2003, training included dismounted cross-country training and limited infantry squad training within the non-live-fire maneuver and training area, and limited small arms training and qualification within the non-standard small arms range. Based on collected documentation as well as personnel interviews, while training was significantly reduced, limited use of both medium and large caliber munitions may have continued as late as the early 1990s. The two ranges listed in the 31 December 2005 ARID-GEO have been inactive since 2003 and are currently in the process of being released back to the state of Hawai'i.

Potential MCOC at Kanaio Training Area includes recent and historical firing points, impact areas, and small arms ranges, and could migrate off-range via infiltration through 'a'a lava to groundwater. Despite the potentially completed migration pathway, no potential down-gradient human or ecological receptors were identified. The two operational ranges at Kanaio Training Area are categorized as Unlikely.

Unlikely – Five-Year Review

Two ranges at Kanaio Training Area are categorized as Unlikely, totaling 4,676 acres. These ranges consist of one maneuver and training area and one non-standard small arms qualification 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 Kanaio Training Area

Category	Total Number of Ranges and Acreage	Source(s)	Pathway(s)	Human Receptors	Ecological Receptors	Conclusions and Rationale
Unlikely	Two inactive ranges; 4,676 acres	Recent and historical firing points, impact areas, and small arms ranges	Infiltration through 'a'a lava to groundwater, eventually discharging to the Pacific Ocean			No human or ecological receptors identified.