

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Land Division  
Honolulu, Hawaii 96813

September 28, 2018

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

PSF No.: 16SD-160

OAHU

Report to the Board of Land and Natural Resources on Findings of a Surface Clearance of Submerged Lands, Conducted Under Right-of-Entry Permit #4308, at Former Underwater Munitions Site Located Offshore of Makua Beach, Kahanahaiki, Waianae, Island of Oahu, Tax Map Key: (1) 8-1-001:seaward of 008.

PURPOSE:

Report by the United States Army Garrison-Hawaii (USAG) on findings of a surface clearance of approximately 20 acres of the ocean floor to investigate, recover, and manage the disposition of potential munitions and explosives of concern (MEC) during a time critical removal action.

LEGAL REFERENCE:

Section 171-55, Hawaii Revised Statutes, as amended.

LOCATION:

Unencumbered State lands offshore of Kaena Point State Park at Makua, Kahanahaiki, Waianae, Island of Oahu, Tax Map Key: (1) 8-1-001:seaward of 008, as shown on the attached map labeled Exhibit A.

AREA:

20 acres, more or less.

ZONING:

State Land Use District: Conservation  
City & County of Honolulu CZO: N/A

CURRENT USE:

Vacant and unencumbered.

BACKGROUND:

At its meeting of June 23, 2017, under Agenda Item D-9, the Board of Land and Natural Resources (Board) approved a request from the United States through its Army Corps of Engineers for right-of-entry to the subject property to conduct a time critical surface sweep of a former underwater munitions site. The U.S. Army Garrison was to oversee the project. The ROE request was approved with amendments, including a condition "asking the Army Garrison to return back to the Board with staff and report on what, if any munitions were found and how they were disposed of." For the complete record of the Board approval, with amendments, refer to Exhibit B, attached.

The subject property, the former Makua Underwater Munitions Site, was previously used by the U.S. Army, Marines, Navy, Air Force, and National Guard for combined live-fire exercises as part of military training operations. Operating under one year Right-of-Entry #4308 issued to the United States on September 07, 2017, the USAG planned the environmental remediation project according to protocols.

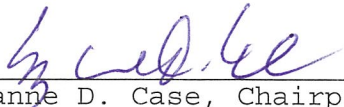
Field operations were originally planned for October 2017, but were postponed due to unexpected closure of the local hyperbaric chamber on Oahu, necessary for diving operations safety requirements. The hyperbaric facility re-opened in January 2018, enabling the field work to be rescheduled. Work was successfully conducted according to plan during April 2018. See Exhibit C for a map of findings and Exhibit D for photographs from field operations.

The USAG staff have completed a report of results of their project for the Board, as requested, and will be prepared to present an oral summary and answer any questions that may arise. A summary of findings is attached as Exhibit E.

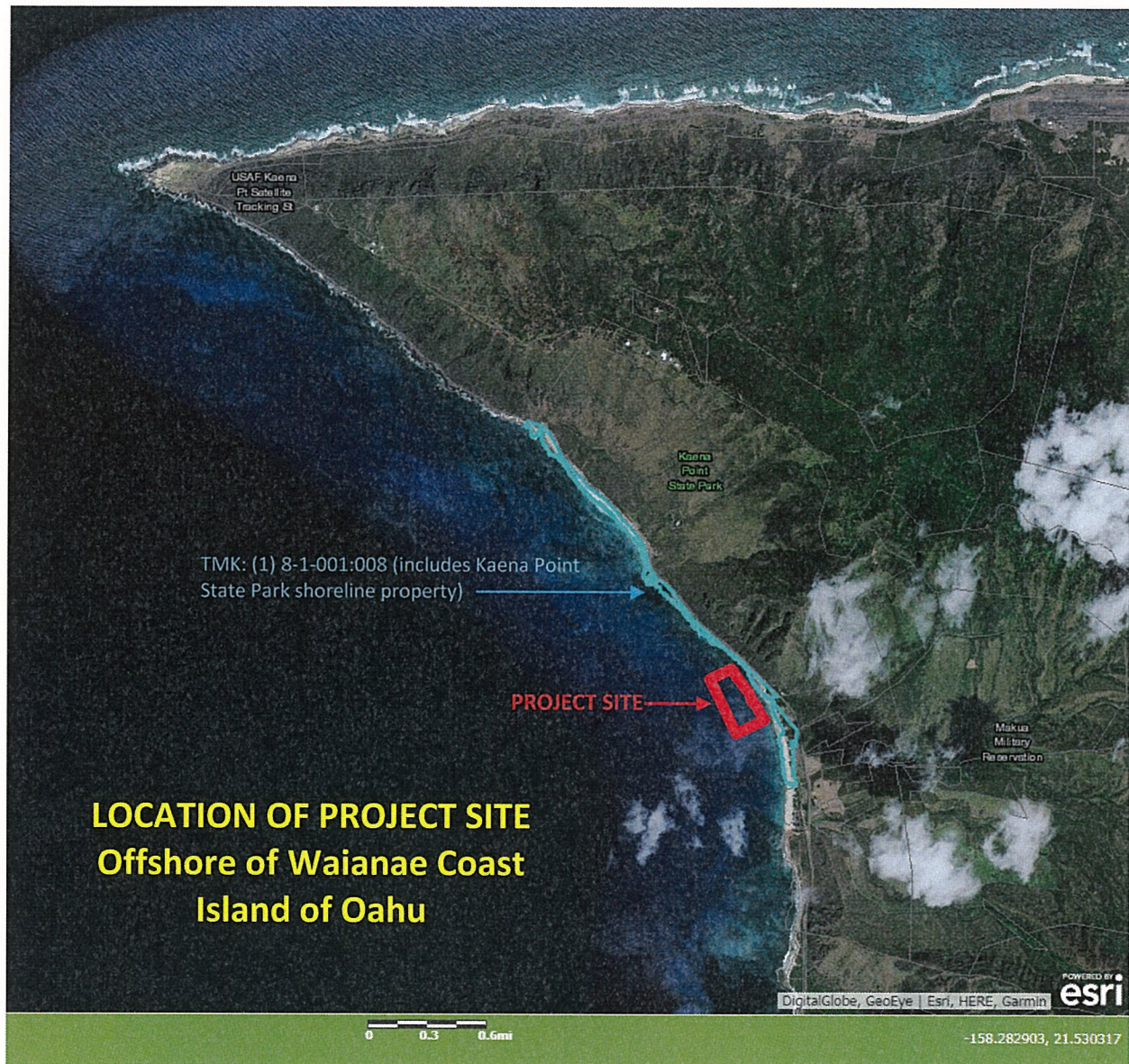
Respectfully Submitted,

  
\_\_\_\_\_  
Barbara J. Lee  
Project Development Specialist

APPROVED FOR SUBMITTAL:

  
\_\_\_\_\_  
Suzanne D. Case, Chairperson





*Map from DLNR Public Land Trust Information System.*

## **EXHIBIT B**

### **Notes**

Exhibit B is a seven-page excerpt from the Board of Land and Natural Resources approval, as amended, of June 23, 2017, Item D-9.

A complete version of this 18-page document is available  
for viewing at the following URL:

<https://dlnr.hawaii.gov/wp-content/uploads/2017/06/D-9-1.pdf>



**AMENDED**

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Land Division  
Honolulu, Hawaii 96813

June 23, 2017

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

PSF No.: 16SD-160

OAHU

Issuance of Right-of-Entry Permit to United States on Encumbered Land Onshore  
at Makua Beach and Unencumbered Submerged Lands Offshore of Makua Beach  
at Kahanahaiki, Waianae, Island of Oahu, Tax Map Key: (1) 8-1-001:portion of  
008 and seaward of 008.

APPLICANT:

U.S. Army Corps of Engineers Honolulu District

LEGAL REFERENCE:

Sections 171-55, Hawaii Revised Statutes, as amended.

LOCATION:

Portion of Government fast lands at Makua Beach, Kaena Point State Park, and  
submerged lands offshore of Makua Beach, Kahanahaiki, Waianae, Island of Oahu,  
identified by Tax Map Key: (1) 8-1-001: portion of 008 and (1) 8-1-001: seaward of 008,  
as shown on the attached map labeled Exhibit A.

AREA:

Fast lands: 6.9 acres, more or less, TMK (1) 8-1-008-1:portion of 008.  
Submerged lands: 20 acres, more or less, seaward of TMK (1) 8-1-008-1:008.

ZONING:

State Land Use District: Conservation  
City & County of Honolulu CZO: N/A

*as amended*  
APPROVED BY THE BOARD OF  
LAND AND NATURAL RESOURCES  
AT ITS MEETING HELD ON

June 23, 2017 Go

D-9

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TRUST LAND STATUS:

Section 5(b) lands of the Hawaii Admission Act.

DHHL 30% entitlement lands pursuant to the Hawaii State Constitution: YES \_\_\_ NO X

CURRENT USE STATUS:

Fast lands: Set aside by Governor's Executive Order 3338 for Kaena Point State Park.  
Submerged lands: Unencumbered.

CHARACTER OF USE:

Environmental remediation purposes.

TERM OF RIGHT-OF-ENTRY:

One year (12 months) from date of execution.

CONSIDERATION:

*Gratis.*

CHAPTER 343 - ENVIRONMENTAL ASSESSMENT:

In accordance with §11-200-8A of the Hawaii Administrative Rules and the Exemption List for the Department of Land and Natural Resources approved by the Environmental Council on June 5, 2015, the subject request to conduct a surface clearance of the ocean floor with the objective to investigate, recover, and manage the disposition of potential munitions and explosives of concern (MEC) on the subject property is exempt from the preparation of an environmental assessment pursuant to:

**Exemption Class 1:** "Operations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing," and its **Item 1:** "Mitigation of any hazardous conditions that present imminent danger as determined by the Department Director and that are necessary to protect public health, safety, welfare, or public trust resources."

**Exemption Class No. 4:** "Minor alteration in the conditions of land, water, or vegetation" and its **Item 1:** "Upon determination by the Department Director that an emergency exists, emergency mitigation and restoration work to prevent further damage from occurring and to restore the topographical features and biological resources."

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**Exemption Class 5:** "Basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource," including its **Item 1:** "Conduct surveys or collect data on existing environmental conditions (e.g, noise, air quality, water flow, water quality, etc.); **Item 2:** "Non-destructive data collection and inventory, including field, aerial and satellite surveying and mapping;" and **Item 22:** "Conduct planning and feasibility studies."

**Exemption Class 6:** "Construction or placement of minor structures accessory to existing facilities," and its **Item 1:** "Construction, placement or installation of signage, pavement markings, buoys, or other similar structures."

These exemptions are summarized in Land Division's **Notification of Exemption Form**, attached hereto as Exhibit B, and incorporated herein.

REMARKS:

The United States (US) through its Army Corps of Engineers Honolulu District (USACE) is requesting right-of-entry to conduct a surface clearance of the ocean floor with the objective to investigate, recover, and manage the disposition of potential munitions and explosives of concern (MEC) at the Makua underwater munitions area located offshore of Makua Beach, Kahanahaiki, Waianae, on the island of Oahu.

**HISTORICAL PERSPECTIVE.** To attain the level of readiness necessary to deter adversaries and defend our nation, the Department of Defense (DoD) must develop, test, and deploy weapon systems and military munitions, and then train its personnel to use and maintain those systems. Since World War II, large areas both onshore and offshore in Hawaii have been used for such military training involving live ammunition. As a result, some properties are known or suspected to still contain materials that may include unexploded ordnance (UXO) and other materials remaining from previous DoD use, and are the subjects of long-term remediation efforts carried out by the DoD today through its Defense Environmental Restoration Program/Formerly Used Defense Sites and Military Munitions Response Program (DERP/FUDS-MMRP).

The subject area was previously used by the U.S. Army, Marines, Navy, Air Force, and National Guard for combined live-fire exercises required to properly train troops for the battlefield.

**PROGRAM ADMINISTRATION.** The USACE is the executing agency for the DERP/FUDS-MMRP. The USACE Honolulu District serves Hawaii, American Samoa, Commonwealth of the Northern Marianas Islands, Guam, and the Republic of Palau. Planned work on projects in this region has been projected to extend to the year 2134. In Hawaii, many of these projects are located on public lands managed by the Department.



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Remediation activities generally evaluate the presence of munitions and explosives of concern (MEC) including what is commonly known as UXO, as well as discarded military munitions (DMM) and munitions constituents (MC) on the subject properties, and provide appropriate remediation, response and mitigation.

**REGULATORY FRAMEWORK.** The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980 to address releases or threatened releases of hazardous substances that may endanger public health or the environment. In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA), which amended and strengthened CERCLA. SARA also renamed its Installation Restoration Program (IRP) as the Defense Environmental Restoration Program (DERP) and expanded the IRP with programs to address environmental cleanup on various types of DoD-used properties. The USACE serves as the executing agency for the DERP/FUDS-MMRP. Response actions today are authorized under DERP and SARA Section 211, and CERCLA provides the regulatory framework for environmental restoration.

The main goal is to reduce, in a timely and cost-effective manner, the risk to human health and the environment resulting from past DoD activities. To ensure adherence to the substantive requirements of all pertinent federal and state environmental laws and regulations, USACE prepares an Environmental Protection Plan (EPP) for each project contract. The EPP details operational procedures and methods to be implemented for environmental protection, including prevention/control of pollution and habitat disruption, consideration of impacts to land, water, and air, as well as biological and cultural resources, management of visual aesthetics, noise, and also solid, chemical, gaseous and liquid wastes, radiant energy and other possible pollutants.

The EPP must undergo a rigorous review by both USACE and the Regulator, which in Hawaii is the Department of Health (DOH) Hazard Evaluation and Emergency Response Office (HEER). A Memorandum of Agreement executed on September 10, 1991 between the DoD and the State of Hawaii, represented by DOH, assures the DoD of State coordination and support for regulatory matters.

All work to be conducted at the subject property will adhere to strict safety protocols, as outlined in a Site Safety and Health Plan. The project is being conducted in coordination with the USACE Omaha District MMRP section to ensure all applicable standards and requirements are being met.

**RIGHT-OF-ENTRY REQUIREMENT.** Commencement of work at the project site is contingent upon availability of federal funding and landowner consent to right-of- entry. Participation is voluntary.

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VALUE TO THE STATE OF HAWAII. Right-of-entry will be provided *gratis* to the Applicant, as the State of Hawaii benefits from the remediation of long standing munitions-related environmental contamination left by past military use. Consequently, in order to protect the health, safety and welfare of the general public, it is in the State's best interests to support and facilitate these projects.

TIME-CRITICAL REQUEST. The federal UXO remediation programs described above are currently the sole means to address military munitions contamination in Hawaii on a statewide scale. USACE may not always be able to submit right-of-entry (ROE) requests far in advance of their need, and delays to ROE issuance can result in project re-prioritization and loss of funding to specific sites.

Regarding the subject property, on June 3, 2016, two local residents who were scuba diving in the waters off of Makua Beach at Kaena State Park found a MEC item, believed to be a 105mm projectile, in five feet of water about 20 yards offshore. Navy Explosive Ordnance Disposal (EOD) was called. They assessed the situation and determined the munitions item needed to be detonated in the water, which was safely done.

In response to the above incident, a time-critical removal action for surface clearance was authorized and is being performed under the USACE Omaha District Rapid Response Program. Pending issuance of right-of-entry, this work is planned to begin in July 2017 and be completed within an approximately three month period.

ROE PERMIT CONDITIONS. A previous ROE executed by the department in January 2017 to the US for a land-based UXO remediation project on the Big Island (see Exhibit C) will serve as the basis for an ROE for the subject property.

To ensure public safety, the Applicant intends to and will be required to maintain security at the project site in areas where work is being performed.

COMMENTS. Comments regarding the Applicant's proposed activities on the subject property have been solicited from the Office of Conservation and Coastal Lands, the Division of Aquatic Resources, the Division of Boating and Ocean Recreation, and the Division of State Parks. Staff await feedback.

RECOMMENDATION: That the Board

1. Declare that, after considering the potential effects of the proposed disposition as provided by Chapter 343, HRS, and Chapter 11-200, HAR, this project will probably have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment.



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2. Authorize the issuance of a right-of-entry permit to the United States covering the subject area under the terms and conditions cited above, which are by this reference incorporated herein and further subject to the following:

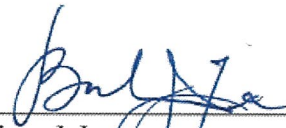
A. The standard terms and conditions of the most current right-of-entry permit form, as may be amended from time to time;

B. Review and approval by the Department of the Attorney General;

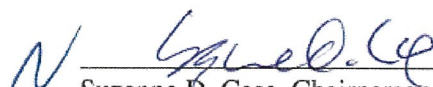
C. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State; and

D. Authorize the Chairperson to issue extensions to this right-of-entry to the Applicant for good cause as related to the aforementioned activities.

Respectfully Submitted,

  
\_\_\_\_\_  
Barbara J. Lee  
Project Development Specialist

APPROVED FOR SUBMITTAL:

  
\_\_\_\_\_  
Suzanne D. Case, Chairperson

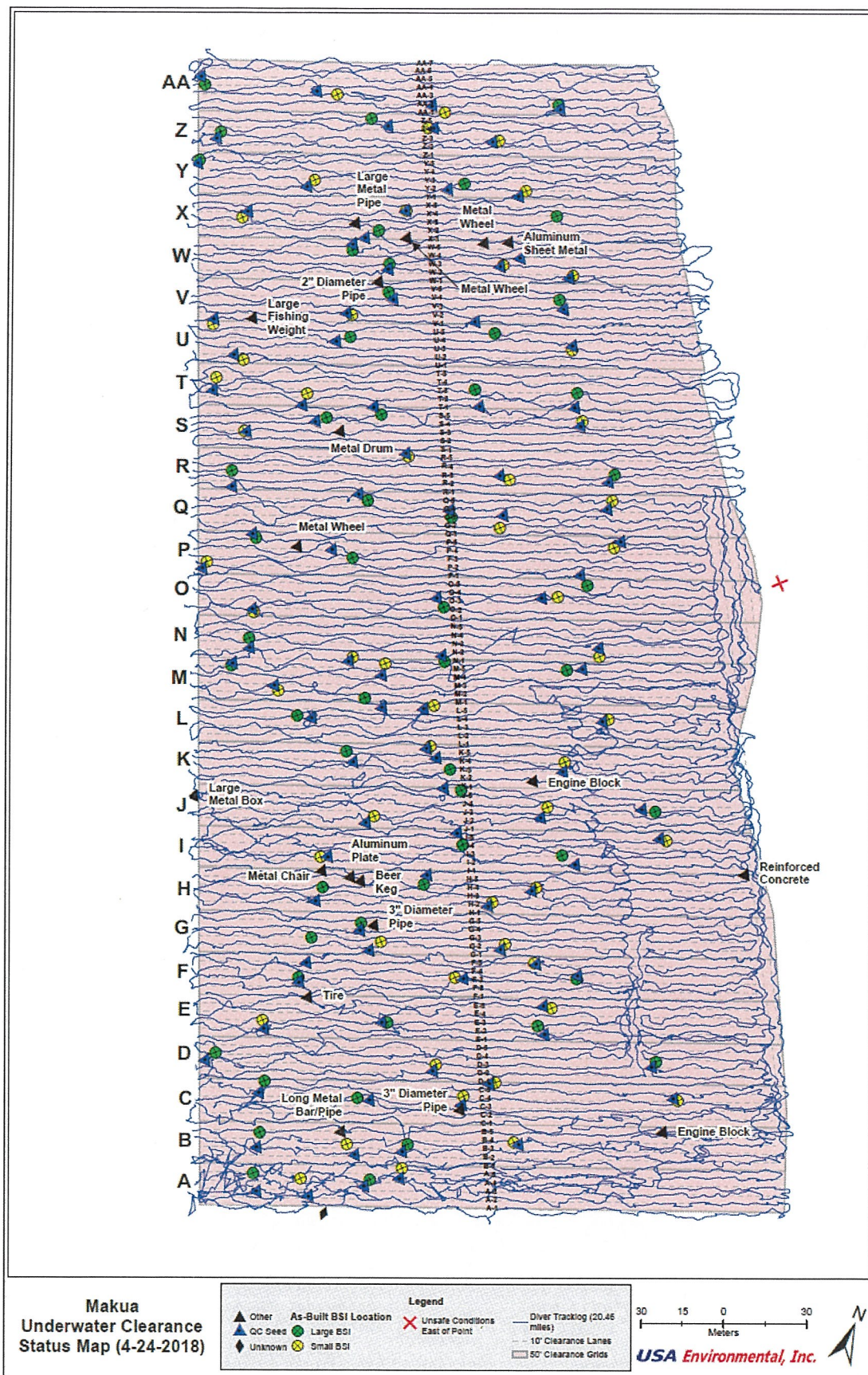
Land Board Meeting: June 23, 2017; D-9: Approved as amended.

Approved as amended. See attached page.



Land Board Meeting: June 23, 2017; D-9: Approved as amended.

**Approved as amended.** The submittal was amended to reflect staff's memorandum dated June 23, 2017 indicating the fast land area to more accurately be about 4.817 acres, more or less, and the submerged land area to more accurately be about 22.084 acres, more or less. The Board added a condition 3 in the recommendation section asking the Army Garrison to return back to the Board with staff and report on what, if any munitions were found and how they were disposed of.

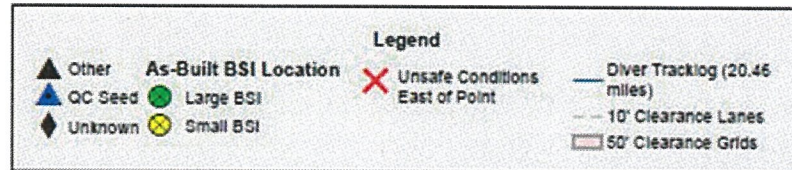


Provided by U.S. Army Garrison-Hawaii.

EXHIBIT C



*ADDITIONAL NOTES FOR  
EXHIBIT C  
Makua Underwater Clearance Status Map*



*A quality control ("QC") measure built into the survey process utilized "blind seed items" ("BSI"), symbolized by blue triangles.*

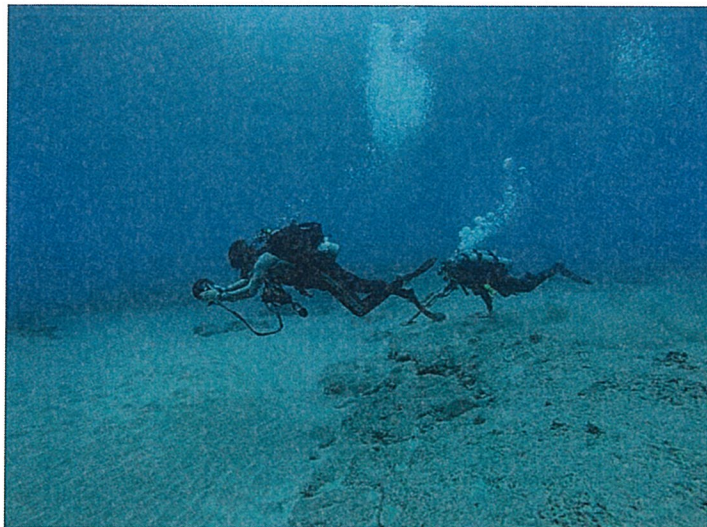
*First, one team of divers would place various BSI's across the 20-acre transect field. Next, a second dive team would proceed with the survey, but were not told what or where those BSI items were.*

*Paths followed by the survey divers are indicated by the blue lines. They were to recover whatever non-natural items they found, following pre-determined parallel transect lines.*

*Locations of the found items are marked on the map by green and yellow symbols. Because the ocean is a dynamic environment, each BSI item noted as found may have moved from its original location of placement by the time it was found by the second dive team.*

*Each found item that was not a BSI is symbolized by a black triangle on the map. Please refer to Exhibit E for a summary of these findings for this project.*





© 21.537506°N, 158.231369°W ±16.4ft



© 21.535442°N, 158.230743°W ±16.4ft



Photographs from field work for time-critical removal action at Makua Underwater Munitions Site, April 2018.

*Provided by U.S. Army Garrison-Hawaii.*

**EXHIBIT D**

**FINAL REPORT**  
**TO BOARD OF LAND AND NATURAL RESOURCES**

Executive Summary  
and  
Makua Underwater Munitions  
Time Critical Removal Action Summary

Carrie Nelson  
U.S. Army Garrison  
28 September 2018

**EXHIBIT E**



## EXECUTIVE SUMMARY

This Interim Remedial Action Completion Report summarizes the scope of the Time Critical Removal Action (TCRA) for the Makua Underwater Munitions (MUWM) Munitions Response Site (MRS) associated with Makua Military Reservation (MMR). This work was performed by BERS-Weston Services JVA, LLC (BERS-Weston) for the United States Army Corps of Engineers (USACE), Omaha District, under Rapid Response Contract No. W9128F-14-D-0009, Task Order 0026, to conduct a TCRA under the Military Munitions Response Program (MMRP) for the MAKU-004-R-01 Munitions Response Site (Headquarters Army Environmental System Site Identification 2215A.1018).

The TCRA was completed under the TCRA Action Memorandum (AM) for this MRS dated June 2017 and approved 27 October, 2017, which documents conditions at the MRS that meet the criteria for a removal action per the NCP Section 300.415(b). The TCRA was executed in accordance with the Final Uniform Federal Policy for Quality Assurance Project Plan (UFP-QAPP) (USACE, 2018), which provides the sampling rationale, design, and quality control (QC) procedures for the MUWM MRS TCRA.

The MUWM MRS is located in the northwestern portion of Oahu near Ka'ena Point. The MRS is situated offshore and adjacent to MMR in Waianae, Hawaii. The MUWM MRS is an approximately 20-acre underwater area, currently utilized as a recreational area for marine activities associated with Makua Beach Park. There is no anticipated future land use change or change in human or ecological receptors at the MRS.

The entire Makua Valley was used by the U.S. military, including the Army, Army Reserves, Hawaii National Guard, and the United States Marine Corps, for small arms and artillery firing, aerial gunnery practice, and tactical live-fire exercises. From 1941 to 1949, the beach area was originally used for beach assault training activities which included naval aerial bombing of the area, while battleships shelled from the ocean, and troops from amphibious craft landed on the beach. To date, no investigations have been conducted at the MUWM MRS under the MMRP. The MRS occurs within the ocean, which is owned by the State of Hawaii; however, the site is eligible under MMRP because potential MEC contamination is attributable to the Army.

On 3 June 2016, two local residents that were in the water off of Makua Beach at Ka'ena State Park found a five-inch projectile in five feet of water about 20 yards offshore of Makua Beach. A U.S. Navy explosive ordnance disposal (EOD) team was called and detonated the munition in the water.

The TCRA, as outlined in the Action Memorandum, was initiated to mitigate the imminent threat to human health (HH) posed by the presence of munitions and explosives of concern (MEC) from past uses of the MRS from historical military training. Field activities were conducted from 29 March 2018 through 30 April 2018. Underwater instrument-aided surface clearance operations were conducted throughout the entire ocean surface of the 20-acre MRS. No MEC, material potentially presenting an explosive hazard (MPPEH), or munitions debris (MD) was encountered within the MRS boundary during the TCRA. Two MD items were encountered outside of the MRS and properly disposed of as material documented as safe (MDAS). The MD items were identified in adjacent



MRSs (BATA and MTA Beach South MRSs) associated with MMR which have been previously cleared or are considered NFA. **Table ES-1** provides a summary of the TCRA results.

**Table ES-1 TCRA Results Summary**

Category	Items Recovered or Poundage Removed
Recovered MEC	0 items
Acres Completed	20 acres
Recovered MD (pounds)	0.5 pounds *
Recovered Non-Munitions Related Debris	436 pounds

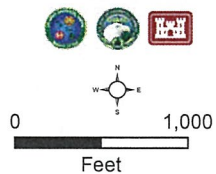
\* Two items of MD were recovered outside of the TCRA MRS boundary (see **Section 4.1**).

Based on the results of the TCRA and incorporating site-specific conceptual site model (CSM) data into a residual risk assessment, the MUWM MRS is considered to have acceptable site conditions in accordance with the Army's risk management methodology for MMRP project sites.





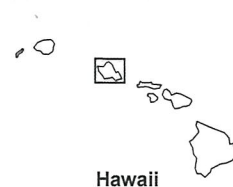
Source: Esri, DeLorme, GeoEye, USGS, AeroGRID, IGN, SRTM3D, NOAA, National Geographic, DeLorme, HERE, Garmin, and other contributors.



Scale applies to main data frame

#### Legend

- Stream - FEMA
- Sited ESS Boundary
- Makua Military Reservation Boundary
- Makua Underwater Munitions MRS



#### Project Location Map

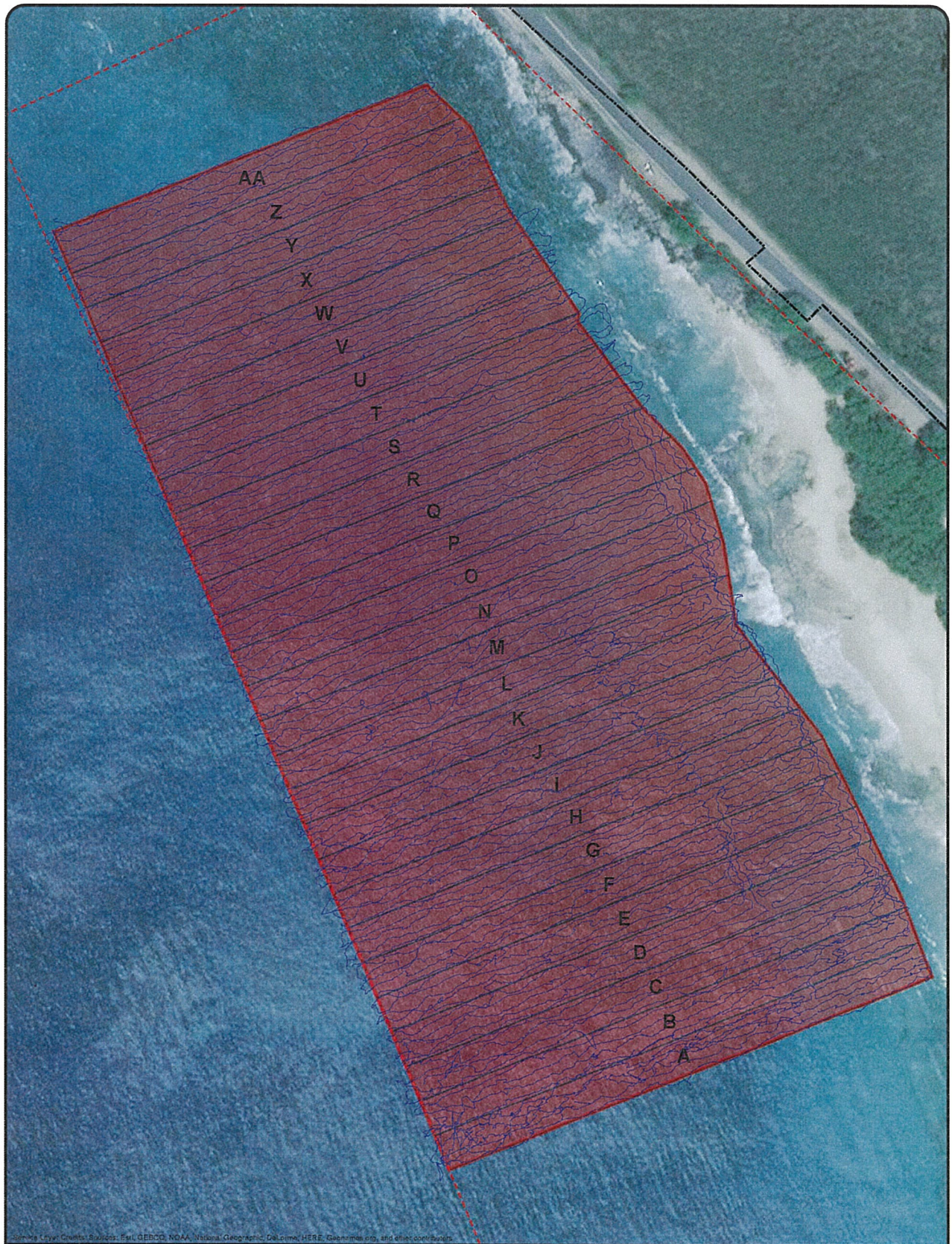
Interim Removal Action Completion Report  
TCRA, MAKU-004-R-01  
Makua, Oahu, Hawaii

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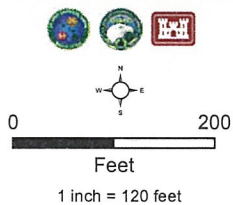


DATE	BY	REVISION
LP	6/29/2018	WP128P-1.4-D-0008-0028
AR	6/29/2018	19384.002.028.5000

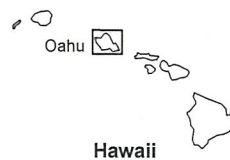




Source: Google Earth, Esri, GEBCO, NOAA, National Geographic, DeLorme, HERE, Geonames.org, and other contributors.

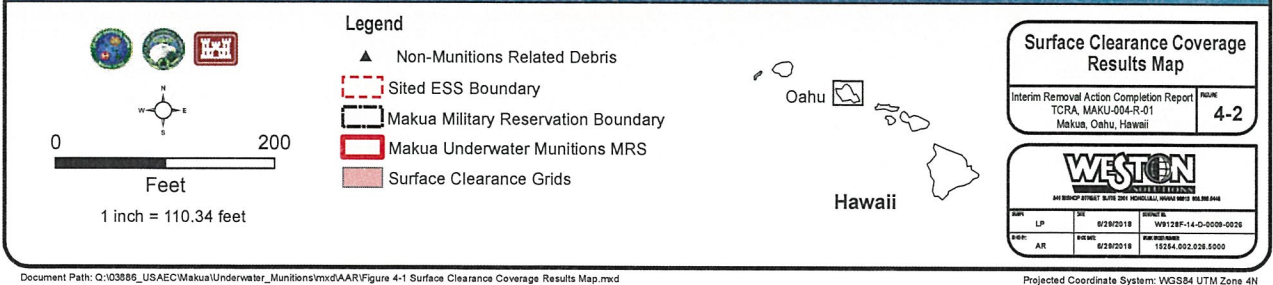


- Legend**
- Transect Pathway
  - Sited ESS Boundary
  - Makua Military Reservation Boundary
  - Makua Underwater Munitions MRS
  - Surface Clearance Grids

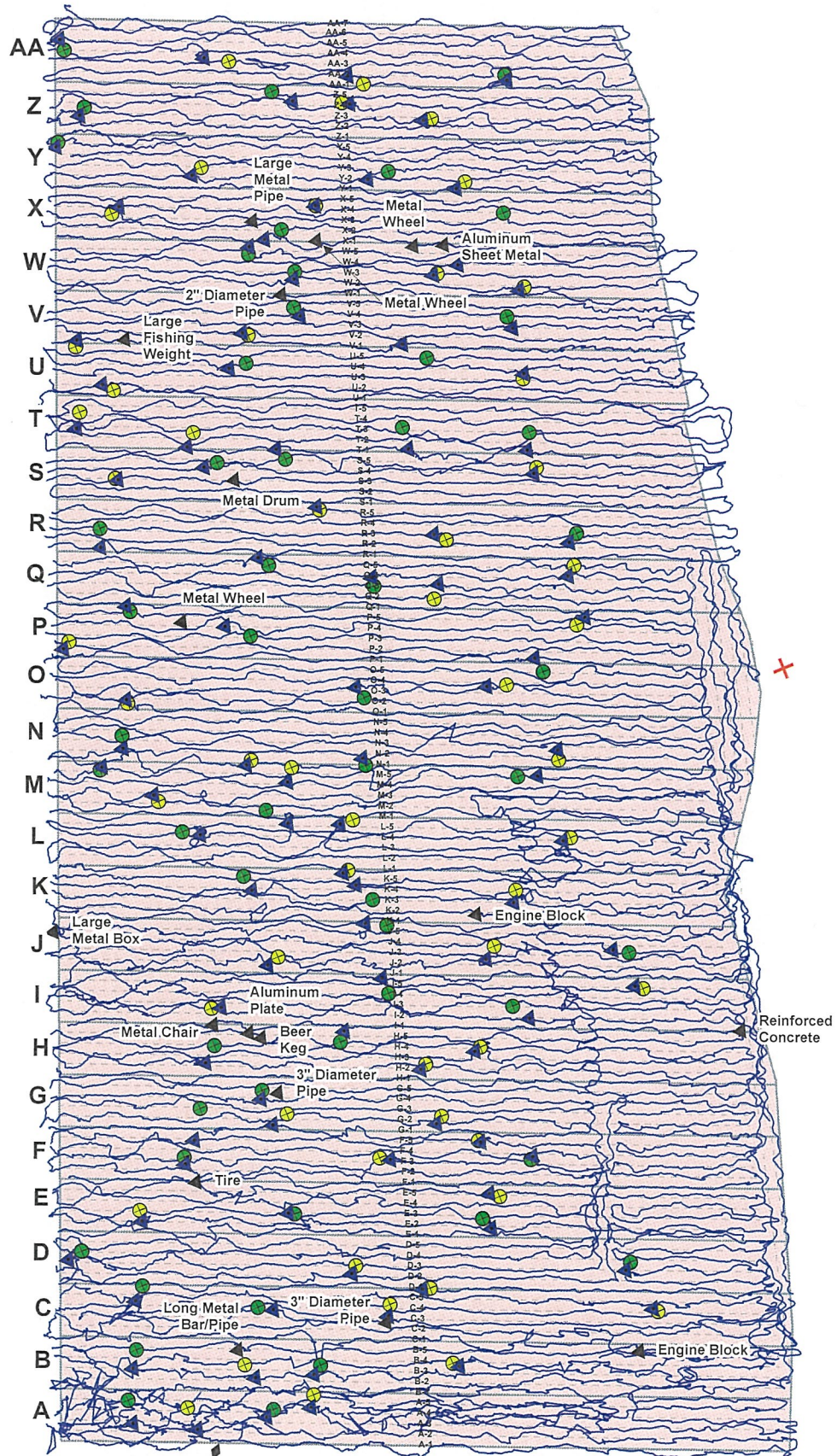


Surface Clearance Coverage Map			
Interim Removal Action Completion Report TCRA, MAKU-004-R-01 Makua, Oahu, Hawaii			FIGURE <b>3-4</b>
DATE	LP	DATE	DATE
AR	07/20/2018	07/20/2018	07/20/2018
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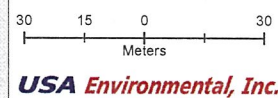
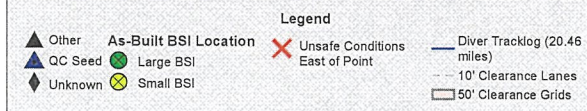








**Makua  
Underwater Clearance  
Status Map (4-24-2018)**







# **Makua Underwater Munitions Time Critical Removal Action Summary**

**Carrie Nelson – U.S. Army Garrison Hawaii  
28 September 2018**

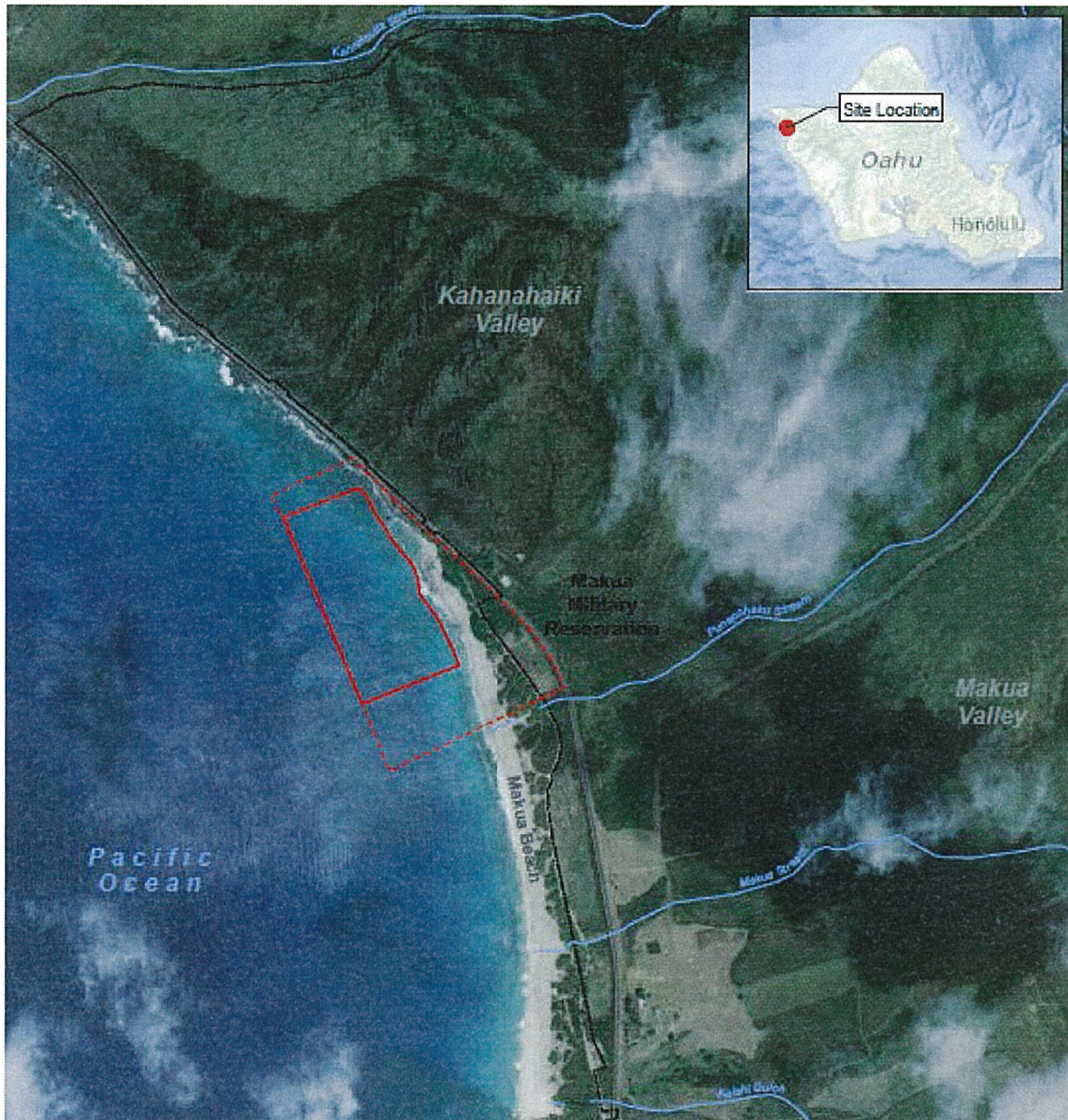
Installation Management Command integrates and delivers base support to enable readiness for a globally-responsive Army

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Serving the Rugged Professional



# Makua Underwater Munitions Site

## Location



- NW portion of Oahu near Kaena Point
- ~ 20 acre underwater area NW of Makua Beach Park
- Seaward of TMK (1) 8-1-001:008
- ROE granted for 12 months beginning 7 September 2017





# Makua Underwater Munitions Site

## History

- US military use of Makua Valley since 1920s
  - Howitzer emplacements, small arms and artillery firing
  - Aerial gunnery practice, tactical live-fire exercises
  - Clearances conducted in 1950 and 2002
- 3 June 2016 two local residents found munition in the water
  - Found in 5' of water ~20 yards offshore of Makua Beach
  - US Navy explosive ordnance disposal (EOD) team responded
  - Identified as 5" projectile
  - US Navy EOD detonated the item in the water



# Makua Underwater Munitions Site

## Time Critical Removal Action (TCRA) Objective/Scope

- Objective
  - Mitigate imminent threat to human health posed by the potential presence of munitions and explosives of concern (MEC)
- Scope
  - Underwater instrument-aided surface clearance
  - Environmental sampling
  - Medial disposal
  - Site restoration

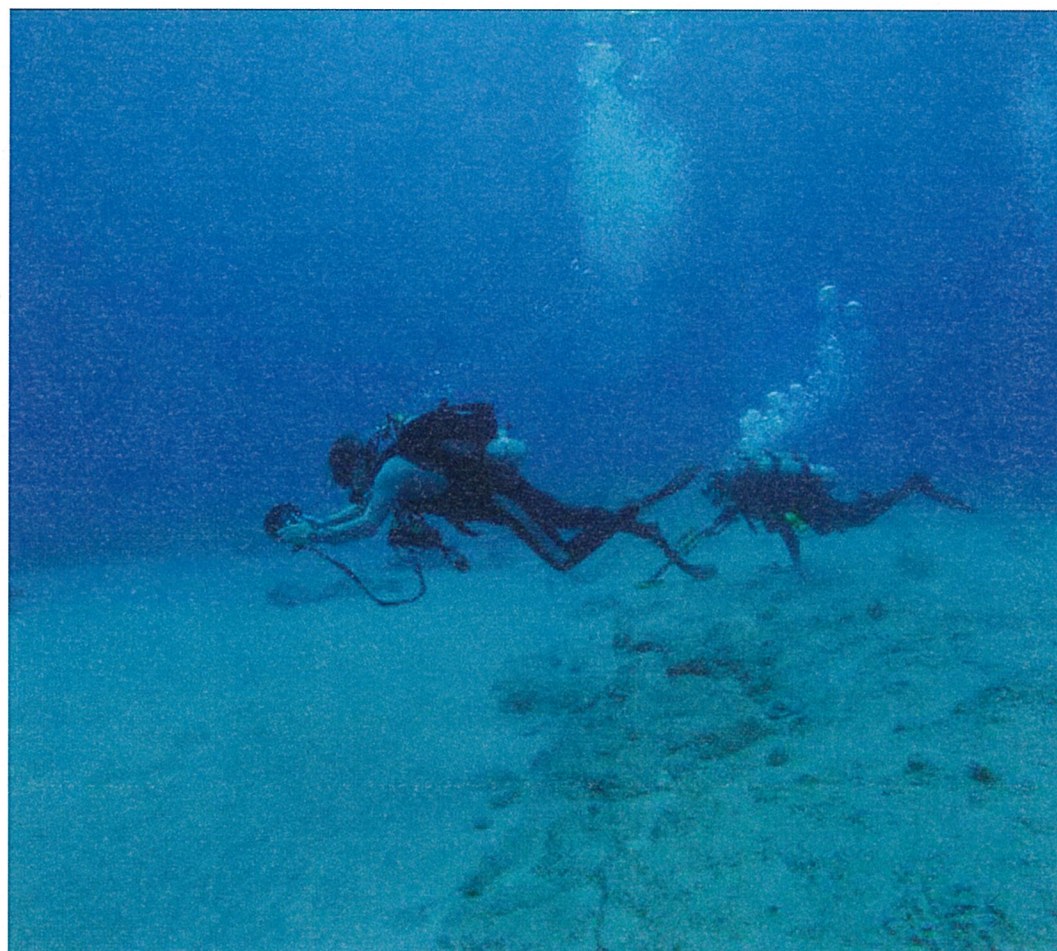




# Makua Underwater Munitions Site

## Fieldwork

- Field activities: 29 March through 30 April 2018
- Instrument-aided surface clearance conducted throughout entire ocean floor of the 20-acre site
  - Site divided into 27 grids
  - Teams of 3 UXO divers covered each grid in 10' wide transects
  - Blind seeds were placed in each grid for QC purposes





# Makua Underwater Munitions Site

## Fieldwork

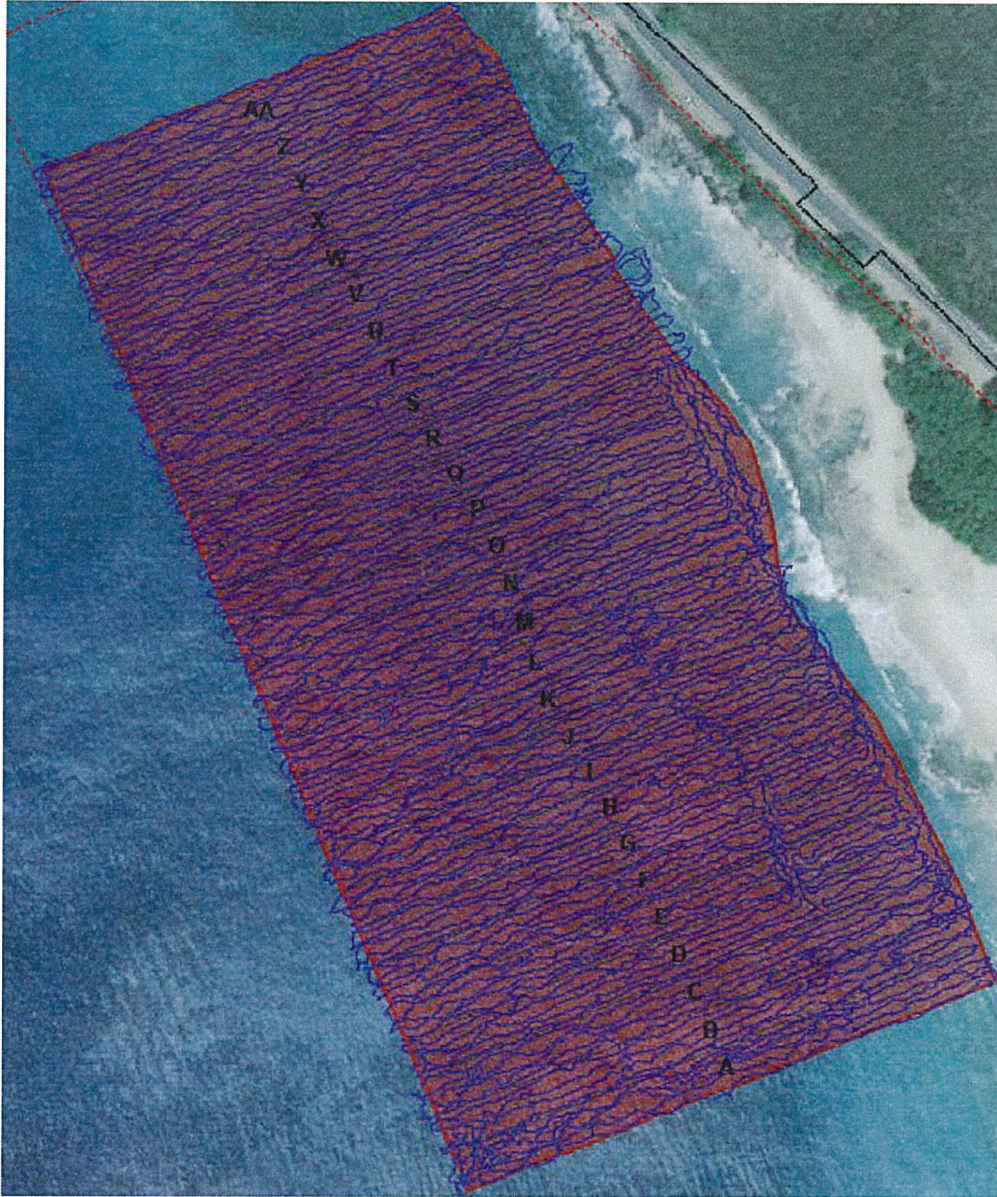


- No MEC or munitions debris encountered within the site boundaries
- Recovered 436 pounds of non-munitions related debris



# Makua Underwater Munitions Site

## Transects

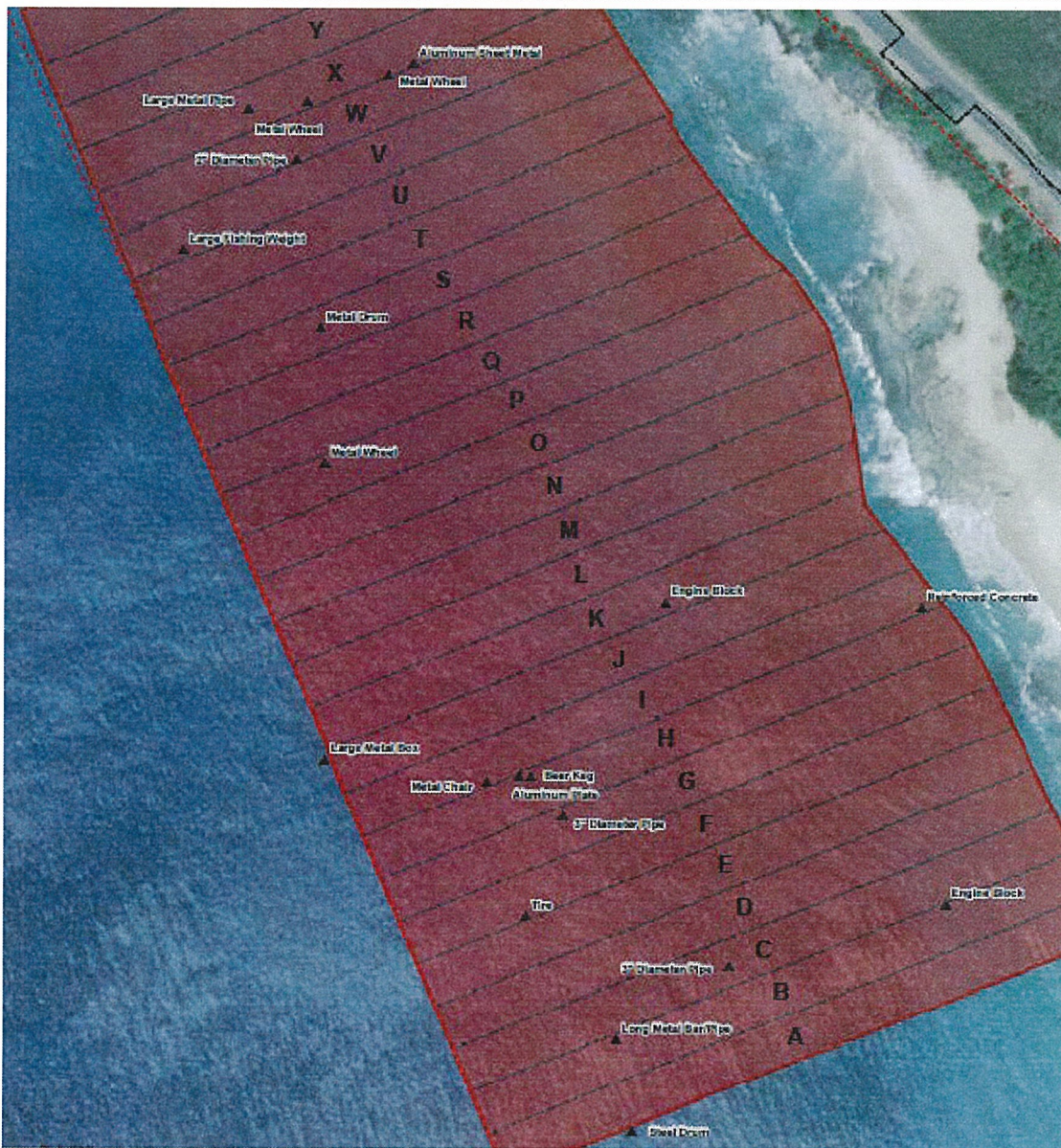


- Site divided into 27 grids
- Blue lines show transects swum by UXO divers to clear 100% of each grid



# Makua Underwater Munitions Site

## Transects



- 436 pounds of non-munitions related debris removed
  - Pipes
  - Wheels
  - Drum
  - Engine Blocks
  - Tire
  - Keg
  - Concrete
  - Fishing weight



# Questions?

