

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



LORETTA J. FUDDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

**STATE OF HAWAII  
DEPARTMENT OF HEALTH**

P.O. BOX 3378  
HONOLULU, HI 96801-3378

In reply, please refer to:  
EMD/SHWB

July 11, 2011

H0705PK

Mr. Dan Nakamura, P.E., Chief  
Environmental Programs Branch  
U.S. Army Corps of Engineers  
Department of the Army  
Honolulu District  
Fort Shafter, Hawaii 96858-5440

Dear Mr. Nakamura:

**SUBJECT:** State of Hawaii Research Development and Demonstration Hazardous  
Waste Permit

The Hawaii Department of Health issues a Research Development and Demonstration Hazardous Waste Permit to the U.S. Army authorizing to evaluate the use of remotely operated vehicles in the recovery of underwater military munitions (UWMM), and demilitarization of recovered munitions on a barge using remotely operated technology to demilitarize the recovered munitions and expose the fill of explosive munitions constituents (MC) with radiant convection heating to decompose the explosive MC leaving only environmentally benign residues.

We received your letter on April 11, 2011 and permit application dated January 10, 2011 requesting the above permit.

This permit allows the U.S. Army to conduct research, development and demonstration techniques and conditions as specified in the application and this permit at a designated site off the Waianae coast of Oahu. This permit is issued pursuant to provisions of the Hawaii Administrative Rules Chapter 11-270-65 and the U.S. Environmental Protection Agency regulations set forth in the 40 Code of Federal Regulations 270.65. Notice of this permit has been published in the Honolulu Star Advertiser newspaper on May 11, 2011 for 45 days comment period.

The activities authorized to the U.S. Army are limited to those described in the permit. This permit authorizes the described activities for a period of one year from the

Mr. Dan Nakamura  
July 11, 2011  
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issuance of the permit. Upon conclusion of the activities approved by this permit, the U.S. Army is required to provide a written report to this office.

Should you have any questions regarding this matter, please contact Mr. Paul Kalaiwaa of the Solid and Hazardous Waste Branch at 586-4226.

Sincerely,



STUART YAMADA, P.E., CHIEF  
Environmental Management Division

Enclosure: State of Hawaii Research Development and Demonstration Hazardous  
Waste Permit

c: Mr. Caleb Shaffer, WST-4, U.S. Environmental Protection Agency, Region IX

**STATE OF HAWAII  
RESEARCH DEVELOPMENT AND DEMONSTRATION  
HAZARDOUS WASTE PERMIT**

Permittee:

U.S. Office of the Deputy Assistant Secretary of the Army  
For Environment, Safety, and Occupational Health (DASA-ESOH)  
110 Army Pentagon, Room 3D453  
Washington, D.C. 20310-0110  
ID no. HIP 000 140 400

Effective date of Permit

July 11, 2011

Expiration of Permit

July 11, 2012

The permit is issued by the State of Hawaii Department of Health (HDOH) under authority of the Hawaii Revised Statutes 342J and regulations promulgated by the HDOH under the Hawaii Administrative Rules (HAR) Title 11.

This permit is issued to the U.S. Office of the Deputy Assistant Secretary of the Army For Environment, Safety, and Occupational Health (DASA-ESOH), hereafter called the Permittee, to operate a hazardous waste Research, Development and Demonstration facility located at the demonstration site Ordnance Reef (HI-06) located south and west of Pokai Bay and due west of Waianae, Hawaii at latitude 21.26 degrees N and longitude 158.12 degrees W.


The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any attachments) and the applicable regulations contained in the HAR Title 11 chapters 260 through 270 and 124 as specified in the permit. Applicable regulations are those, which are in effect on the date of issuance of this permit.

This permit is based on the assumption that the information submitted in the permit application received January 10, 2011 and subsequent submittals (hereafter referred to as the application) are accurate and that the facility will be operated as specified in the application. Any inaccuracies found in this information may be grounds for the termination or modification of this permit [HAR 11-270-41, 11-270-42 and 11-270-43] and potential enforcement action. The Permittee shall inform HDOH of any deviation from or changes in the information in the application, which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

## Permittee:

U.S. Office of the Deputy Assistant Secretary of the Army  
For Environment, Safety, and Occupational Health (DASA-ESOH)  
ID no. HIP 000 140 400

The effective date of this permit is one year after the notice of decision has been received, and remain in effect for one year, unless revoked and reissued, or terminated HAR 11-270-41 and 11-270-43 or continued in accordance with HAR 11-270-51(a).

  
STUART YAMADA, P.E., CHIEF  
Environmental Management Division

July 11, 2011  
DATE



## STATEMENT OF BASIS

### STATE OF HAWAII RESEARCH DEVELOPMENT AND DEMONSTRATION HAZARDOUS WASTE PERMIT

#### Permittee:

U.S. Office of the Deputy Assistant Secretary of the Army  
For Environment, Safety, and Occupational Health (DASA-ESOH)  
110 Army Pentagon, Room 3D453  
Washington, D.C. 20310-0110  
ID no. HIP 000 140 400

#### GENERAL INFORMATION

DASA-ESOH proposes to demonstrate the feasibility of using commercially available technologies adapted for the remote recovery of underwater military munitions (UWMM) and the at-sea demilitarization of any UWMM recovered from an area known as the Ordnance Reef (DoD sea-disposal site HI 0-6). The primary purpose of RD&D permits is to develop safe treatment alternatives to land disposal. RD&D permits must include terms and conditions to protect human health and the environment. Federal agencies are exempt from the financial responsibility requirements of the regulations.

The Army will conduct the proposed Demonstration offshore of the Waianae Coast on the Island of Oahu, Hawaii. The Demonstration's purpose is to evaluate the use of remotely operated vehicles in the remote recovery of UWMM, and demilitarization of recovered munitions on a barge using remotely operated cutting technology to demilitarize recovered munitions and expose the fill of explosive munitions constituents (MC) with radiant convection heating to decompose the explosive MC leaving only environmentally benign residues. Although the theoretical physicochemical parameters for thermal decomposition of many explosive MC have been established, such as in land-based military munitions demilitarization facilities, the use of radiant convection heating ovens at sea or for the treatment of a wide variety of military munitions that have been exposed to the marine environment for decades has not been attempted to the best of the applicant's knowledge.

The wastes will be obtained from the Ordnance Reef location. The treatment will be conducted on an offshore barge.

The Department will issue the permit with the following requirements:

1. The permit will expire one year following date of issuance.
2. Experimental procedures to follow in conducting the Demonstration are identified in the permit.

**STATE OF HAWAII  
RESEARCH DEVELOPMENT AND DEMONSTRATION  
HAZARDOUS WASTE PERMIT**

U.S. Office of the Deputy Assistant Secretary of the Army  
For Environment, Safety, and Occupational Health (DASA-ESOH)  
110 Army Pentagon, Room 3D453  
Washington, D.C. 20310-0110  
ID no. HIP 000 140 400

Date July 11, 2011

**ISSUED TO:**

U.S. Office of the Deputy Assistant Secretary of the Army  
For Environment, Safety, and Occupational Health (DASA-ESOH)  
110 Army Pentagon, Room 3D453  
Washington, D.C. 20310-0110  
ID no. HIP 000 140 400

**EXPIRATION DATE:**

One year from the signature date of the permit.

**PURPOSE:**

The Demonstration's purpose is to evaluate the use of remotely operated vehicles in the remote recovery of UWMM, and demilitarization of recovered munitions on a barge using remotely operated cutting technology to demilitarize recovered munitions and expose the fill of explosive munitions constituents (MC) and radiant convection heating to decompose the explosive MC leaving only environmentally benign residues.

**LOCATION:**

The facility is to be located at the demonstration site Ordnance Reef (HI-06) located south and west of Pokai Bay and due west of Waianae, Hawaii at latitude 21.26 degrees N and longitude 158.12 degrees W.

**ACTIONS AUTHORIZED:**

To evaluate the use of remotely operated vehicles in the remote recovery of UWMM, and demilitarization of recovered munitions on a barge using remotely operated cutting technology to demilitarize recovered munitions and expose the fill of explosive munitions constituents (MC) with radiant convection heating to decompose the explosive MC leaving only environmentally benign residues. The recovered munitions may be considered a D003 listed waste.



GENERAL CONDITIONS:

The following general requirements must be met where applicable:

- |     |                           |  |
|-----|---------------------------|--|
| 1.  | HAR 11-270-2              | Definitions  |
| 2.  | HAR 11-270-4              | Effect of a Permit   |
| 3.  | HAR 11-270-30             | Conditions Applicable to All Permits                                 |
| 4.  | HAR 11-264-4              | Imminent Hazardous Action  |
|     | HAR 11-264-11             | Identification Number  |
| 5.  | HAR 11-262-12(c)          | Required Notices   |
| 6.  | HAR 11-264-13(a)(1) & (2) | General Waste Analysis   |
| 7.  | HAR 11-264-14             | Security   |
| 8.  | HAR 11-264-15(a) & (c)    | General Inspection Requirements                                      |
| 9.  | HAR 11-264-17             | General Requirements for Ignitable, Reactive, and Incompatible Waste |
| 10. | HAR 11-264-34             | Access to Communication Alarm System                                 |
| 11. | HAR 11-264-55             | Emergency Coordinator  |
| 12. | HAR 11-264-56             | Emergency Procedures   |
| 13. | HAR 11-264-77             | Additional Reports   |
| 14. | HAR 11-264-601            | Environmental Performance Standards (Miscellaneous Units)            |
| 15. | HAR 11-265-65             | Research, Development, and Demonstration Permits                     |
| 15. | HAR 11-270-65(c)          | Terminating Permit   |
| 16. | HAR 11-270-65(d)          | Permit Renewal   |

SPECIAL CONDITIONS:

1. The permit allows the Permittee to treat the recovered UWMM within the specified off-shore area with the landowner, the Hawaii Department of Land and Natural Resources granting access.
2. The Army is responsible to have adequately trained personnel/ specialists or contractors overseeing this demonstration. The Army is to maintain a list of personnel and contractors' names, work position and years of experience in their field and education.
3. In addition to the State of Hawaii, Department of Health regulations listed above, all applicable federal regulations and city and county laws shall be complied with. In particular, please contact the State Clean Air Branch for any applicable regulations.
4. The Army is to provide any previous air emission testing that has been conducted on the Energetic Hazard Demilitarization System (EHDS).
5. Address specifically any potential for Products of Incomplete Combustion (PIC), fugitive emissions, and/or other Principle Organic Hazardous Constituents

(POHCs) that may result from the thermal decomposition treatment of various munitions.

6. This permit includes the conditions and standard operating procedures submitted in the Hazardous Waste Permit Application Treatment of Munitions Ordnance Reef (HI-06) Waianae, Oahu, Hawaii by the U.S. Army received by the HDOH May 5, 2011.
7. This permit includes the conditions submitted in the Ordnance Reef (HI-06) Coral Avoidance and Minimization of Injury Plan dated March 2011.
8. In addition to the above application, the Army must submit detailed drawings, schematics and photos of the proposed operations.
9. Record keeping, documentation, calibration schedules, monitoring data and waste analysis plan findings shall be maintained and available for review and inspection by the HDOH.
10. A project schedule and work plan must be submitted.
11. The Army shall further clarify the research goals and future application of this research.
12. All waste and material will be appropriately identified and disposed of and/or recycled, respectively.
13. Upon conclusion of this research and activities approved by this permit, the Army shall provide a detailed report of the findings and conclusions to:

Mr. Steven Chang, P.E., Chief  
Solid and Hazardous Waste Branch  
Department of Health  
919 Ala Moana Boulevard, Room 212  
Honolulu, Hawaii 96814

And

Mr. Caleb Shaffer, WST-4  
RCRA Facilities Management Office  
U.S. Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, California 94105



14. All correspondence requesting authorization of this permit is considered a part of the permit.

  
STUART YAMADA, P.E., CHIEF  
Environmental Management Division

July 11, 2011  
DATE