

**CABP APPENDIX A**  
**Integrated Pest Management Plan**

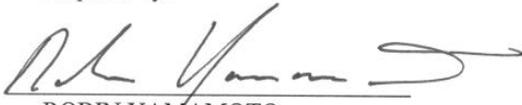
PEST MANAGEMENT PLAN

FOR

U.S. ARMY GARRISON, HAWAII

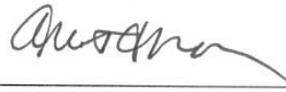
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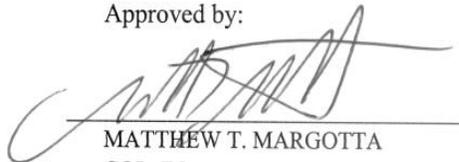
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FOR  
U.S. ARMY GARRISON, HAWAII

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## EXECUTIVE SUMMARY

The Pest Management Plan for U.S. Army Garrison, Hawaii (USAG-HI) describes the installation's pest management requirements, outlines the resources necessary for pest surveillance and control, and describes the administrative, safety, and environmental requirements of the program, and how these resources and requirements will enable USAG-HI to provide effective pest control for all of its customers.

USAG-HI consists of approximately 189,783 acres divided between Schofield Barracks area and the Fort Shafter area on the island of Oahu and the Pohakuloa Training Area (PTA) and Kilauea Military Camp (KMC) on the island of Hawaii. The mission of USAG-HI is to provide quality support to the soldiers and their dependents who live and train in the State of Hawaii.

This plan provides guidance for operating and maintaining an effective pest management program and is to be used as a tool to reduce reliance on pesticides, to enhance environmental protection, and to maximize the use of integrated pest management techniques.

This plan applies to all activities and individuals working, residing, or otherwise doing business on these installations, and will be implemented to the maximum extent practicable. At no time will pest management operations be done in a manner which violates U.S. Environmental Protection Agency laws and regulations or cause harm to personnel or the environment.

There are several objectives to this plan. One is to allow USAG-HI to meet the pest management Measures of Merit (MOMs) approved by the Defense Environmental Security Council in December 1993 and subsequently revised by the Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health) in July 2004. These MOMs have in turn been adopted by Headquarters, Department of the Army (HQDA) and passed down through the Installation Management Command (IMCOM) to all installations. These measures are: 1) to ensure all installations have pest management plans that are reviewed and updated annually by pest management professionals; 2) to maintain pesticide usage at levels equal to the average use for FY 02 and FY 03; and 3) to ensure that all DoD installation pesticide applicators are properly certified within two years of employment.

Other objectives are to ensure effective, economical and environmentally acceptable pest management and maintain compliance with pertinent laws and regulations.

In order to meet these objectives, this plan outlines integrated pest management (IPM) techniques to be used. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. It reflects current Department of Defense (DoD)/Army policies, procedures and standards and incorporates the requirements of the Environmental Protection Agency (EPA) and the State of Hawaii.

## A. BACKGROUND

1. Goal. This plan describes the pest management program for U. S. Army Garrison, Hawaii and is based on integrated pest management (IPM) techniques. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. This plan provides guidance for operating and maintaining an effective pest management program and is to be used as a tool to reduce reliance on pesticides, to enhance environmental protection, and to maximize the use of IPMs. It reflects current Department of Defense (DoD)/Army policies, procedures and standards and incorporates the requirements of the Environmental Protection Agency (EPA) and the State of Hawaii. Federal Agencies are mandated to use IPM.

### 2. Authority.

a. DoD Instruction 4150.7, DoD Pest Management Program, 22 April 1996.

b. Army Regulation (AR) 200-1, Environmental Protection and Enhancement, 28 August 2007.

3. Objectives. Integrated pest management (IPM) consists of the judicious use of both chemical and non-chemical control techniques to achieve effective pest management with minimal environmental contamination. Adherence to the plan will ensure effective, economical and environmentally acceptable pest management and will maintain compliance with pertinent laws and regulations, and will enable the garrison to continue to meet the objectives of the Measures of Merit (MOMs) approved by the Defense Environmental Security Council in December 1993 and revised by the Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health) in July 2004 (Appendix A). These objectives are 1) to ensure all installations have pest management plans that are reviewed and updated annually by pest management professionals, 2) to maintain pesticide usage at levels equal to the average use for FY 02 and FY 03, and 3) to ensure that all DoD installation pesticide applicators are properly certified within two years of employment.

## B. RESPONSIBILITIES

### 1. Commander, USAG-HI.

a. Designate the Directorate of Public Works (DPW) Entomologist, Mr. Robin Yamamoto, as Pest Management Coordinator (PMC) for all pest management activities.

b. Approve and support the pest management plan.

c. Ensure that installation personnel performing pest control receive adequate training, and achieve pest management certification as required.

d. Ensure that all pest management operations are conducted safely and have minimal impact on the environment.

### 2. Director of Public Works.

a. Determine the pest management requirements for the installation.

b. Request and monitor contract pest management operations.

c. Obtain and maintain adequate supplies of pesticides and pesticide dispersal equipment, and ensure that the equipment is properly maintained.

d. Maintain adequate records of pest management operations.

3. Director of Community Activities.

a. Obtain and maintain adequate Golf Course supplies of pesticides and pesticide dispersal equipment, ensure that pesticides are properly stored and that the equipment is properly maintained.

b. Ensure that Golf Course personnel performing pest control receive adequate training, and achieve pest management certification.

c. Maintain adequate records of pest management operations.

4. Assistant Chief of Staff, Directorate of Plans, Training and Mobilization (DPTM)

a. Obtain and maintain adequate supplies of pesticides and pesticide dispersal equipment for the training ranges, ensure that pesticides are properly stored and that the equipment is properly maintained.

b. Ensure that range maintenance personnel performing pest control receive adequate training, and achieve pest management certification.

c. Maintain adequate records of pest management operations.

5. Director of Health Services.

a. Chief, Department of Preventive Medicine.

(1) Conduct surveillance for pests which could adversely affect the health and welfare of the installations.

(2) Coordinate with local health officials to determine the prevalence of disease vectors and other public health pests in the area surrounding the installations.

(3) Monitor pesticide sales at the Self-Help Stores, the Commissary, and the Post Exchange.

(4) Evaluate the health aspects of the pest management program.

b. Chief, Veterinary Services.

(1) Conduct surveillance for pests which destroy food stored in installation food storage facilities.

(2) Provide advice to pet owners concerning pests which may adversely affect their animals.

6. Pest Management Coordinator, DPW.

a. Prepare, monitor, and update the installation pest management plan.

b. Coordinate with activities conducting pest surveillance or controlling pests to ensure all applicable information is recorded and reported as required by this plan.

c. Monitor the types, distribution and use of pesticides on the installation, and report the total amount of active ingredient used by the installation each fiscal year.

d. Function as a point of contact between those individuals who store and apply pesticides (e.g., DPW pest control shops, golf course personnel, DPTM personnel, pest control contractors, tenant activities) and activities or individuals who document or deal with pesticide use in their programs (e.g., DPW Environmental Division, Safety Office, Fire Department, Industrial Hygienist).

e. Oversee the technical aspects of the self-help program with respect to pest control items and training of family housing residents.

f. Monitor certification and continuing pest management training for DoD installation pesticide applicators and ensure that all DoD installation pesticide applicators are properly certified within two years of employment.

g. Coordinate and monitor contracts dealing with pesticide application.

h. Coordinate with local, State and Federal agencies, as necessary, to conduct the installation's pest management program.

i. Serve as the initial point of contact for all pest management issues.

#### 7. Building Occupants.

a. Apply good sanitary practices to prevent pest infestations.

b. Use all non-chemical pest control techniques available to the fullest extent before requesting further assistance from DPW.

c. Cooperate fully with DPW personnel and contractors in scheduling pest management operations, to include preparing the areas to be treated.

#### 8. Pest Management Personnel.

a. Use integrated pest management techniques to the maximum extent possible.

b. Control pests according to the provisions of this plan.

c. Operate in a manner that minimizes risk of contamination to the environment and personnel.

d. Ensure that superiors are kept informed of changes in pest management requirements.

e. Request pest management supplies and equipment in a timely manner.

f. Maintain effective liaison with installation health and environmental officials.

#### 9. Pest Management Quality Assurance Evaluators, DPW

a. Ensure that pesticides are properly applied by contractors.

b. Ensure that proper records are maintained.

c. Maintain effective liaison with installation health and environmental officials.

## C. GENERAL

1. Installation Description. The United States Army Garrison, Hawaii (USAG-HI) is comprised of twenty-two sub-installations located throughout the Hawaiian Islands sited on fee simple, lease and ceded lands. Total acreage of all installations is 189,782.86 acres. The names of the installations and their size are at Appendix B.

2. Plan Maintenance. The Installation Pest Management Coordinator maintains the pest management plan. Changes are made to the plan throughout the fiscal year as necessary and the entire plan will be reviewed and updated annually. A plan update form (PUF) and pesticide use proposal (PUP) will be submitted to Army Environmental Command (AEC) by October 31 for technical review unless there are major changes to the plan. The latest PUF and PUP submissions are at Appendix C.

## D. INTEGRATED PEST MANAGEMENT

1. Description. Integrated pest management (IPM) is the use of multiple techniques to prevent or suppress pests in a given situation. Although IPM emphasizes the use of non-chemical strategies, chemical control may be an option used in conjunction with other methods. Integrated pest management strategies depend on surveillance to establish the need for control and to monitor the effectiveness of management efforts.

2. IPM Approach. The four basic methods of pest control described below are the heart of IPM, and are descriptive of the philosophy used on USAG-HI installations to manage pests. While any one of these methods may solve a pest problem, often several methods are used concurrently, particularly if long term control is needed. For example, screens may be used to prevent mosquitoes from entering buildings, breeding areas may be filled in or drained to eliminate larval habitat, and pesticides may be used to kill adult mosquitoes. Screens will protect people inside, but do little to keep people from being bitten outdoors. Larval control may eliminate mosquito breeding on the installation, but may not prevent adult insects from flying onto the installation from surrounding areas. Insecticides may kill a majority, but not all of the adult mosquitoes, so those remaining can constitute a breeding population. Individually, each control endeavor may reduce the problem to a degree, but will not provide long lasting control.

Although chemical control is an integral part of IPM, non-chemical control is stressed. Chemical control is almost always a temporary measure and, in the long run, more expensive. Non-chemical control, which may initially be more expensive than using chemicals, will usually be more cost effective in the long run. Non-chemical controls also have the added advantage of being non-toxic, thereby reducing the potential risk to human health and the environment.

a. Mechanical and Physical Control. This type of control alters the environment in which a pest lives, traps and removes pests where they are not wanted, or excludes pests. Examples of this type control include: harborage elimination through caulking or filling voids, screening, mechanical traps or glue boards, and nets and other barriers to prevent entry into buildings.

b. Cultural Control. Strategies in this method involve manipulating environmental conditions to suppress or eliminate pests. Elimination of food and water for pests through good sanitary practices may prevent pest populations from becoming established or from increasing beyond acceptable limits. An example of this would be to spread manure from stables onto fields for drying to prevent flies from breeding.

c. Biological Control. In this control strategy, predators, parasites, disease organisms, or modified individuals of the pest species are used to control pest populations. Sterile flies may be released to lower reproduction rates. Viruses and bacteria which control growth or otherwise kill insects may be used.

Parasitic wasps may be introduced to kill eggs, larvae or other life stages. Biological control may be effective in and of itself, but is often used in conjunction with other types of control.

d. **Chemical Control.** Pesticides kill living organisms, whether plants or animals. At one time, chemicals were considered to be the most effective control available, but pest resistance rendered many pesticides ineffective. In recent years, the trend has been to use pesticides that have limited residual action. While this has reduced human exposure and lessened environmental impact, the cost of chemical control has risen due to requirements for more frequent application. Since personal protection and special handling and storage requirements are necessary with the use of chemicals, the overall cost of using chemicals as a sole means of control can be quite costly when compared with non-chemical control methods.

3. **IPM Outlines.** Integrated Pest Management Outlines are at Appendix D. These list various pests that may be encountered and non-chemical and chemical controls used to deal with them. New outlines will be added to Appendix D as new pests or sites are encountered that require surveillance or control.

## E. PRIORITY OF PEST MANAGEMENT WORK

Pest management performed on USAG-HI by the DPW Pest Control Shop in order of priority are:

### 1. Real Property Pests (Structural/Wood Destroying Pests).

a. Operations and Maintenance, Army (OMA) structures shall be inspected at least once a year for the presence of wood rots and structural pests such as termites, powder post beetles and for the conditions causing or contributing to these problems. Results of these inspections will be recorded on DD form 1070. Where structural problems exist and contribute to the aforementioned infestations, such areas will be noted and diagrammed to facilitate correction by DPW maintenance personnel. These corrections will be submitted through the DPW Work Management Office and coordinated with the appropriate building custodian or manager. Elimination of termite infestations shall be accomplished by the use of appropriately labeled termiticides at the maximum allowable rate alone or in combination with an inert physical barrier such as Termi-mesh, Basaltic Termite Barrier (BTB), etc. When drywood termites cannot be adequately controlled by chemical "spot-treatments," the DPW Entomologist shall be notified with sufficient information to facilitate tent fumigation via service contract.

Maintenance for buildings occupied by U.S. Army Medical Command (MEDCOM) are the responsibility of MEDCOM. The IPM procedures for MEDCOM facilities are included in the Pest Management Plan for Tripler Army Medical Center (see Appendix E).

Maintenance for Family Housing structures are done under contract through Actus Lend Lease LLC (see Section I.7).

b. New structures should incorporate the latest non-chemical and chemical technologies designed to prevent future termite infestations while at the same time reducing the amount of pesticides used, including the use of plastic and steel building materials and the use of Termi-mesh and BTB. Complete BTB installations have been installed under some structures built by USAG-HI. There have been no reports to date of infestation by subterranean termites where the barrier was properly installed.

c. Baits containing active ingredients that will eliminate Formosan subterranean termite colonies will be placed at selected sites by contract. The DPW Entomologist will select sites to install bait stations based on reports of termite activity by pest control personnel. The current plan for installation of termite colony elimination systems is at Appendix F. If termite colonies are eliminated, it will not be necessary to use pesticides to protect structures.

## 2. Disease Vectors and Medically Important Arthropods.

a. Mosquito control is aimed at both larval and adult stages. Larval control is primarily performed from 1 November to 30 April via treatments with approved pesticides to stagnant water breeding areas. In some cases mosquitoes breed in containers left out by building occupants. These occupants are instructed on the importance of removing these breeding sites either directly by the PMC or the Tripler Army Medical Center (TAMC) Preventive Medicine Entomologist, or through the Community Commander's office. Adult mosquito populations are currently controlled on an as needed basis, based on customer complaints. A listing of mosquito species which occur in Hawaii, their habits, breeding sites and the diseases they are capable of transmitting is included at Appendix G.

b. The control of house flies, moth flies (psychodidae), blow flies and other such filth flies is primarily directed at eliminating or isolating the source of these pests. Such efforts include: installation of screens for the purposes of exclusion; elimination of breeding material; steam cleaning and frequent change of dumpsters associated with food handling facilities and residences; frequent change of animal bedding and manure elimination at stables; timely disposal of road killed animals; and cleaning of drains to eliminate moth flies. Where pests have entered areas of concern, space spray applications of pyrethrums or their synthetic substitutes are used.

c. Bees, wasps, spiders and other stinging and biting arthropods are found throughout the installation. Although these can sometimes cause allergic reactions in some people, for the most part they are a minor problem. Control measures are initiated based on customer complaints.

## 3. Stored Product Pests.

a. Primary locations of concern for stored product insects are the Post Exchanges, Commissaries and Dry-goods storage areas of each of the food handling facilities. Inspections are conducted by the Commissary Officer, respective store manager(s), Department of Preventive Medicine personnel, and Veterinary Services personnel. Such inspections, even with negative findings, stress the importance of sanitation and structural repairs conducive to pest elimination.

b. Treatment of infested material and areas consists of a thorough cleaning of the area as directed by the DPW Pest Control Shop, residual treatments in the case of insect infestations, space treatment when appropriate, and removal of the infested material where possible. Where considerable infestation has occurred, fumigation by pallet shall be conducted. The materials will be removed from the building and re-stacked in an unoccupied structure or area through coordination with the DPW Pest Control Shop. Aluminum Phosphide will be introduced to the covered and sealed stack as per labeled rate and directions. The shop will coordinate all aspects of the fumigation with security forces to insure no access during the treatment period. Proper protective equipment and procedures shall be used during all phases of the fumigation. After the proper duration and concentration of fumigant has been achieved, the shop shall certify the site as gas free using the appropriate test equipment.

c. Rodent infestations are controlled by the physical elimination of access and harborage in combination with mechanical traps and poison bait stations. These bait stations must be inspected monthly to insure that they do not provide a source of insect pests of stored products.

## 4. Ornamental Plant and Turf Pests.

a. Control of turf pests is largely restricted to the golf courses, a non-appropriated fund activity. Golf course personnel perform all pesticide application on the courses following the USAG-HI Golf Course Maintenance Pesticide Management Program. All requests for pesticide use approvals are sent to the USAG-HI Entomologist. A copy of the USAG-HI Golf Course Maintenance Pesticide Management Program is attached at Appendix H.

b. Control of pests on shade trees, specimen plantings and foundation plantings is limited to chemical applications for the control of leaf chewing and scale insects. The major pest problems include various noctuid caterpillars in monkey pod, scale insects on hibiscus and heliconias and Chinese rose beetles on various broadleaf foundation plantings.

#### 5. Undesirable Vegetation.

a. Weed control is largely accomplished through Standing Operations Orders (SOO) and consists of fence lines, ditches, sidewalks, street curbs, roadsides, substations, Area X at Schofield Barracks (SB), the Wheeler Army Airfield (WAAF) airstrip, range control areas, around air conditioning chiller units, bus stops, restrooms, and all main avenues and thoroughfares. Treatment will include spraying 18 inches around all obstacles along fence lines (i.e., trees), utility poles, light poles, fire hydrants, sign post, manholes, guy wires, and meter/utility boxes which are located within improved areas. The approximate total area to be treated, inclusive of all areas mentioned are approximately 50 acres per quarter for Fort Shafter (FS) and TAMC, and 150 acres per quarter for SB and WAAF. Areas not previously mentioned are treated via service contracts on an as needed basis. Such areas require selective or complete weed control and include newly constructed facilities, recreation areas, building entrances, target ranges, impact areas, paved areas and miscellaneous roadsides.

b. The primary chemicals used for complete control of vegetation at the time of this writing include glyphosate (Roundup, Aquamaster, etc) and sulfometuron methyl (Oust), the latter being used in outlying areas not subject to runoff and requiring long term control. The use of all herbicides, whether in-house or by service contract, requires approval of the USAG-HI Entomologist.

c. In FY 07 herbicide/fungicide use totaled 6810 pounds of active ingredient, or almost 79% of total pesticide used. The total herbicide use for the FY 02-03 baseline was 5695 pounds of active ingredient. The increase of 1115 pounds (20%) was due to aerial application of herbicide to the training ranges. Range Maintenance (DPTM) contracted to apply 3000 pounds active ingredient of herbicide by helicopter in FY 07. The Aerial Validation Plan (AVP) for FY 08 is at Appendix I. Usage can be further reduced by increasing mechanical controls (mowing, weed-whacking) of vegetation.

#### 6. Vertebrate Pests.

a. Rodent control is directed at identifying the point of entry into a structure. Once entry has been identified, structural modifications are made or recommended to exclude the rodents. Additional control procedures using traps and/or poison baits may be used to control the existing infestation of rodents. However, this should be done only as a last resort effort. Additional information on rodent control is found at E.3 Stored Product Pests, paragraph c.

b. Other vertebrate pests such as mongooses, cats and dogs are trapped or captured on an as needed basis. Stray animal control in the main post area is accomplished by the game warden.

c. Birds as pests are also of concern. Much more important than the nuisance value of mynah birds and English sparrows is the disease potential carried by manure build up in nesting and roosting areas. Additionally, cattle egrets present a serious air strike hazard at Wheeler Army Airfield (WAAF). These problems have been addressed through an inter-service support agreement with the U.S. Department of Agriculture, Wildlife Service (USDA-WS) (Appendix J).

d. It has also been arranged for the USDA-WS to eliminate other vertebrate pests such as wild pigs from certain areas, and the brown tree snake if it introduced. The Hawaii Brown Tree Snake Emergency Response Protocol is included at Appendix K.

## 7. Household and Nuisance Pests.

a. In general, jobs are issued to the DPW Pest Control Shops by the Service Order Desk in appropriate priority. The pest controllers contact the customers for information on the problem and to arrange a visit. At that time a survey is conducted to determine whether a chemical application is necessary. All other alternatives are considered at this time, especially where they may directly affect the cause of the problem and not just the symptom. Treatments, if necessary, are usually made using hand compressed air sprayers with appropriate pesticides or ready-to-use aerosols. Occupants are advised as to any pesticide hazards and are instructed on precautions, if necessary, for pets, children, plants, or area re-entry. Additionally, notes on structural deficiencies or other situations leading to pest problems, such as water leakage, lack of screening or entry holes, are reported for corrective action by the Preventive Maintenance workers or other trades. Occupants or employees are educated in the area of pest prevention through sanitation and elimination of harborages. The brochure at Appendix L is provided to occupants as necessary by DPW Facility Managers. Pesticides used for nuisance pest treatment shall be applied in strict accordance with label recommendations.

b. Cockroach control in food handling facilities is of particular importance due to the high visibility and morale support implications. Buildings are scheduled for surveillance operations by Tripler Army Medical Center Department of Preventive Medicine personnel approximately every four weeks. These facilities are inspected regularly to check cockroach populations and advise the management on practices conducive to reducing infestations. Such recommendations include improvements to sanitation and elimination of harborage (to include corrugated cardboard boxes) and operational improvements. Restaurant managers are to be contacted at least three days prior to an anticipated treatment. This facilitates proper cleaning, covering of food and utensils and access to storage rooms.

c. Areas not properly prepared are documented and forwarded to the USAG-HI Entomologist for action. Treatments shall not be made to any facility that has not taken appropriate sanitation preparations for a treatment. Treatments may include a crack and crevice residual treatment, as well as the use of insect growth regulators (IGRs) and baits as part of a multidimensional chemical control program. Each of the treatments shall use approved materials and be coordinated through the restaurant managers.

8. Quarantine Pests. Retrograde cargo may be encountered infrequently, and will be inspected for pests on an individual basis. USDA-WS will be called in if the pest brought in is the brown tree snake (see Section 6. Vertebrate Pests).

9. Other Pest Management Requirements. Pest management technicians are responsible for small non-domestic animal carcass removal. In addition, the pest management technicians provide services for odor control in buildings and other structures on the installation. Odors may arise from: dead animals in walls, crawl spaces, etc.; decaying vegetation, molds and fungi; or from other sources.

## F. SALE AND DISTRIBUTION OF PESTICIDES.

1. Army Air Force Exchange System (AAFES) Facilities. All pesticides sold at AAFES stores are registered by the EPA and the State of Hawaii. No restricted use products are sold. A spill cleanup kit is on hand in the immediate vicinity of the home and garden pesticide storage area. Store personnel are familiar with the use of the cleanup kit and with installation spill contingency procedures. Additional guidelines on pesticides in exchanges can be found in paragraph 4-7k(2), Department of the Army Pamphlet (DA PAM) 40-11.

2. Defense Commissary Agency Facilities. All pesticides sold at Commissary stores are registered by the EPA and the State of Hawaii. No restricted use products are sold. Pesticide products are ready-to-use. A spill cleanup kit is on hand. Store personnel are familiar with the use of the cleanup kit and with

installation spill contingency procedures. Additional guidelines on pesticides in commissaries can be found in paragraph 4-7k(2), DA PAM 40-11.

3. Veterinary Treatment Facility (VTF). Products containing pesticides are sold to Veterinary Clinic customers for their own use. These products are registered by EPA and the State of Hawaii, and are labeled for application to animals. Animals are not treated (e.g., dipped) for fleas, ticks or other ectoparasites in the clinic.

## G. HEALTH AND SAFETY.

1. Requirements. Pest control personnel, whether employed in-house or contracted, are required to use all appropriate personal protective devices and must apply all materials as per label recommendations. In-house personnel (DPW, DPTM, Golf Course personnel) receive cholinesterase/liver function testing semiannually. Contract personnel receive detailed references to safety requirements through their respective Performance Work Statements as well as during the Pre-Start Conference.

2. Hazard Communication. In-house pest control personnel will be given monthly hazard communication training. Material Safety Data Sheets for all pesticides and substances used in the pest management program will be kept in the pest management shops.

3. Personal Protective Equipment. Approved masks, respirators, chemical resistant gloves and boots, and protective clothing (as specified by applicable laws, regulations, and/or the pesticide label) will be provided to the in-house pest controller by the government. These items will be used as required during the mixing and application of pesticides. Pesticide contaminated protective clothing will NOT be home laundered, but will be laundered at the installations' expense. Severely contaminated clothing will not be laundered but will be disposed of in accordance with current regulatory requirements. A copy of the Pest Control Shop Respirator Program, which describes shop policy for the use, maintenance and fit testing of respirators is at Appendix M.

4. Pest Control Vehicles. Pesticides shall be transported only in lockable storage compartments on designated pest control vehicles. Pesticide will not be transported in the cab of the vehicle at any time. The use of the assigned vehicle for purposes other than pest control is NOT permitted. Transportation of pesticides (from supply, delivery of self-help items, etc.) will be accomplished using the vehicle assigned to the pest controller. Care should be taken to secure pesticides to prevent damage to the containers and spillage of the chemicals. At no time will pesticides be left unsecured in the vehicle when unattended. A portable eye lavage and pesticide spill response kit will be carried in the pest control vehicle when in use. Pest control vehicles will be clearly and permanently marked as "Contaminated with Pesticides".

5. Spill Kit and Spill Response. An adequate pesticide spill cleanup kit shall be maintained at the pesticide storage area of each installation. In addition, spill cleanup kits are kept on all pest control vehicles. Spill cleanup procedures as well as a list of components of the spill kit can be found in the 25<sup>th</sup> Infantry Division (Light) and U.S. Army, Hawaii Spill Prevention Control and Countermeasures (SPCC) at <https://dpwhawaii.army.mil/ECO/>. Section 3 of the SPCC which addresses the Installation Spill Contingency Plan is at Appendix N. Additional information can be found in the Armed Forces Pest Management Board Technical Guide (AFPMB TG) #15, Pesticide Spill Prevention and Management.

6. Fire Protection. Pesticide inventories at all storage facilities will be provided to the Fire Department, and will be updated quarterly or as necessary due to major inventory changes. Current inventories are at Appendix O. The Fire Department will prepare pre-fire plans for all such facilities. Evacuation plans will be posted at appropriate locations by the DPW Safety Office.

## H. ENVIRONMENTAL CONSIDERATIONS.

1. Protection of the Public. Precautions will be taken during pesticide application to protect the public, both on and off the installations. Care will be taken when applying pesticides outdoors that spray drift is kept away from individuals, including the applicator, and such application will not be performed when the wind speed is greater than 5 miles per hour. Appropriate personal protective equipment will be used at all times. At no time will any pesticide be used in a manner inconsistent with its label.

2. Sensitive Areas. Sensitive areas that must be considered before pest control operations are conducted are listed on each pesticide label. No pesticide will be applied directly to wetlands or water areas (lakes, rivers, etc.) unless use in such sites is specifically approved on the pesticide label. Pest control at Kilauea Military Camp (KMC) must also conform to the guidelines of the National Parks Service. The Pest Management Program for KMC is at Appendix P.

3. Endangered Species and Protected Species. A list of endangered species and protected species found on USAG-HI sub-installations is provided in Appendix Q. Possible effects of pest management operations on these species will be considered by the DPW Natural Resource Manager and the IPMC before pest management operations are conducted.

4. Pollution Abatement Procedures (pesticide spills). Pollution abatement has been already discussed under G.5. Spill Kit and Spill Response.

## I. ADMINISTRATION.

1. Staffing. The Schofield Barracks pest control shop has four permanent pest controller positions filled. The TDA for Schofield Barracks calls for six pest controllers and one supervisor. The Fort Shafter pest control shop has two permanent pest controller positions filled. The TDA for Fort Shafter calls for two pest controllers.

In addition to personnel in the pest control shops, personnel from the golf courses, DPTM (Range Maintenance), DPW Environmental Division and KMC apply pesticides as certified applicators. However pest management is not their primary duty.

A list of personnel involved with pest management is provided in Appendix R.

2. Vehicles. The pest control vehicles currently on hand are listed in Appendix S. Vehicles are pickup trucks with a utility bed having external lockable storage compartments.

3. Materials. All materials, buildings and equipment are furnished by the government. Pesticides and pesticide application equipment required for the program are maintained on the installation. Pesticides are ordered as required to maintain at least three months supply with not more than one year supply in stock. Pesticides that are required for use during a specific time of the year will be ordered in a timely manner to ensure effective application.

The pest control supervisor will maintain a current inventory of stored pesticides at all times. Inventories of pesticides are provided in Appendix O. An inventory of pesticide application equipment is also provided in Appendix S. Equipment inventories will be updated as changes occur. A book containing pesticide specimen labels and material safety data sheets for the pesticides used will be available at the storage site.

4. Facilities (pesticide storage sites). Location of each pesticide storage site is provided as Appendix T.

5. Reports and Records. Pesticide applicators will maintain complete, permanent daily pesticide application and surveillance records, DD Form 1532-1 or equivalent. DD Form 1532, Pest Management Report, will be used monthly to report pesticide use and pest control operations. DD Form 1532 will be prepared by the pest control supervisor and maintained permanently at the pest control shop and a copy will be forwarded to the PMC.

6. Training.

a. All in-house pest controllers are required to obtain Department of Defense Certification in pesticide selection and application (DD Form 1826) within two (2) years of employment. Re-certification in the appropriate categories is required every three (3) years thereafter. Personnel who have not been trained and do not possess valid Certification will not be allowed to handle, mix or apply pesticides on their own. However, when under the direct supervision of a certified pesticide applicator, the uncertified person may be allowed to handle, mix and apply pesticides. The PMC and the individuals who evaluate the quality of work of pest control contracts (Quality Assurance Evaluators) are required, at a minimum, to complete the DoD Pest Management Quality Assurance Evaluator/Installation Pest Management Coordinator Course and be accredited. Re-accreditation is required every three years.

b. Personnel who fail to attain a satisfactory grade on the recertification examination or personnel who are not able to attend the training will be given an opportunity to take a follow-up examination within 120 days. Pesticide applicators who fail to attain a satisfactory grade on the follow-up examination will be required to retake the certification training course and obtain a passing grade on the examination before being allowed to perform pest control again.

c. On-the-Job-Training (OJT)

(1) Any new employee who has been assigned to the pest control shop will receive OJT on pest management activities from the shop supervisor and other qualified personnel. This employee will be assigned to the most qualified pesticide applicator who will demonstrate proper and safe application of pesticides as well as the proper use of pesticide dispersal equipment to attain required field experience and learn the responsibilities of the pesticide applicator; biology and identification of common pests requiring control; proper application and safe use of pesticides; proper storage, mixing and disposal procedures of pesticides; and other pertinent information which is required to operate the pest management services effectively and efficiently.

(2) The OJT will continue until the new employee exhibits adequate proficiency in his performance. Verification of his performance and practices at the job sites will be determined through field observations.

(3) The OJT will continue for 6 to 12 months depending upon the capabilities of the new employee. After his tenure in OJT has been completed and his performance has been evaluated by the supervisor as satisfactory, the new employee will be eligible for the pest management certification training course. Personnel who fail to obtain a passing grade on the examination will continue their OJT until they are ready to take the follow-up examination. Pest control personnel who fail to attain a passing grade on the follow-up examination will be considered unqualified as a pesticide applicator and personnel action will be taken to remove the individual from performing pest management functions.

7. Contracts.

a. Family Housing. Pest management in Family Housing areas is done by a sub-contract through Actus Lend Lease LLC. The contract for pest management for Family Housing is at Appendix U.

Pesticide use for Family Housing is not included in the Garrison's report per the memorandum on "Installation Management of Pest Control Activities on Residential Communities Initiative (RCI) Properties at Army Installations" at Appendix V.

b. The Termite Plan is also performed under contract (see section E.1.c and Appendix F). Additional contracts include herbicide use by landscapers and contractors who maintain firebreaks in training areas and pest control at the Pohakuloa Training Area. One time contracts are let under certain situations, i.e. the need to fumigate a building. Contracts will be executed if the services are economically beneficial to the Government and certified contractors are available, or if application by trained and certified personnel is not feasible because of remote location, project size, or manpower, time or equipment limitations.

In accordance with DoD policy, all pesticide use on Army property shall be recorded and submitted to the PMC. Furthermore, all contract personnel who apply pesticides on USAG-HI installations will be certified as "commercial applicators" by the State of Hawaii Department of Agriculture. Depending on the type of application, certification will be in one or more of 16 different categories or sub-categories. The contractor will provide photo copies of employee certification documents to the QAE before performing services on an installation..

The Service Contract Branch, Engineering Division of the Directorate of Public Works maintains the current files for all such work.

Pesticide misuse-which includes use inconsistent with the label is a violation of Federal Law. In accordance with DoD policy (see DoD 4150.7-P), USAG-HI personnel will record and report any instances of pesticide misuse and falsification of records by contractors to the State of Hawaii. Furthermore, USAG-HI personnel will cooperate with Hawaii regulators and the EPA in any subsequent investigation or actions.

## J. PEST POPULATION MONITORING

1. Formosan subterranean termites. Populations of this insect will be tracked either by the annual inspection reports by pest controllers, by reports by building occupants, or by staking and monitoring by the PMC. The resulting data will indicate which structures are susceptible to future attack by the termites, and may also give a measure of how close the installation is to the ultimate goal of eliminating the insect from its boundaries.

2. German cockroaches. Populations of German cockroaches in food handling establishments are monitored by Preventive Medicine technicians utilizing sticky traps. Threshold levels which will trigger a pesticide application by pest controllers have been established by the Preventive Medicine entomologist. Efficacy of the pest control program for each establishment can be measured in the number of times a year that cockroach populations exceed the threshold level.

3. Rodents. A survey of rodent population utilizing sticky traps and snap traps should be done several months prior to demolition of any structure. If rodents are found to be present intensive trapping should be done to prevent infestation of surrounding structures after demolition occurs.

## K. PEST MANAGEMENT REFERENCES.

### 1. Federal Laws.

a. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1947; amended by P.L. 92 516 (82 Stat. 973) and P.L. 94-140 (89 Stat. 751).

- b. Federal Environmental Pesticide Control Act of 1972 (7 U.S.C. 135 et. seq.)
- c. President Carter's 1979 Executive Order requiring all Federal Agencies to use integrated pest management technology for pest control and to reduce use of toxic pesticides.
- d. Migratory Bird Treaty Act.
- e. Endangered Species Act.
- f. Occupational Health and Safety (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and Respiratory Program Standard (29 CFR 1910.134).
- g. Title 40, Code of Federal Regulations, Protection of Environment, parts 150 - 189.

2. Regulations.

- a. DoD Dir 4150.7, DoD Pest Management Program, 22 April 1996.
- b. AR 11-34, The Army Respiratory Protection Program, 15 February 1990.
- c. AR 40-5, Preventive Medicine, 25 May 2007.
- d. AR 200-1, Environmental Protection and Enhancement, 28 August 2007.
- e. AR 200-3, Natural Resources Land, Forest, and Wildlife Management, 28 February 1995.

3. U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) Technical Guide No. 138, Guide to Commensal Rodent Control, December 1991.

4. Armed Forces Pest Management Board Technical Guides.

- a. TG Number 1 - AFPMB Publications April 2003
- b. TG Number 6 - Delousing Procedures for the Control of Louse-borne Disease During Contingency Operations March 6, 2002 - reviewed October 2005
- c. TG 7 - Installation Pesticide Security August 2003
- d. TG 11 - Hydrogen Phosphide Fumigation with Aluminum Phosphide
- e. TG 13 - Ultra Low Volume Dispersal of Insecticides by Ground Equipment
- f. TG 14 - Personal Protective Equipment for Pest Management Personnel
- g. TG 15 - Pesticide Spill Prevention and Management
- h. TG 16 - Pesticide Fires: Prevention, Control, and Cleanup
- i. TG 17 - Military Handbook - Design of Pest Management Facilities
- j. TG 18 - Installation Pest Management Program Guide March 11, 2003
- k. TG 20 - Pest Management Operations in Medical Treatment Facilities November 2005

- l. TG 21 - Pesticide Disposal Guide for Pest Control Shops
- m. TG 22 - Guidelines for Testing Experimental Pesticides on DoD Property
- n. TG 24 - Contingency Pest Management Guide May 2, 2006
- o. TG 26 - Tick-Borne Diseases: Vector Surveillance and Control February 2006
- p. TG 27 - Stored-Product Pest Monitoring Methods June 2005
- q. TG 29 - Integrated Pest Management in and around Buildings July 2003
- r. TG 30 - Filth Flies: Significance, Surveillance and Control in Contingency Operations, March 2006
- s. TG 31 - Contingency Retrograde Washdowns: Cleaning and Inspection Procedures
- t. TG 34 - Bee Resource Manual with emphasis on The Africanized Honey Bee, November 2005
- u. TG 36 - Personal Protective Techniques Against Insects and Other Arthropods of Military Importance
- v. TG 37 - Guidelines for Reducing Feral/Stray Cat Populations on Military Installations in the United States
- w. TG 38 - Protecting Meal, Ready-to-Eat Rations (MREs) and Other Subsistence During Storage June 2005
- x. TG 39 - Guidelines for Preparing DoD Pest Control Contracts Using Integrated Pest Management
- y. TG 40 - Methods for Trapping and Sampling Small Mammals for Virologic Testing
- z. TG 41 - Protection from Rodent-borne Diseases with special emphasis on occupational exposure to hantavirus
- aa. TG 42 - Self-Help Pest Management
- bb. TG 43 - Guide to Pest Surveillance During Contingency Operations
- cc. TG 44 - Bed Bugs - Importance, Biology, and Control Strategies, August 2006
- dd. TG 45 - Storage and Display of Retail Pesticides, November 2006

5. Other References, Manuals, Books and Guides.

- a. MIL-STD-904B, Guidelines for Detection, Evaluation and Prevention of Pest Infestation of Subsistence, 10 March 2000.
- b. MIL-HDBK-1028/8A, Design of Pest Management Facilities, 1 November 1991.
- c. MIL-STD-3006A, Sanitation Requirements for Food Establishments, 7 June 2002.

- d. TB Med 561, Occupational and Environmental Health, Pest Surveillance, 1 June 1992.
  - e. Mallis Handbook of Pest Control, 7th Edition, PCT Books, 4012 Bridge Ave, Cleveland, OH 44113.
6. Periodicals.
- a. Pest Control (Magazine Published Monthly, \$22/YEAR), P.O. Box 6215, Duluth, MN 55806-9915.
  - b. Pest Control Technology (Magazine Published Monthly, \$30/Year), PCT, 4012 Bridge Ave, Cleveland, OH 44113.
  - c. Pest Management Bulletin, Periodic Publication of .S. Army Center for Health Promotion and Preventive Medicine, Entomological Sciences Program, Aberdeen Proving Ground, MD 21010-5403.
  - d. Army Pest Management Timely Topics, Periodic Publication of U.S. Army Environmental Command, Pest Management Team, at [pestmanagementteam@aec.apgea.army.mil](mailto:pestmanagementteam@aec.apgea.army.mil).

## APPENDIX A. MEASURES OF MERIT



ACQUISITION  
TECHNOLOGY  
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

JUL 1 - 2004

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY  
(INSTALLATIONS AND ENVIRONMENT)  
ASSISTANT SECRETARY OF THE NAVY  
(INSTALLATIONS AND ENVIRONMENT)  
ASSISTANT SECRETARY OF THE AIR FORCE  
(INSTALLATIONS, ENVIRONMENT, AND LOGISTICS)  
DIRECTOR, DEFENSE LOGISTICS AGENCY (D)

SUBJECT: New Pest Management Measures of Merit

Since 1993, the Department of Defense has made tremendous progress in achieving our Pest Management Measures of Merit (MoMs). These MoMs aim to reduce pesticide risk by maintaining current installation pest management plans, reducing pesticide use, and maintaining certification of pesticide applicators. Our most challenging success was achievement of the 50% reduction in DoD-wide pesticide use from 1993-2000. Since then, we have increased this reduction even further; our data from 2003 indicate a reduction of 56%.

Because the original MoMs in DoDI 4150.7, *DoD Pest Management Program*, have end dates that have already passed, it is time to update them. The new Pest Management MoMs are shown in attachment 1. MoMs #1 and #3 remain the same but with a new end date of 2010. MoM #2 is to maintain our achieved reduction rather than strive for a continued reduction. Attachment 2 includes graphs showing past and projected progress for each MoM.

FY 04 data for the new MoMs is due to this office by 1 February 2005. Please use the format in attachment 3 when submitting this data. My point of contact for this issue is Maj Sharon Spradling, DSN 295-8310, commercial (301) 295-8310, [sharon.spradling@osd.mil](mailto:sharon.spradling@osd.mil).

Alex A. Beehler  
Assistant Deputy Under Secretary of Defense  
(Environment, Safety and Occupational Health)

Attachments:  
As stated



## **New Pest Management Measures of Merit (MoMs)**

### **MoM #1.**

**New Goal: Through the end of FY 2010, 100% of DoD installations will have pest management plans prepared, reviewed, and updated annually by pest management professionals.**

Old Goal: By the end of FY 1997, 100% of DoD installations will have pest management plans prepared, reviewed, and updated annually by pest management professionals.

### **MoM #2**

**New Goal: Through the end of FY 2010, DoD will maintain the achieved reduction in annual pesticide use on DoD installations. This reduction goal is set at an average of the FY 2002 and 2003 usage, which is 389,000 pounds of active ingredient (45% of the original 1993 baseline- a 55% reduction). Pesticide applications by contractors shall be included.**

Old Goal: By the end of FY 2000, the amount of pesticide applied annually on DoD installations will be reduced by 50% from the FY 1993 baseline in pounds of active ingredient. The goal for this MoM shall not be obtained by substituting more toxic pesticides that have lower application rates than the pesticide in use.

### **MoM #3**

**New Goal: Through the end of FY 2010, 100% of DoD's installation pesticide applicators will be properly certified (either by DoD or the appropriate state). Direct hire employees have a maximum of 2 years to become certified after initial employment. Contract employees shall have the appropriate state certification when the contract is let.**

Old Goal: By the end of FY 1998, 100% of DoD's installation pesticide applicators will be properly certified (either DoD or appropriate State). Direct hire employees have a maximum of 2 years to become certified after initial employment. Contract employees should have the appropriate state certification when the contract is let.

APPENDIX B. USAG-HI INSTALLATIONS

**USAG-HI INSTALLATIONS**

<b>Installation</b>	<b>total acreage</b>	<b>fee</b>	<b>ceded</b>	<b>lease</b>	<b>license/ permit/ easement</b>	
Aliamanu Military Reservation (AMR)	538.15	524.18	0.00	3.46	10.51	
Fort DeRussy MR	72.79	69.74	1.47	0.00	1.58	
Dillingham MR	663.90	549.87	77.70	0.00	36.33	
Helemano MR	289.73	281.50	0.00	0.00	8.23	
Kahuku Training Area	9,480.22	8,312.54	0.00	1,149.72	17.96	8,215.809 acs purchased 26 Feb 99. 71.48 acs purchased 17 Dec 03.
Kawailoa Training Area	23,347.55	0.00	0.00	23,347.55	0.00	
Kipapa Ammo Storage Site	401.54	370.22	0.00	0.00	31.32	
Makua MR	4,195.47	170.00	3,236.48	782.35	6.64	
Mauna Kapu Communication Station Site	16.14	0.00	0.00	0.00	16.14	Deleted Lot 341 (.125 ac) returned to Campbell Estate
Mokuleia Army Beach	16.58	0.00	14.00	2.58	0.00	
Pupukea-Paalaa-Uka Military Road	109.25	0.00	0.00	0.00	109.25	
Schofield Barracks MR	15,033.56	2,284.43	12,715.89	0.00	33.24	6Sep05 added 1,402 acres fee (South Range & deleted 2,970 acres easement (Dole effluent))
Fort Shafter MR	591.70	52.29	533.09	0.08	6.24	
Signal Cable Trunking System	0.10	0.00	0.10	0.00	0.00	
Tripler Army Medical Center	367.21	358.29	0.00	0.00	8.92	
U.S.A. Field Station, Kunia	95.25	0.00	33.92	0.00	61.33	
Waianae-Kai MR	14.46	0.00	12.37	1.12	0.97	
Waikakalaua Ammo Storage Tunnels Site	312.43	175.77	136.61	0.00	0.05	
Wheeler Army Airfield	1,369.90	0.24	1,369.06		0.60	
<b>Total - Oahu</b>	<b>56,915.93</b>	<b>13,149.07</b>	<b>18,130.69</b>	<b>25,286.86</b>	<b>349.31</b>	
<b>Big Island</b>	<b>total acreage</b>	<b>fee</b>	<b>ceded</b>	<b>lease</b>	<b>license/ permit/ easement</b>	
Kawaihae MR	10.81	0.00	3.03	0.00	7.78	
Kilauea MR	71.68	0.50	0.00	0.00	71.18	
Pohakuloa Training Area	132,784.44	23,992.29	84,815.26	23,954.19	22.70	31Oct06 added 23,992.289 acres (West PTA Parker Ranch land)
<b>Total</b>	<b>132,866.93</b>	<b>23,992.79</b>	<b>84,818.29</b>	<b>23,954.19</b>	<b>101.66</b>	
<b>Grand Total</b>	<b>189,782.86</b>	<b>37,141.86</b>	<b>102,948.98</b>	<b>49,241.05</b>	<b>450.97</b>	

3/16/2007

APPENDIX C. ANNUAL PLAN UPDATE FORM



Areas			
Dependent Schools – (Indoors & Outdoors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child Development Centers – (Indoors & Outdoors)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
All Food Handling Buildings (Indoors)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**4. PESTICIDE USE:**

- a. The installation baseline (average of FY02 and FY03) was 6652 Pounds Active Ingredient (P.A.I.).
- b. Reported P.A.I. for last FY was 8626
- c. Additional comments on your pesticide use during the last FY (OPTIONAL)?

Total Pounds Active Ingredient (PAI) =8626	
<input type="checkbox"/>	Herbicides/Fungicides 6810
<input type="checkbox"/>	Insecticides 565
<input type="checkbox"/>	Rodenticides 0
<input type="checkbox"/>	Golf Course 1151
<input type="checkbox"/>	Agriculture Out leasing 0
<input type="checkbox"/>	RCI 100.

**5. PLAN MAINTENANCE:** Please list any minor program changes (i.e., personnel changes, certifications, other programming changes or challenges, etc) to the plan for the new FY. Major plan revisions require re-submittal of the entire updated plan.

New plan submitted for technical review to AEC and awaiting validation pending submission of FY08 PUF and PUP.

**6. PESTICIDE USE PROPOSAL (PUP):** Please attach the current FY pesticide use proposal.

**7. ON-SITE HELP?** Please indicate if you would like an assistance visit this year and briefly describe the reason for such a visit..

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**8. AERIAL APPLICATION OF PESTICIDES PLANNED DURING FY? Yes**

**U.S. ARMY PESTICIDE USE PROPOSAL - For U.S. ARMY GARRISON, HAWAII, FY 08 - 10/18/07**

<u>Product name</u>	<u>EPA Registration Number</u>	<u>% Active Ingredient</u>	<u>Chemical name</u>	<u>Formulation</u>	<u>Pesticide Classification</u>	<u>Signal Word</u>	<u>State Registrati on Status</u>	<u>Target</u>	<u>lbs/gal lbs/lbs lbs/ea</u>	<u>unit</u>
Avid 0.15EC	100-896	2.000%	Abamectin - 2%	Emulsifiable Concentrate	Acaricide/ Insecticide	Warning	Yes	Mites	0.15	gal
Primo	100-729	12.00%	Trinexapac-ethyl	Emulsifiable Concentrate	Biosynthesis inhibitor	Warning	Yes	Grasses	1	gal
Primo Maxx	100-937	11.30%	Trinexapac-ethyl	Emulsifiable Concentrate	Biosynthesis inhibitor	Caution	Yes	Grasses	1	gal
4 The Birds	8254-5-56	80.000%	Polybutene	Gel	Bird Repellent	Caution	Yes	Birds	0.8	lb
4 The Birds II (discontinued)	1621-17-56	97.000%	Polybutene	Gel	Bird Repellent	Caution	Yes	Birds	0.97	lb
Tisan	1769-227-66114	10.000%	n-alkyl dimethyl benzyl ammonium chloride - 5% n-alkyl dimethyl ethylbenzyl ammonium chloride - 5%	Liquid	Disinfectant		Yes	Germes	0.834	gal
Banrot	58185-10	40.000%	Etridiazole - 15% Thiophanate-methyl - 25%	Wettable powder	Fungicide	Danger	Yes	Phytophthora, pythium, fusarium	0.4	lb
Chipco 26GT	432-888	23.30%	Iprodione	Suspension	Fungicide	Caution	Yes	helminthosporum	2	gal
Daconil Ultrex	50534-202-100	82.50%	Chlorothalonil	Dispersible Granules	Fungicide	Danger	Yes	helminthosporum	0.825	lb
Dithane	707-180	75.000%	Mancozeb	Dry Flowable	Fungicide	Caution	Yes	Algae	0.75	lb
Fore	707-87	80.00%	Mancozeb	Powder	Fungicide	Caution	Yes	Pythium	0.8	lb
Subdue Maxx	100-796	22.00%	mefenoxam	Emulsifiable Concentrate	Fungicide	Caution	Yes	Pythium	2.01828	gal
Aqua Master	524-343	53.800%	Glyphosate	Liquid	Herbicide	Caution	Yes	Weeds, various	5.4	gal
Asulox	264-447	36.20%	Methyl sulfanilylcarbamate	Liquid	Herbicide	Caution	Yes	Kikuya grass	3.34	gal
Blade	74477-1-2217	60.00%	Metsulfuron Methyl	Dispersible granules	Herbicide	Caution	Yes	Broadleaf weeds	0.6	lb
Confront	62719-92	45.10%	Triclopyr - 33.0% Clopyralid - 12.1%	Liquid	Herbicide	Danger	Yes	Broadleaf weeds	3	gal
Escort	352-439	60.000%	Metsulfuron methyl	Granules	Herbicide	Caution	Yes	Wild ginger	0.6	lb
Finale	432-1229	11.33%	Glufosinate-ammonium	Liquid	Herbicide	Warning	Yes	Weeds, various	1	gal
Fusilade II (discontinued)	10182-393	24.500%	Fluazifop-P-butyl	Liquid concentrate	Herbicide	Caution	Yes	Grasses	2	gal
Garlon 3A	62719-37	44.400%	Triclopyr	Liquid concentrate	Herbicide	Danger	Yes	Range roads	3	gal
Garlon 4	62719-40	61.600%	Triclopyr	Liquid concentrate	Herbicide	Caution	Yes	Cut stumps	4	gal
Glypro Plus	62719-322	41.000%	Glyphosate	Liquid concentrate	Herbicide	Caution	Yes	Weeds, various	4	gal
Illoxan	432-1231	34.70%	diclofop-methyl	liquid	herbicide	Danger	Yes	Goose grass	3	gal

Image 70DG	241-319	70.00%	Salt of imazaquin	Dispersible granules	Herbicide	Caution	Yes	Kylinga, nut grass	0.7	lb
Kerb WSP	707-159	51.00%	3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-benzamide	Water soluble packet	Herbicide	Caution	Yes	Poa	0.51	lb
Manage	524-465	75.00%	Halosulfuron	Dispersible Granules	Herbicide	Caution	Yes	Nut grass	0.75	lb
MSMA 6 Plus	19713-42	47.60%	Monosodium Acid Methanearsonate	Liquid + surfactant	Herbicide	Caution	Yes	Goose grass	6	gal
Oryzalin 4 Pro	72167-15-74477	41.00%	Oryzalin	Liquid	Herbicide	Caution	Yes	Gppse grass	4	gal
Revolver	432-1266	2.34%	Foramsulfuron	Suspension	Herbicide		Yes	Goose grass	0.19	gal
Roundup Pro	524-475	41.00%	Glyphosate	Liquid	Herbicide	Caution	Yes	Weeds, various	4	gal
Sencor 75 Turf	3125-325	75.00%	Metribuzin	Dry flowable	Herbicide	Caution	Yes	Crab, goose, dallas grasses	0.75	lb
Simazine 4L	19713-60	40.00%	Simazine	Liquid suspension	Herbicide	Caution	Yes	Crab grass	4	gal
Surflan A.S.	62719-113	40.40%	Orizalin	Solid in liquid suspension	Herbicide	Caution	Yes	Crab grass	4	gal
Trimec Plus	2217-709	28.22%	Monosodium Acid Methanearsonate - 18.00% Dimethylamine Salt of 2, 4-Dichlorophenoxyacetic acid - 5.83% Dimethylamine Salt of 2-(2-methyl-4-chlorophenoxy) propionic acid - 2.93% Dimethylamine Salt of Dicamba - 1.46%	Solid in liquid suspension	Herbicide	Warning	Yes	Kylinga, nut grass	2.88	gal
Enstar II	2724-476	65.100%	S-Kinoprene	Liquid concentrate	Insect Growth Regulator	Warning	Yes	Aphids, whiteflies, scales	5	gal
Gentrol Point Source	2724-469	90.600%	Hydroprene	Point Source	Insect Growth Regulator	Caution	Yes	Cockroach	0.24	ea
Advance Carpenter Ant Bait	499-370	0.011%	Abamectin B1	Granular Bait	Insecticide	Caution	Yes	Ants	0.00011	lb
Advance Dual Choice Ant Bait Station	499-459	0.500%	Abamectin B1	Bait Station	Insecticide	Caution	Yes	Ants	2.185E-05	ea
Advance Granular Ant Bait	499-370	0.011%	Abamectin B1	Granular Bait	Insecticide	Caution	Yes	Ants	0.00011	lb
Aero-Cide	499-415	10.000%	Pyrethrins - 1% Allethrin - 1% Piperonyl Butoxide - 4% N-Octyl bicycloheptene dicarboximide - 4%	Aerosol	Insecticide	Caution	Yes	Flies, moths, mosquitoes	0.1	lb
Amdro Fire Ant Bait	73342-1	0.730%	Hydramethylnon	Bait - Granule	Insecticide		Yes	Ants	0.0073	lb

Avert Cockroach Bait Station	499-467	0.050%	Abamectin B1	Bait Station	Insecticide	Caution	Yes	Cockroach	2.152E-06	ea
Avert Dry Flowable Cockroach Bait	499-294	0.054%	Abamectin B1 - 0.05% Related compound - 0.004%	Dry Flowable	Insecticide	Caution	Yes	Cockroach	0.00054	lb
Carbaryl 4L	34704-447	43.00%	Carbaryl	Suspension	Insecticide	Caution	Yes	Armyworm, ants	4	gal
CB D-Force	9444-217	0.060%	Deltamethrin	Aerosol	Insecticide	Caution	Yes	Insects, various	0.0006	lb
CB Invader HPX	9444-186	1.000%	Baygon	Aerosol	Insecticide	Caution	Yes	Termites, wood borers	0.01	lb
CB-80 Extra	9444-175	4.500%	Pyrethrins - 0.5% Piperonyl Butoxide - 4.0%	Aerosol	Insecticide	Caution	Yes	Flies, moths, ants, mosquitoes, roaches	0.045	lb
Delta Dust	432-772	0.005%	Deltamethrin	Dust	Insecticide	Caution	Yes	Wasps, termites	0.00005	lb
Demand CS	10182-361	9.700%	Lambda-cyhalothrin	Micro-encapsulated	Insecticide	Caution	Yes	Ants, centipedes, roaches, fleas, spiders	0.838	gal
Demon TC	100-1006	25.300%	Cypermethrin	Emulsifiable Concentrate	Insecticide	Caution	Yes	Termites, centipedes, flies	2	gal
Diazinon	8845-92	25.000%	Diazinon	Spray concentrate	Insecticide	Caution	Yes	Insects, various	1.95	gal
Dragnet SFR	279-3062	36.800%	Permethrin	Emulsifiable Concentrate	Insecticide	Caution	Yes	Ticks, centipedes, termites	3.2	gal
Home Defense Hi-Power Indoor Insect Fogger	239-2626	0.885%	Pyrethrins - 0.050% Permethrin - 0.400% N-Octyl bicycloheptene dicarboximide - 0.400%	Ready-to-use Spray	Insecticide	Caution	Yes	Ants, roaches	0.00708	gal
Isotox Form IV	239-2595	8.50%	Acephate - 8% Fenbutatin-oxide - .5%	Liquid concentrate	Insecticide	Caution	Yes	Aphids	0.7089	gal
Kicker	4816-707AA	66.000%	Pyrethrins - 6.00% Piperonyl Butoxide - 60.00%	Emulsifiable Concentrate	Insecticide	Caution	No	Cockroach	5.3777988	gal
Malathion 50 Plus	239-739-ZF	50.000%	Malathion	Spray concentrate	Insecticide	Warning	Yes	Aphids, whiteflies, scales	4.4	gal
Marathon	3125-452-59807	1.000%	Imidacloprid	Granules	Insecticide	Caution	Yes	Chinese rose beetle	0.01	lb
Maxforce FC Ant Bait Station	64248-2	1.000%	Hydramethylnon	Bait Station	Insecticide	Caution	Yes	Ants		ea
Maxforce FC Ant Bait Station	432-1256	0.010%	Fipronil	Bait Station	Insecticide	Caution	Yes	Ants		ea
Maxforce Granular Insect Bait (discontinued)	64248-6	1.000%	Hydramethylnon	Granular Bait	Insecticide	Caution	Yes	Ants, crickets	0.01	lb
Merit 75 WP (discontinued)	3125-421	75.000%	Imidacloprid	Wettable Powder	Insecticide	Caution	Yes	Turf insects, aphids, scales	0.75	lb

Permanone 10% EC	432-1132	10.000%	Permethrin	Emulsifiable Concentrate	Insecticide	Warning	Yes	Mosquitoes	0.7	gal
P-O-W Plus	1769-370	0.850%	Tetramethrin 0.1% Permethrin - 0.25% Piperonyl Butoxide - 0.5%	Aerosol	Insecticide	Caution	Yes	Wasps	0.0085	lb
PT Wasp Freeze	499-362	0.249%	Allethrin - 0.129% Phenothrin - 0.12%	Aerosol	Insecticide	Caution	Yes	Wasps	0.00249	lb
SC Ultra (discontinued)	3125-498	11.800%	Cyano (4-fluoro-3-phenoxyphenol)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate	Suspended concentrate	Insecticide	Caution	Yes	Centipedes, roaches, fleas, stored product pests, ticks	1	gal
Summit BTI Briquets	6218-47	10.000%	BTI	Briquets	Insecticide	Caution	Yes	Mosquitoes	0.00286	ea
Talstar-PL	279-3168	0.20%	Bifenthrin	Granular	Insecticide	Caution	Yes	Ants	0.002	lb
Terro Ant Killer II	149-8	5.400%	Borax	Liquid Bait	Insecticide	Caution	Yes	Ants	0.054	lb
ULD-BP-300	499-450	19.000%	Pyrethrins -3% Piperonyl Butoxide - 6% N-Octyl bicycloheptene dicarboximide - 10%	Liquid	Insecticide	Caution	Yes	Cockroach		gal
Ultracide	499-404	0.985%	Pyriproxyfen - 0.1% Pyrethrins -0.05% N-Octyl bicycloheptene dicarboximide - 0.4% Permethrin - 0.4% Related compounds - 0.035%	Aerosol	Insecticide	Caution	Yes	Fleas	0.00985	lb
Talstar GC Flowable	279-3156	7.90%	Bifenthrin	Liquid	Insecticide/ Acaricide	Caution	Yes	Mites, thrips, whiteflies, scales	0.6666	gal
Deadline T&O	64864-38	4.00%	Metaldehyde	Bait	Molluscicide	Caution	Yes	Slugs/snails	0.04	lb
Oust XP	352-601	75.000%	Sulfometuron methyl	Dispersible Granules	Pre-emergent Herbicide	Caution	Yes	Weeds, various	0.75	lb
Confrac All Weather Blox	12455-79	0.005%	Bromadiolone	Bait	Rodenticide	Caution	Yes	Rodent	0.00005	lb
Fastrac	12455-97	0.010%	Bromethalin	Bait	Rodenticide	Caution	Yes	Rodent	0.0001	lb
Ramik	61282-26	0.005%	Diphacinone	Bait	Rodenticide	Caution	Yes	Rodent	0.00005	lb
Weather Blox XT	100-1055	0.005%	Brodifacoum	Bait	Rodenticide	Caution	Yes	Rodent	0.00005	lb
Weather Blox XT	10182-339	0.005%	Brodifacoum	Bait	Rodenticide	Caution	Yes	Rodent	0.00005	lb

## APPENDIX D. INTEGRATED PEST MANAGEMENT OUTLINES

note - Demon TC should be used only when control efforts utilizing other materials and methods fail.

## ANTS, HOUSEHOLD

PURPOSE: Control of household nuisance pest.

PRIORITY: 3 - recommend initial usage of sanitation and baits.

### SURVEILLANCE:

1. Based on complaints and verified by inspector.
2. Submit specimen to Installation Pest Management Coordinator for identification if necessary.

### NON-CHEMICAL CONTROL:

1. Practice good housekeeping such as cleaning-up spilled foods, rinsing out empty beverage cans, and frequently washing counters.
2. Keep food in containers with tight-fitting lids.
3. Dry up possible sources of water.
4. Seal up cracks and crevices that may serve as harborage as well as points of entry.

### CHEMICAL CONTROL:

#### PESTICIDE: Ant Bait Stations

1. EPA Reg #: various
2. Formulation: Bait.
3. AI: various
4. Source: n/a
5. Application:
  - a. Strength: various.
  - b. Diluent: None.
  - c. Rate: Place 3 bait stations in an average size room. For heavier infestations, additional bait stations are to be placed.
  - d. Equipment: None.
6. Areas to treated:
  - a. Place each bait station next to ant trails or close to areas where ants are numerous. If possible, place baits next to nest or point of entry into building.
  - b. Place bait stations in or near wall voids, electrical outlets (if wiring permits), potted plants, waste-paper baskets, garbage cans and sinks.
  - c. In cabinets, next to food and dishes, near sensitive equipment.
7. Caution:
  - a. Do not spray the bait stations. Avoid placing the bait stations on freshly sprayed surfaces.
  - b. Replace all bait stations every 2 weeks until control is achieved.
8. Protective Equipment: Light-weight gloves.

## ANTS, HOUSEHOLD (cont.)

### PESTICIDE: Borax (Terro Ant Killer II)

1. EPA Reg #: 149-8
2. Formulation: Liquid bait.
3. AI: 5.4%
4. Source: BEI
5. Application:
  - a. Strength: 5.4%
  - b. Diluent: n/a.
  - c. Rate: see label.
  - d. Equipment: None.
6. Areas to treated:
  - a. Place bait next to ant trails or close to areas where ants are numerous.
  - b. Place bait in or near wall voids, electrical outlets (if wiring permits), potted plants, waste-paper baskets, garbage cans and sinks.
  - c. In cabinets, next to food and dishes, near sensitive equipment.
7. Caution:
  - a. Do not spray the bait. Avoid placing the bait on freshly sprayed surfaces.
  - b. Place in areas inaccessible to children and pets.
8. Protective Equipment: None.

### PESTICIDE: Hydramethylnon (Amdro Fire Ant Bait)

1. EPA Reg #: 73342-1
2. Formulation: Bait.
3. AI: 0.73%
4. Source: NSN 6840-01-183-3913
5. Application:
  - a. Strength: 0.73%
  - b. Diluent: n/a.
  - c. Rate: see label.
  - d. Equipment: none.
6. Areas to treated: see label.
7. Caution: Do not apply directly to water.
8. Protective Equipment: Rubber gloves.

### PESTICIDE: Pyrethrins, Piperonyl Butoxide (CB 80 Extra)

1. EPA Reg #: 9444-175
2. Formulation: Ready-to-use aerosol.
3. AI: 4.5%
4. Source: BEI
5. Application: Space spray, contact treatment.
  - a. Strength: 4.5%.
  - b. Diluent: n/a.
  - c. Rate: see label.
  - d. Equipment: Ready-to-use aerosol can.
6. Areas to be treated: Indoors as a crack and crevice treatment, and as a space treatment. Also indoors, apply to ant trails, around windows and doors and wherever ants can find entrance to buildings.
7. Caution:
  - a. Do not allow children or pets on treated areas until pesticide dries.
  - b. Ventilate Medical Care Areas 2 hours before returning patients.
8. Protective Equipment: Respirator, goggles, rubber gloves.

## ANTS, HOUSEHOLD (cont.)

### PESTICIDE: Fipronil (Termidor SC)

1. EPA Reg #: 7969-210
2. Formulation: CS
3. AI: 9.1%
4. Source: NSN 6840-01-483-3072
5. Application: Corrective - residual outdoor treatment.
  - a. Strength: 0.06%.
  - b. Diluent: Water.
  - c. Rate: 2 quarts/160 linear feet (1.5 gallons/1000 square feet).
  - d. Equipment: hand sprayer.
6. Areas to be treated: Outside where ants enter the structure, trail around the structure or where they crawl and hide.
7. Caution:
  - a. Do not allow children or pets on treated areas until pesticide dries.
  - b. Harmful if swallowed, absorbed through skin or inhaled.
8. Protective Equipment: Respirator, goggles, coveralls, hat, rubber gloves, rubber boots (outdoors).

### PESTICIDE: Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - residual indoor/outdoor treatment.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer.
6. Areas to be treated: Indoors, apply as a crack and crevice treatment, to ant trails, around windows and doors, and wherever ants can find entrance to buildings. Outdoors, apply as a perimeter spray around buildings.
7. Caution:
  - a. Do not allow children or pets on treated areas until pesticide dries.
  - b. Do not treat food contact surfaces.
8. Protective Equipment: Respirator, goggles, coveralls, hat, rubber gloves, rubber boots (outdoors).

## APHIDS

PURPOSE: Control of pests that attack ornamental plants.

PRIORITY: 3

SURVEILLANCE: Based on complaints and verified by pest controller.

NON-CHEMICAL CONTROL: Biological control allowing natural enemies, predators and parasites, to control aphid populations. It may be necessary to control ants that are protecting the aphids from predators and parasites.

CHEMICAL CONTROL:

PESTICIDE: Imidacloprid (Merit 75 WSP)

1. EPA Reg #: 3125-439
2. Formulation: Wettable powder
3. AI: 75%
4. Source: BEI
5. Application: Corrective.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: gallon hand sprayer/power sprayer.
6. Areas to be Treated: Ornamental plants.
7. Caution: Do not apply when plants are in bloom if bees are visiting the area.
8. Protective Equipment: Respirator, goggles, coveralls, hat, and rubber gloves.

## **BEEES/WASPS**

**PURPOSE:** To control possible stinging hazards.

**PRIORITY:** 1 or 2

**SURVEILLANCE:**

1. Complaint calls, verify infestation.
2. Historical locations.

**NON-CHEMICAL CONTROL:**

1. Remove nest or swarm: Contact local professional beekeepers.
2. Ensure infested buildings are properly screened.

**CHEMICAL CONTROL:**

**PESTICIDE:** Allethrin, d-phenothrin (PT Brand Wasp Freeze Wasp and Hornet Killer)

1. EPA Reg #: 499-362
2. Formulation: Aerosol - jet stream.
3. AI: 0.249%
4. Source: NSN 6840-00-459-2443
5. Application: Corrective.
  - a. Strength: 0.249%
  - b. Diluent: None
  - c. Rate: Thoroughly wet nest and surrounding area.
    - 1) Wasps - With wind at back of user spray nest from a distance of 6-15 feet. Spray until all nest and wasps are contacted.
    - 2) Bees - Spray with a sweeping motion any stirred-up insects around nest opening. Afterwards, move forward to nest opening and spray liquid from 6 to 8 seconds directly into nest hole.
  - d. Equipment: Ready-to-use aerosol can.
6. Areas to be treated: Nest and immediate surrounding areas.
7. Caution:
  - a. Treat after dark or early morning.
  - b. Use only in non-food areas.
  - c. Do not eat honey from treated nest.
  - d. Avoid drift.
8. Protective Equipment: Respirator, protective head net, goggles, coveralls, and rubber gloves.

## CENTIPEDES

PURPOSE: Control of a nuisance household pest that has a painful bite.

PRIORITY: 2

SURVEILLANCE: Based on complaints and verified by pest controller.

NON-CHEMICAL CONTROL. Mechanically crush centipede, use sticky traps, cut back vegetation, remove debris piles from around building.

CHEMICAL CONTROL:

PESTICIDE: Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - residual indoor/outdoor treatment.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer.
6. Areas to be Treated:
  - a. Around door and windowsills.
  - b. Baseboards and other sites where pests may enter.
  - c. Inside closets, cabinets, openings around water pipes and wall voids.
  - d. Outdoors apply spot or band treatment to areas where pests may crawl.
7. Caution: Do not allow children and pets in treated areas until pesticide dries.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat, and rubber boots (outdoors).

PESTICIDE: Cypermethrin (Demon TC)

1. EPA Reg #: 100-1006
2. Formulation: EC
3. AI: 25.3%
4. Source: BEI
5. Application: Corrective residual outdoor treatment.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer/power sprayer.
6. Areas to be Treated: Outdoors as a 6-10 feet wide band treatment around and adjacent to the structure.
7. Caution: Do not allow children and pets in treated areas until pesticide dries.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat, and rubber boots.

## COCKROACHES

PURPOSE: Control of potential disease carriers and nuisance pests.

PRIORITY: 3

### SURVEILLANCE:

1. Tripler Army Medical Center, Department of Preventive Medicine:
  - a. Food-handling facilities are surveyed monthly/quarterly. Signs of cockroach harborage and sanitary conditions that are conducive for cockroach infestations are noted and recorded during scheduled surveys.
  - b. Survey results are used to verify control operations performed by the pest control shop.
2. Pest Controller: Verify cockroach infestations prior to conducting residual treatment. A comprehensive crack and crevice survey is conducted using a flushing agent. Visual presence of any flushed cockroaches indicates selective spot treatment of harborage sites.

### NON-CHEMICAL CONTROL:

1. Sanitation: The facility occupant is responsible for ensuring that poor sanitation is not a contributing factor for pest infestations. If continued pest infestations are the result of poor sanitation practices:
  - a. Contact manager of facility and explain deficiency. If not corrected,
  - b. Contact Tripler Army Medical Center, Department of Preventive Medicine or the local preventive medicine activity.
2. Harborage Elimination: Caulking or sealing cockroach harborage sites is primarily the responsibility of the occupant. However, pest controllers can quickly eliminate primary harborage sites using a caulking gun instead of repeated applications of pesticides. Pest controllers need to actively show managers where and how harborage sites can be eliminated.
3. Cockroach Sticky Traps: Sticky traps can provide limited control of minor cockroach infestations. This requires maintenance of traps through a continuous trapping program. Traps can still be used as a surveillance tool.

CHEMICAL CONTROL: DO NOT CONDUCT CHEMICAL TREATMENTS if the primary cause of the infestation is poor sanitation

### PESTICIDE: Fipronil (Combat Cockroach Bait Station)

1. EPA Reg # 64240-33 - small  
64240-34 - large
2. Formulation: Cockroach bait station
3. AI: 0.03%
4. Source: NSN 6840-01-180-0167 - Small  
6840-01-224-1269 - Large
5. Application: Corrective/preventive
  - a. Strength: 0.03%
  - b. Diluent: none
  - c. Rate: see label.
  - d. Equipment: Ready-to-use bait station
6. Areas to be treated:
  - a. Use around hard to control areas such as electrical junction boxes, computers, communication equipment, electrical motors and other pieces of electrical equipment infested with cockroaches.
  - b. Use in hospitals and medical treatment facilities.
  - c. Use in self-help program.
7. Caution: Do not allow children or pets to play with the bait stations.
8. Protective equipment: None required.

## COCKROACHES (cont.)

### PESTICIDE: Boric Acid (Perma-Dust)

1. EPA Reg #: 499-384
2. Formulation: Dust in aerosol can
3. AI: 35.5%
4. Source: NSN 6840-01-287-3938.
5. Application: Corrective/preventive
  - a. Strength: 35.5%
  - b. Diluent: none
  - c. Rate: 1 second spray per spot.
  - d. Equipment: Aerosol can with crack and crevice device. Use injection tube.
6. Areas to be treated:
  - a. Crack and crevice areas of kitchen and bathrooms of food handling facilities and quarters
  - b. Under sinks, behind cabinets, around hot water heaters and refrigeration units, under serving lines, along cracks of kitchen and bathroom moldings, around doorjamb, and behind/under counters and drawers (especially those constructed of wood).
7. Caution: Use only as crack and crevice treatment.
8. Protective equipment: Dust mask, goggles, rubber gloves.

### PESTICIDE: Pyrethrins, Piperonyl Butoxide (CB 80 Extra)

1. EPA Reg #: 9444-175
2. Formulation: Ready-to-use aerosol
3. AI: 4.5%
4. Source: BEI
5. Application: Space spray, contact treatment.
  - a. Strength: 4.5%
  - b. Diluent: none
  - c. Rate: see label.
  - d. Equipment: Ready-to-use aerosol can.
6. Areas to be treated: Indoors as a crack and crevice treatment, and as a space treatment.
7. Caution:
  - a. Ensure food, dishes, pans and eating utensils are covered or removed from treatment areas.
  - b. Ventilate 2 hour.
8. Protective Equipment: Respirator, goggles, rubber gloves.

### PESTICIDE: Pyrethrins, Piperonyl butoxide, N-octyl bicycloheptene dicarboximide (BP-100)

1. EPA Reg #: 499-452
2. Formulation: Ready-to-use or concentrate.
3. AI: 5.94%
4. Source: BEI
5. Application: Corrective
  - a. Strength: see label.
  - b. Diluent: White mineral oil or odorless light petroleum hydrocarbon.
  - c. Rate: see label
  - d. Equipment: see label
6. Areas to be Treated: Use as space treatment only when survey results indicate a heavy infestation (10 cockroaches per trap per night) of food-handling and only after performing comprehensive residual treatment; it does not replace the residual crack and crevice treatments.
7. Caution:
  - a. ULV treatment can only be used when the area is unoccupied.
  - b. Ensure food and eating/cooking utensils are covered prior to fogging.
  - c. Leave treated area closed for one hour and ventilate room thoroughly before reentry.

## COCKROACHES (cont.)

8. Protective Equipment for ULV treatment: Full-face respirator approved for ULV applied pesticides, rubber gloves, coverall, and hat.

PESTICIDE: Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - residual indoor/outdoor treatment.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer.
6. Areas to be Treated:
  - a. Crack and crevice areas of kitchen and bathrooms of food handling facilities and quarters
  - b. Under sinks, behind cabinets, around hot water heaters and refrigeration units, under serving lines, along cracks of kitchen and bathroom moldings, around doorjambs, and behind/under counters and drawers (especially those constructed of wood).
7. Caution:
  - a. Avoid spraying electrical devices.
  - b. Avoid food contact surfaces such as counter tops.
  - c. Do not apply where children are likely to contact treated surfaces.
  - d. Apply only as a crack and crevice treatment.
  - e. Ensure food, dishes, pans and eating utensils are covered or removed from treatment areas.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat.

## CRICKETS

PURPOSE: Control of a household nuisance pest.

PRIORITY: 3

SURVEILLANCE: Based on complaints and verified by pest controller.

NON-CHEMICAL CONTROL: Sound cultural pest management can result in complete control.

1. Frequently mow lawns and cut weeds especially next to buildings.
2. Ensure garbage collection areas are free of rubbish.
3. Limit the use of outdoor lighting and use yellow lights when lights are necessary.
4. Ensure the building has tight fitting doors and windows.
5. Fix leaking pipes and correct any damp conditions around buildings.

CHEMICAL CONTROL:

PESTICIDE: Orthoboric Acid (NiBan-FG)

1. EPA Reg #: 64405-2
2. Formulation: Bait
3. AI: 5%
4. Source: BEI
5. Application:
  - a. Strength: 5%
  - b. Diluent: none
  - c. Rate: see label.
  - d. Equipment: none.
6. Areas to treated:
  - a. Indoors - Areas inaccessible to children and pets such as cracks and crevices and wall voids.
  - b. Outdoors - see label.
7. Caution: Avoid contact with skin, eyes or clothing.
8. Protective Equipment: Long-sleeved shirt, long pants, rubber gloves, shoes and socks.

## FLEAS

PURPOSE: Control of potential disease carriers and biting nuisance pests.

PRIORITY: 2

### SURVEILLANCE:

1. Control based upon complaints.
2. Pest Controller:
  - a. Verify the complaint.
  - b. Place a large white sheet of paper or cloth on the floor and see if fleas land on the surface.
  - c. Look around couches and easy chairs, if pet uses these for bedding. Check the pets' bedding area.
  - d. Check around the corners of the floor and rugs.
  - e. Inspect the pet for fleas.
  - f. Inspect vacuum dirt bag after recent vacuuming.

### NON-CHEMICAL CONTROL:

1. Practice good housekeeping. Thoroughly clean under and around furniture and animal bedding.
2. Thorough vacuuming will remove many fleas.
3. Proper pet management will decrease the overall flea problem.

### CHEMICAL CONTROL:

PESTICIDE: Pyriproxyfen, Pyrethrins, N-Octyl bicycloheptene dicarboximide, Permethrin, related compounds (Ultracide)

1. EPA Reg #: 499-404
2. Formulation: Aerosol
3. AI: 0.985%
4. Source: BEI
5. Application: Corrective-indoor residual treatment
  - a. Strength: 0.985%
  - b. Diluent: none
  - c. Rate: see label.
  - d. Equipment: Ready-to-use aerosol.
6. Areas to be Treated: see label.
7. Caution: Do not allow pets or children on the treated areas until spray dries.
8. Protective Equipment: None if used properly.

PESTICIDE: Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - outdoor treatment.
  - a. Strength: 0.03%.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer/power sprayer.
6. Areas to be Treated: see label
7. Caution:
  - a. Do not apply to pasture or cropland.
  - b. Do not allow pets or children on the treated areas until spray dries.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat, rubber boots.

## HOUSE FLIES AND FILTH FLIES

PURPOSE: Control of nuisance insects and potential disease carriers.

PRIORITY: 2 - for food handling establishments.  
3 – non-food handling establishments.

### SURVEILLANCE

1. Tripler Army Medical Center, Department of Preventive Medicine:
  - a. Visually observe around food-handling facilities monthly/quarterly for conditions conducive for fly infestations, such as inadequate screening, and poor garbage/trash management.
  - b. Report findings to facility manager and to pest control personnel.
2. Pest Controller:
  - a. Report sanitary/structural conditions and non-chemical measures to facility managers.
  - b. For continued problems contact the Tripler Army Medical Center, Department of Preventive Medicine, so that medical authority can be used to correct structural and/or sanitary deficiencies.

### NON-CHEMICAL CONTROL:

1. Solid waste management.
  - a. Ensure trash cans and waste receptacles have tight fitting lids.
  - b. Ensure trash cans and garbage collection points are cleaned each time when garbage is removed for disposal.
  - c. Use sealed plastic bags to the maximum extent possible to contain spilled food.
  - d. Ensure adequate numbers of trash receptacles are present to contain all the garbage.
2. Fly Exclusion
  - a. Ensure all doors and windows close tightly and are screened if opened.
  - b. Ensure doors have self-closing devices and are not propped open.
  - c. Ensure air curtains are operational when doors are open.
3. Fly swatters should be used to control minor infestations.
4. Primary control emphasis must be placed into non-chemical control.

### CHEMICAL CONTROL:

PESTICIDE: Permethrin/Allethrin

1. EPA Reg #: 46515-48-8845
2. Formulation: Aerosol
3. AI: 0.4%
4. Application: Corrective-space treatment
  - a. Strength: 0.4%
  - b. Diluent: None
  - c. Rate: 10 seconds space treatment/1000 cubic ft. (10ft x 10ft x 10ft)
  - d. Equipment: Ready-to-use aerosol can
5. Areas to be Treated:
  - a. Inside of building by the occupant.
  - b. Pest controllers do not provide fly control inside of buildings.
  - c. This is a self-help item.
6. Caution: Cover food, eating and cooking utensils, fish tanks, etc.
7. Protective Equipment: Not necessary for limited use.

## HOUSE FLIES AND FILTH FLIES (cont.)

### PESTICIDE: Cypermethrin (Demon TC)

1. EPA Reg #: 100-1006
2. Formulation: EC
3. AI: 25.3%
4. Source: BEI
5. Application: Corrective residual outdoor treatment.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer/power sprayer.
6. Areas to be Treated: see label.
7. Caution: Do not allow children and pets in treated areas until pesticide dries.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat, and rubber boots.

### PESTICIDE: Methomyl (Golden Malrin)

1. EPA Reg #: 2724-274
2. Formulation: Bait
3. AI: 1.149%
4. Source: NSN 6840-01-183-7244
5. Application: Corrective
  - a. Strength: 1.149%
  - b. Diluent: None
  - c. Rate: see label.
  - d. Equipment: Use in commercial bait stations following label instructions.
6. Areas to be Treated: Use only in areas described on the label.
7. Caution: Do not allow children or pets into treated area.
8. Protective Equipment: Long-sleeved shirt, long pants, rubber gloves, shoes and socks.

## MOSQUITOES - ADULT

**PURPOSE:** Control of nuisance pest and potential vector of mosquito-borne diseases. Controlling nuisance biting mosquitoes to improve health, welfare and morale of installation personnel.

**PRIORITY:** 2

**SURVEILLANCE:**

1. Tripler Army Medical Center, Department of Preventive Medicine will conduct routine mosquito surveillance to include the following:
  - a. Sex and identify mosquito species.
  - b. Provide recommendations for control.
  - c. Evaluate light trap locations.
2. Pest Controller:
  - a. Modify control program based on surveillance results provided to Installation Pest Management Coordinator.
  - b. Complaints will be evaluated to determine if there is a need for control. If trapping is deemed necessary, complaints will be forwarded Tripler Army Medical Center, Department of Preventive Medicine.

**NON-CHEMICAL CONTROL:**

1. Ensure occupied buildings are screened.
2. The use of fly swatters (NSN: 3740-00-252-3383) will control minor infestation indoors (self-help item).
3. Mowing/cutting of grass and cutting back foliage to reduce resting sites.
4. Elimination of standing water that provides breeding sites.

**CHEMICAL CONTROL:**

**PESTICIDE:** Permethrin/Allethrin

1. EPA Reg #: 46515-48-8845
2. Formulation: Aerosol
3. AI: 0.4%
4. Application: Corrective space treatment
  - a. Strength: 0.4%
  - b. Diluent: none
  - c. Rate: 10 second space treatment / 1000 cubic feet (10 ft x 10 ft x 10 ft).
  - d. Equipment: Ready-to-use aerosol can.
5. Areas to be Treated:
  - a. Inside of building by the occupant.
  - b. Pest controllers do not provide mosquito control inside of buildings.
  - c. This is a self-help item.
6. Caution: Use IAW label instructions
7. Protective Equipment: Not necessary for limited use.

## MOSQUITO - LARVAE

PURPOSE: To control immature larvae in their breeding sites.

PRIORITY: 2

### SURVEILLANCE:

1. Tripler Army Medical Center, Department of Preventive Medicine.
  - a. Monthly survey of potential mosquito breeding sites.
  - b. At each breeding site, larvae will be surveyed using a dipper and the number larvae/dip will be recorded.
  - c. Installation Pest Management Coordinator will be informed of survey results. Any necessary actions will be forwarded to Pest Controllers.
2. Pest Controller: Report breeding sites to the Office of the Project Manager for possible corrective actions.

### NON-CHEMICAL CONTROL:

1. Water management to include draining ditches and draining or filling in sites that contain standing water.
2. Remove trash such as cans, barrels and old tires to eliminate these breeding sites. Turn-over water containing devices when not in use.
3. Control aquatic weeds and weeds in ditches that restrict water flow.

### CHEMICAL CONTROL:

PESTICIDE: *Bacillus thuringiensis israelensis* (Summit B.t.i. Briquets)

1. EPA Reg #: 6218-47
2. Formulation: Slow release briquette.
3. AI: 10%
4. Source: BEI
5. Application: Corrective
  - a. Strength: 10%
  - b. Diluent: None
  - c. Rate: see label.
  - d. Equipment: Ready-to-use briquettes.
6. Areas to be treated: Apply to stagnant pools, road and irrigation ditches, catch basins, artificial containers, lake shore lines, quarries, and marshy areas.
7. Caution: For outdoor use only.
8. Protective Equipment: Light-weight rubber gloves

## RODENTS

PURPOSE: Control of a pest capable of damaging buildings and destroying quantities of stored products.

PRIORITY: 1 or 2 - depending on the current presence of a rodent.

### SURVEILLANCE:

1. Tripler Army Medical Center, Department of Preventive Medicine:
  - a. Food Handling Facilities
    - 1) Conduct quarterly inspection of interior and exterior, observing sanitation and other conditions capable of sustaining pest infestations.
    - 2) The survey will be visual, looking for signs of rodent presence such as droppings, runways, rubmarks and burrows, and for live rodents.
    - 3) Surveillance results will be provided to the pest controllers and to the facility manager.
  - b. Food Storage Facilities. Tripler Army Medical Center, Department of Preventive Medicine personnel, in conjunction with veterinary service personnel, will conduct semi-annual visual surveys and report findings to the facility manager and to the pest control shop.
2. Veterinary personnel will conduct surveys of food storage facilities.
  - a. Monthly comprehensive survey performed by Veterinarian.
  - b. Surveillance results will be coordinated with pest control personnel.
3. Pest Controller:
  - a. Food Handling Facilities and Food Storage Facilities
    - 1) Conduct visual survey of building interior and exterior looking for signs of rodent activity in conjunction with surveys provided by medical personnel.
    - 2) ensure baits in traps are fresh.
  - b. All other facilities and separate trash collection points
    - 1) Visual survey will be performed in response to report of rodent activity.
    - 2) The building exterior will be observed for burrows, runways, potential harborage sites and potential building entrance.

### NON-CHEMICAL CONTROL:

1. Sanitation - Preventive
  - a. Ensure garbage/trash is placed inside trash receptacles having tight-fitting lids. Report deficiencies to Tripler Army Medical Center, Department of Preventive Medicine.
  - b. Ensure food is placed in rodent-proof containers.
2. Rodent-Proofing - Preventive
  - a. The single most important factor in preventing a rodent infestation inside a building.
  - b. All potential rodent entrance sites greater than 1/4 inch should be sealed.
  - c. Contact the facility manager and the preventive maintenance section to inform them of the needs for rodent-proofing.
  - d. Tripler Army Medical Center, Department of Preventive Medicine can provide additional assistance.
3. Trapping - Corrective
  - a. Glue boards: Place glueboards on both sides of potential rodent entrance sites, along the perimeter walls. Glueboards can be used with other trapping methods. Placing a small quantity of peanut butter on the center of the glueboard will encourage crossing onto the trap.
  - b. Snap traps and Live-catch traps: These traps should be baited with dried fish, bacon, nut, meats, dried fruit or bread products. Baits must be changed at least monthly. Bacon and bread baits require more frequent changing to ensure that the bait is fresh. Position traps adjacent to walls.
  - c. A single trap of glueboard should be positioned every 25 to 50 feet along the interior perimeter of the building, especially in food storage facilities.

## RODENTS (cont.)

### CHEMICAL CONTROL:

#### PESTICIDE: DIPHACINONE: Anticoagulant - multiple-dose

1. EPA Reg #: various
2. Formulation: Bait block
3. AI: 0.005%
4. Source: BEI
5. Application: Preventive - routine baiting program
  - a. Strength: 0.005%
  - b. Diluent: None
  - c. Rate: 2 - 4 oz bait every 50 ft., along exterior building perimeter
  - d. Equipment: Tamper-proof bait station where necessary.
6. Areas to treated:
  - a. Use around food-handling and food storage facilities.
  - b. Not greatly affected by bird feeding and wet-weather.
  - c. Can be placed in trees, sewers or other likely places rodents may be active.
7. Caution:
  - a. Do not spray the bait stations. Avoid placing the bait stations in areas accessible to children, pets, domestic animals, and wildlife.
  - b. Do not place bait in areas where there is a possibility of contaminating food or surfaces that come in direct contact with food.
  - c. Replace all baits every 2 weeks for continuous control of rodents.
8. Protective equipment: Light-weight rubber gloves.

#### PESTICIDE: Bromadiolone: Anticoagulant - single-dose

1. EPA Reg #: various
2. Formulation: Bait block
3. AI: 0.005%
4. Source: BEI
5. Application: Remedial - for active infestations
  - a. Strength: 0.005%
  - b. Diluent: None
  - c. Rate: 4-16 oz bait every 15-30 ft. along exterior building perimeter
  - d. Equipment: Tamper-proof bait station where necessary.
6. Areas to treated:
  - a. Use around food-handling and food storage facilities.
  - b. Not greatly affected by bird feeding and wet-weather.
  - c. Can be placed in trees, sewers or other likely places rodents may be active.
7. Caution:
  - a. Do not spray the bait stations. Avoid placing the bait stations in areas accessible to children, pets, domestic animals, and wildlife.
  - b. Do not place bait in areas where there is a possibility of contaminating food or surfaces that come in direct contact with food.
  - c. Maintain supply of fresh bait for 10 days or until signs of rodent activity disappears.
8. Protective equipment: Light-weight rubber gloves.

## **SPIDERS**

PURPOSE: Control of a household nuisance pest.

PRIORITY: 3

SURVEILLANCE: Based on complaints and verified by pest controllers.

### **NON-CHEMICAL CONTROL:**

1. Ensure doors and windows are screened.
2. Vacuum or mechanically crush spiders and sweep away webbing and egg masses.

### **CHEMICAL CONTROL:**

PESTICIDE: Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - outdoor treatment.
  - a. Strength: 0.03%.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer/power sprayer.
6. Areas to be Treated: see label
7. Caution:
  - a. Do not apply to pasture or cropland.
  - b. Do not allow pets or children on the treated areas until spray dries.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat, rubber boots.

## STORED PRODUCTS PESTS

PURPOSE: Control of pests that can damage subsistence products.

PRIORITY: 3

### SURVEILLANCE:

1. Veterinary personnel:
  - a. Conduct routine surveillance of commodities.
  - b. Receive complaints from customers of commissaries and Class I subsistence supply.
  - c. Coordinate findings with pest controllers.
  - d. Submit specimens to Tripler Army Medical Center, Preventive Medicine Entomologist for identification.
2. Preventive Medicine:
  - a. Conduct semi-annual survey.
  - b. Spot check high-risk products by opening boxes and looking for stored products pests.
3. Pest Controller:
  - a. Check glueboards, if used, for the presence of stored products pests.
  - b. Submit specimen to Tripler Army Medical Center, Preventive Medicine Entomologist for identification.

### NON-CHEMICAL CONTROL:

1. Clean up spilled food items.
2. Seal cracks in the floors that may hold food.
3. Rotate stock and ensure a short holding time.
4. Isolate infested products.
5. Cold storage can be used to kill pests.

### CHEMICAL CONTROL:

PESTICIDE: Aluminum Phosphide (Phostoxin) RESTRICTED USE PESTICIDE

1. EPA Reg #: 72959-4
2. Formulation: Concentrated tablets
3. AI: 55%
4. Source: NSN: 6840-00-442-5698
5. Application: Corrective
  - a. Strength: 55 %
  - b. Diluent: None
  - c. Rate: See label
  - d. Equipment: Plastic tarp or fumigation chamber.
6. Areas to be treated:
  - a. Infested products can be treated in place or,
  - b. Move infested products to fumigation chamber.
  - c. Allow several days for fumigation to ensure fumigant penetrates the infested products.
7. Caution:
  - a. Have self-contained breathing apparatus (SCBA) immediately available while handling the fumigant.
  - b. Post warning signs.
8. Protective equipment: SCBA, coveralls, light-weight rubber gloves.

## TERMITES

PURPOSE: Control of a pest that can damage and destroy buildings.

PRIORITY: 2

### SURVEILLANCE:

1. Based on complaints by building occupants.
2. Observed by building maintenance personnel during building remodeling and/or repair.
3. Noted by pest controllers during semi-annual/annual inspection.

### NON-CHEMICAL CONTROL:

1. Design termite-proof buildings for new construction.
2. Use of non-chemical barriers such as Basaltic Termite Barrier and Termi-mesh.
3. Remove old wood and wood scraps.
4. Repair termite damaged wood and replace with treated lumber.
5. Ensure areas around buildings are properly drained.

### CHEMICAL CONTROL:

#### PESTICIDE: Baygon (Invader HPX)

1. EPA Reg #: 9444-186
2. Formulation: Aerosol
3. AI: 1.0%
4. Source: BEI
5. Application: Treatment to damaged/infested wood.
  - a. Strength: 1.0%
  - b. Diluent: None
  - c. Rate: see label..
  - d. Equipment: Ready-to-use aerosol can.
6. Caution: Use IAW label instructions
7. Protective Equipment: Use of safety glasses recommended.

#### PESTICIDE: Cypermethrin (Demon TC)

1. EPA Reg #: 10182-107
2. Formulation: EC - Special formulation for termite control
3. AI: 25.3%
4. Source: BEI
5. Application: Corrective/preventive; long-term residual control
  - a. Strength: see label.
  - b. Diluent: Water
  - c. Rate: see label.
  - d. Equipment: Hand sprayer, power sprayer, sub-slab/soil injection rods, roto-hammer.
6. Areas to be treated:
  - a. Pre-slab of new construction.
  - b. Sub-slab injection of existing building.
  - c. Along foundation of buildings with crawl spaces.
  - d. Voids of masonry type walls.
  - e. Wood in place.
7. Caution: see label
8. Protective equipment: Respirator (Half-mask), goggles, rubber boots, rubber gloves, coveralls, and hat.

## TICKS

PURPOSE: Control of nuisance biting pest.

PRIORITY: 3

### SURVEILLANCE:

1. Performed by Tripler Army Medical Center, Department of Preventive Medicine or Pest Control Personnel.
2. Based on complaints of indoor biting pest.
3. Inspect bedrooms, around pet bedding, under cushions of upholstered furniture, under edge of carpets. Check walls especially wall corners and molding and curtains or drapes.

### NON-CHEMICAL CONTROL

1. Remove pet from premises.
2. A few ticks can be hand-picked and destroyed.
3. Vacuuming will remove numerous ticks.

### CHEMICAL CONTROL:

PESTICIDE: Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - residual indoor/outdoor treatment.
  - a. Strength: see label.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer.
6. Areas to be Treated:
  - a. See label for indoor pest control.
  - b. Outdoors apply spot or band treatment to areas where pests may crawl.
7. Caution:
  - a. Avoid spraying electrical devices.
  - b. Avoid food contact surfaces such as counter tops.
  - c. Do not apply where children are likely to contact treated surfaces.
  - d. Apply only as a crack and crevice treatment.
  - e. Ensure food, dishes, pans and eating utensils are covered or removed from treatment areas.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat.

## **TURF PESTS (GENERAL)**

**PURPOSE:** Control of most pests attacking lawns and turf such as armyworms, cutworms, sod webworms, trips, chinch bugs, crickets and earwigs.

**PRIORITY:** 3

**SURVEILLANCE:** Based on complaints and verified by pest controllers.

**NON-CHEMICAL CONTROL:** Not applicable.

**CHEMICAL CONTROL:**

**PESTICIDE:** Lambda-cyhalothrin (Demand CS)

1. EPA Reg #: 100-1066
2. Formulation: CS
3. AI: 9.7%
4. Source: NSN 6840-01-428-6646
5. Application: Corrective - outdoor treatment.
  - a. Strength: 0.03%.
  - b. Diluent: Water.
  - c. Rate: see label.
  - d. Equipment: hand sprayer/power sprayer.
6. Areas to be Treated: see label
7. Caution:
  - a. Do not apply to pasture or cropland.
  - b. Do not allow pets or children on the treated areas until spray dries.
8. Protective Equipment: Respirator, goggles, coveralls, rubber gloves, hat, rubber boots.

## WEEDS

PURPOSE: Control of unwanted vegetation.

PRIORITY: 3

SURVEILLANCE: Improved grounds are inspected quarterly for unwanted vegetative growth.

### NON-CHEMICAL CONTROL:

1. Mowing or cutting unwanted plants.
2. Hand removal of unwanted plants.
3. Selective growing of preferred plant species.
4. Fertilization and watering practices to reduce plant growth.

### CHEMICAL CONTROL:

PESTICIDE: Glyphosate (Roundup)

1. EPA Reg #: 524-475
2. Formulation: EC
3. AI: 41%
4. Source: NSN: 6840-01-108-9578
5. Application: Corrective - control of grasses and other plants.
  - a. Strength: 1.0% unless otherwise specified.
  - b. Diluent: Water
  - c. Rate: 1-1/3 oz /gal water, 1 qt/25 gal water.
  - d. Equipment: 2 gallon hand sprayer, power sprayer with spray gun or spray boom.
6. Areas to be treated: Along drainage ditches, around buildings, and along fence rows.
7. Time of application: Any time plants are actively growing.
8. Caution:
  - a. Avoid drift.
  - b. Do not mow or till prior to treatment.
  - c. Do not apply if rainfalls is imminent.
9. Protective equipment: Respirator, goggles, rubber gloves, rubber boots, coveralls, and hat.

## WOOD BORERS

PURPOSE: Control of pest that attack seasoned wood and wood products.

PRIORITY: 2 - for infestations of the building structure and government furniture.

SURVEILLANCE:

1. Based on complaints and verified by pest controllers.
2. Submit specimens to the Installation Pest Management Coordinator for identification.

NON-CHEMICAL CONTROL: Removal and destruction of infested wood.

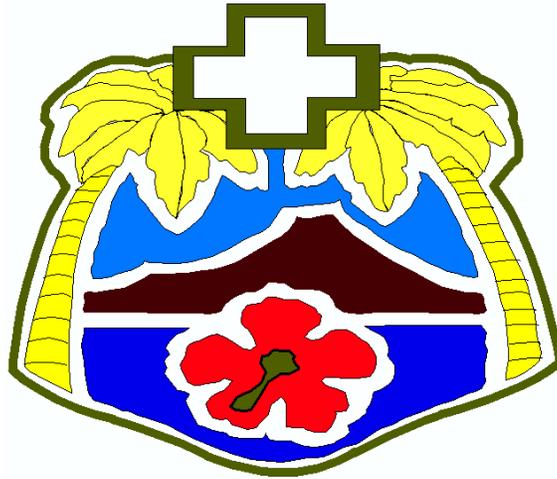
CHEMICAL CONTROL:

PESTICIDE: Baygon (Invader HPX)

1. EPA Reg #: 9444-186
2. Formulation: Aerosol
3. AI: 1.0%
4. Source: BEI
5. Application: Treatment to damaged/infested wood.
  - a. Strength: 1.0%
  - b. Diluent: None
  - c. Rate: see label..
  - d. Equipment: Ready-to-use aerosol can.
6. Caution: Use IAW label instructions
7. Protective Equipment: Use of safety glasses recommended.

APPENDIX E. PEST MANAGEMENT PLAN FOR TRIPLER ARMY MEDICAL CENTER

# PEST MANAGEMENT PLAN



FOR

**TRIPLER ARMY MEDICAL CENTER**

Prepared by:

John D. Nelson, B.C.E

Entomologist

01 November 2006

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## **Executive Summary**

Tripler Army Medical Center (TAMC) is the largest military medical treatment facility in the Pacific and provides outpatient and inpatient care to over 250,000 persons including active duty personnel of all branches of military service and their families, retirees, as well as beneficiaries of the Veterans Administration. TAMC includes the main structure located on the Moanalua Ridge on Jarrett White Road in Honolulu as well as clinics at Schofield Barracks and Fort Shafter.

This plan applies to all activities and individuals working or otherwise doing business in any of TAMC facilities. At no time will pest management operations be done in a way that is either injurious to personnel or the environment. Any pest management actions taken within TAMC will conform to the principles of integrated pest management (IPM). The responsibility for proper use of pest management will begin with those individuals occupying or maintaining buildings or open spaces within TAMC facilities. Non-chemical control measures will be used as the primary means of pest control and only when exhausted will any pesticide treatment be considered. Within the medical treatment facility, special provisions will be made for patient sensitive areas and laboratories with infectious agents.

Pests addressed in the plan include blood-sucking insects (fleas, mosquitoes) crawling insects (ants, cockroaches) filth flies and other flying insects, spiders, stinging insects (wasps and bees) termites, rodents and feral animals. Without control these pests could interfere with the military mission, damage real property, increase maintenance costs and expose personnel to disease pathogens.

## **Introduction**

Tripler Army Medical Center (TAMC) is a tenant of U.S. Army Garrison Hawaii (USAG-HI). General pest management guidelines are contained in the Pest Management Plan (PMP) for USAG-HI, which is maintained by the Installation Pest Management Coordinator, Environmental Division, Directorate of Public Works, USAG-HI. TAMC, due to its unique and sensitive role as a medical treatment facility, has an autonomous pest management program under this plan. The TAMC facilities pest management program is administered by the TAMC Entomologist.

This plan is designed to augment the USAG-HI PMP and together act as a framework through which pest management is defined and accomplished on TAMC properties. The plan identifies elements of the program to include health and environmental safety, pest management, and administration that are unique to TAMC.

## General provisions

### *Installation description*

This pest management plan covers all TAMC facilities contained in the Operations and Maintenance Management Plan for TAMC:

Bldg.	Type	Sq. footage	Installation
1	Hospital, wing A, B, C	599,578	TAMC
3	Hospital, wing D / Hospital Clinic	134,966	TAMC
4	Hospital, wing F, G, H Hospital Clinic Lab.	467,573	TAMC
6	MRI Facility	1,200	TAMC
9	Central Med. In-Processing / Keiki Coop	4,500	TAMC
25	DPW	4,200	TAMC
673	Health Clinic Med. Lab / Comm. Health Nursing	14,136	Schofield
676	Health Clinic Radiology / Comm. Mental Health	9,840	Schofield
677	Health Clinic Medical Supply / Optometry	14,400	Schofield
679	Health Clinic	6,531	Schofield
680	Health Clinic	14,876	Schofield
681	Health Clinic FP #1 / TMC #3 / Occup. Therapy	11,270	Schofield
682	Health Clinic FP #2 / Immunization / Mental Health	13800	Schofield
683	Urgent Care Clinic / Administration Headquarters	6580	Schofield
684	Dental Clinic #6 / TMC / Medical Clinic #1	14490	Schofield
685	Health Clinic	13500	Schofield
686	Health Clinic Physical Therapy / Med Co C Orderly Rm	14700	Schofield
687	Health Clinic Audiology	14700	Schofield
691	Health Clinic Pharmacy / Patient Administration	4390	Schofield
660	Dental Clinic	17,930	Schofield
934	Veterinary Services Branch Office	1520	Schofield
935	Veterinary Treatment Facility	1894	Schofield
936	Veterinary Treatment Facility	1728	Schofield
435	Veterinary Facility	5093	Shafter
137	Central Plant / Emergency Generator	22,213	TAMC
141	Hospital Support Shop / Wave	3400	TAMC
143	Hospital Support Shop / Wave	3500	TAMC
145	Hospital Support Shop / Wave	3592	TAMC
10	Hospital Support Shop / oxygen tank	100	TAMC
315	Fisher House	5120	TAMC
2	Storage GP Inst.	986	TAMC
40	Clinical Investigation	38,673	TAMC
147	Clinical Investigation / Preventive Medicine	2320	TAMC
148	Clinical Investigation	2925	TAMC

### **Plan maintenance**

This pest management plan is maintained by the TAMC Entomologist. Pen and ink changes are made to the plan throughout the fiscal year. The plan is annually updated by the TAMC Entomologist and approved by the Chief of Environmental Health, TAMC, COR for Pest Control, TAMC, and the USAG-HI Pest Management Coordinator to reflect all changes made in the pest management program during the fiscal year. Annual updates of this plan will be sent to the USAG-HI Pest Management Coordinator not later than 15 October.

## Integrated Pest Management

### *IPM principles*

IPM is the judicious use of non-chemical and chemical means to reduce pest populations to tolerable or safe levels. One of the key elements of urban IPM is monitoring pest population levels so that an effective decision making process can be used to determine if or when treatment is needed and subsequently, the effectiveness of those treatments. Additionally, preference is placed on nonchemical means such as sanitation and exclusion, then low-impact pesticide treatments, such as enclosed bait stations, and finally direct pesticide applications, only when all other options have been exhausted or are not feasible.

**Mechanical and Physical Control.** This type of control alters the pest's environment, traps and removes pests, or excludes pests. Examples of this type control include: harborage elimination through caulking or filling voids, screening, mechanical traps or glue boards, and nets and other barriers to prevent entry into buildings.

**Cultural Control / Sanitation.** This method involves the elimination of food, water and shelter from the human environment, thus making it inhospitable to pest organisms.

**Chemical Control.** Pesticides are chemicals that are designed to kill living organisms. As such they do pose some risks to humans and the environment. Modern chemistry has both maximized safety and minimized the risks associated with newer cutting-edge pesticides. When considering the use of pesticides, the benefits due to the reduction in pest organisms must be weighed against the risk posed by these chemicals. In general, pesticide application is the last resort when dealing with most pest management situations.

### *IPM procedures*

Due to the sensitive mission of TAMC facilities, comprehensive plans have been designated for common pest problems. Flow charts for all the major pest groups are contained in Appendix B.

## Health and Safety

All pesticide applications will be made by the Pest Control Contractor. Thus safety and health issues such as hazard communication, personal protective equipment, pest control vehicle, spill kit and spill response, and fire protection are the responsibility of the Pest Control Contractor and will be provisioned for in the Pest Control Contract. All pesticide use will be done in accordance with the following laws and regulations:

### *Federal Laws and Regulations*

1. Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as outlined in Title 40, Code of Federal Regulations (40 CFR).
2. Federal Environmental Pesticide Control Act (FEPCA) "amended FIFRA".
3. Food Quality Protection Act (FQPA).
4. Federal Food, Drug and Cosmetic Act (FDCA).

5. Clean Water Act
6. Safe Drinking Water Act
7. Endangered Species Act
8. Resource Conservation and Recovery Act (RCRA)
9. Superfund Amendments and Reauthorization Act (SARA)
10. Occupational Safety and Health Act (OSHA)
11. Coastal Zone Management Act

### ***State Laws and Regulations***

1. Hawaii Pesticide Law (Chapter 149A, Hawaii Revised Statutes) as outlined in Title 4, Chapter 66, Administrative Rules on Pesticides, Hawaii Department of Agriculture.

### ***DOD Regulations and Directives***

1. Army Regulation 40-5, Preventive Medicine, Chapter 10, Pest and Disease Vector Prevention and Control
2. Army Regulation 200-1, Environmental Protection and Enhancement
3. Armed Forces Pest Management Board Technical Information Memorandum No. 29, Integrated Pest Management in and Around Buildings
4. Armed Forces Pest Management Board Technical Information Memorandum No. 20, Pest Management Operations in Medical Treatment Facilities.
5. Armed Forces Pest Management Board Technical Information Memorandum No. 39, Guidelines for Preparing DOD Pest Control Contracts using Integrated Pest Management.

## **Environmental Considerations**

### **Protection of the Public**

Due to the sensitive nature of the medical treatment facilities, all pesticide applications will be made in accordance with Armed Forces Pest Management Board TIM 20, Pest Management Operations in Medical Treatment Facilities, October 1989. These directives will be included in the pest control contract.

### **Endangered and Protected Species**

Orangeblack Hawaiian Damselfly (*Megalagrion xanthomelas*) - Habitat of this species is in the gulch next to D-wing of TAMC main hospital. For details see Evenhuis et al. 1995. At no time will any pesticide be used in any TAMC facility that will impact this species.

## **Prohibited Activities**

- a. At no time will a pesticide be used in any manner that is inconsistent with its label.
- b. No pesticide will be used that is not currently registered by the EPA and the State of Hawaii.
- c. No pesticides will be used in patient sensitive areas unless all other options have been exhausted and then only when such areas have been isolated from patients and subsequently cleaned to remove any residue of the treatment.
- d. No pesticide will be used in any medical treatment facility unless it is approved for use in hospitals or medical treatment facilities.

## **Administration**

### ***Contracts***

All pest control activities are done by a subcontractor administered under J & J Maintenance (Medcam), the maintenance contractor for all TAMC Facilities.

### ***Record Keeping***

All pest complaints are reviewed by the TAMC Entomologist, who does an inspection and/or consultation to determine the proper course of action. A Pest Management Report (PMR) is used as the conduit for all pest control actions (See Appendix A). This report details the findings of the TAMC Entomologist in addition to any recommendations for action. If structural modifications or pesticide applications are required then the PMR is submitted to TAMC Logistics Division along with a copy to the complainants. The PMR is also used for the collection of pesticide-use data. Upon the application of a pesticide, the information is recorded on the form, which is then signed by the pesticide applicator and submitted back to the TAMC Entomologist. Any and all pesticide applications are subject to this approval process prior to a work order being issued.

All pesticide applications are recorded and archived via DD Form 1532-1 (or equivalent). Pesticide use is summarized on a monthly basis on DD Form 1532 (or equivalent) and is submitted to the USAG-HI Pest Management Coordinator.

### ***Training***

a. The TAMC Entomologist, John D. Nelson, is a GS-11 civilian employee and is a DOD certified pesticide applicator as well as a Board Certified Entomologist in Medical Entomology, Entomological Society of America. The pest control subcontractor is Tropical Termite and Pest Control (Phone: 808-487-2667). All contract pest control technicians that will be applying pesticides within TAMC facilities are certified pesticide applicators in the State of Hawaii.

### ***Quality Assurance/Quality Control***

- a. TAMC will have a QAE for pest control. That QAE for TAMC pest control is Mr. Clarence Saito, who is also the Contract Officer Representative for J and J Maintenance.
- b. A written quality assurance surveillance plan is maintained by TAMC Logistics Division and used to evaluate the work being performed by Tropical Termite and Pest Control personnel.

### ***Coordination - DOD, Other Federal, State and Local***

The TAMC Entomologist acts as the Pest Management Coordinator for TAMC facilities as well as the Medical Entomologist for Pacific Regional Medical Command. As Pest Management Coordinator, the TAMC Entomologist administers the pest management plan, oversees the day-to-day pest management activities and tracks all pesticide use for all TAMC facilities. In addition, as Medical Entomologist, the TAMC Entomologist directs all vector surveillance activities throughout USAG-HI and provides expert consultation to PRMC in medical entomological matters. TAMC Logistics administers the maintenance contractor via a Contract Officer Representative (COR) and administers the day-to-day pest control operations that are recommended by the TAMC Entomologist.

USAG-HI is responsible for any pest management issue outside of a 5-ft radius of any structure listed within TAMC facilities.

## **References**

Armed Forces Pest Management Board TIM 20, Pest Management Operations in Medical Treatment Facilities  
October 1989.

Evenhuis, N., D. Polhemus and S. Swift. 1995. A study of the biology of the Orangeback Hawaiian damselfly  
(*Megalagrion xanthomelas*) with special reference to conservation of the population at Tripler Army Medical  
Center, Oahu. Bishop Museum: Hawaii Biological Survey Final Report.

**Appendix A**  
**Pest Management Report**

**PEST MANAGEMENT / INSPECTION REPORT**

(Attach to Work Order Request)

**Pest Complaint / Inspection**

Point of Contact \_\_\_\_\_  
(Name, Position) (Phone Number) (Signature)

Date of Sighting \_\_\_\_\_ Room (area) \_\_\_\_\_

Inspector Name and Phone # \_\_\_\_\_

Date and Time of Inspection \_\_\_\_\_ Pest I.D. \_\_\_\_\_

Findings \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Recommendations \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Actions Taken**

Date \_\_\_\_\_  
Work Order Reference Number \_\_\_\_\_ Time in \_\_\_\_\_ Time out \_\_\_\_\_

Nonchemical Control (specify) \_\_\_\_\_

Chemical Control - Pesticides:

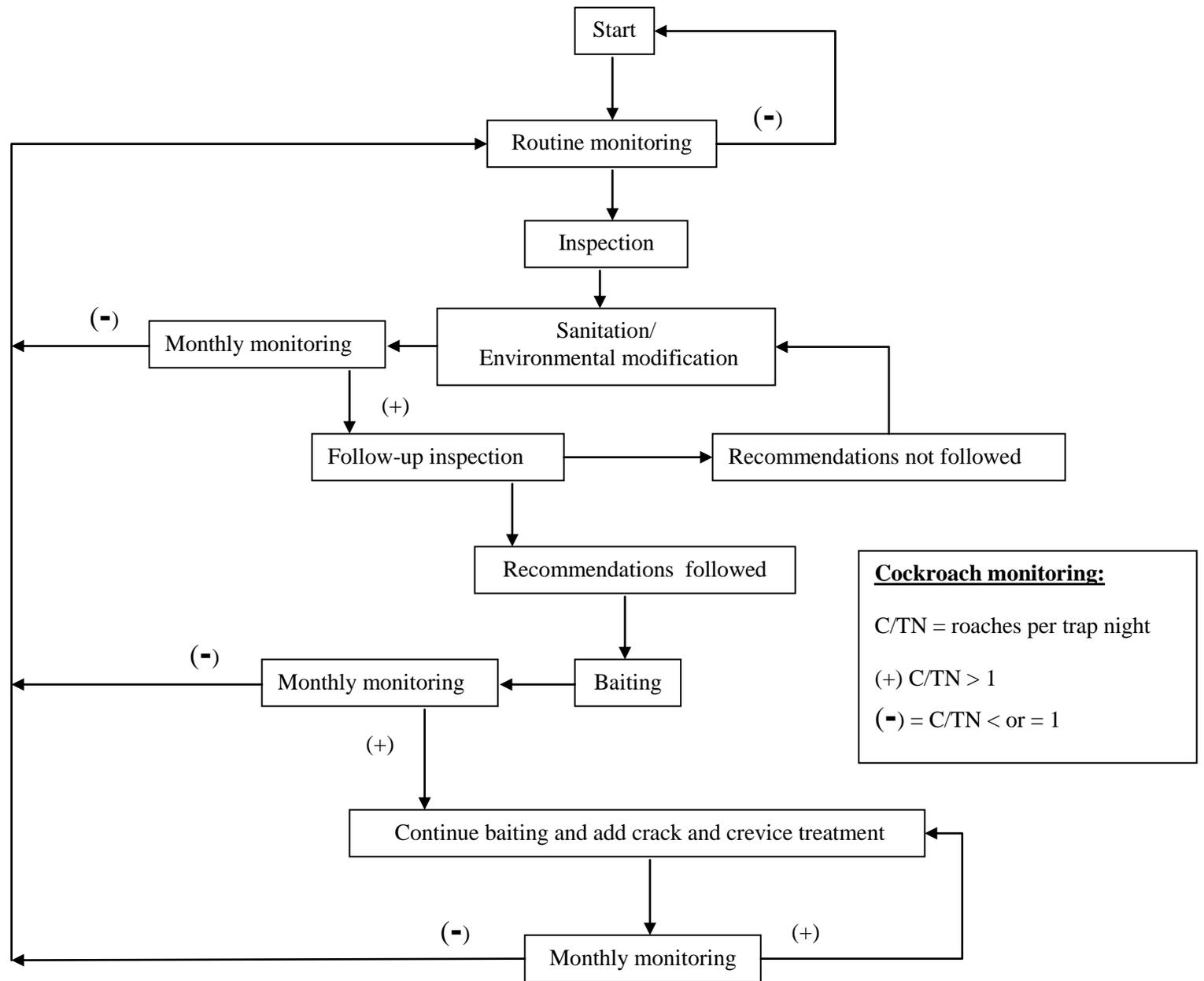
	Pesticide #1	Pesticide #2	Pesticide #3
Product Name			
EPA Registration #			
Active Ingredient			
% Finished Spray			
Amount Applied			

\_\_\_\_\_  
Workers Signature

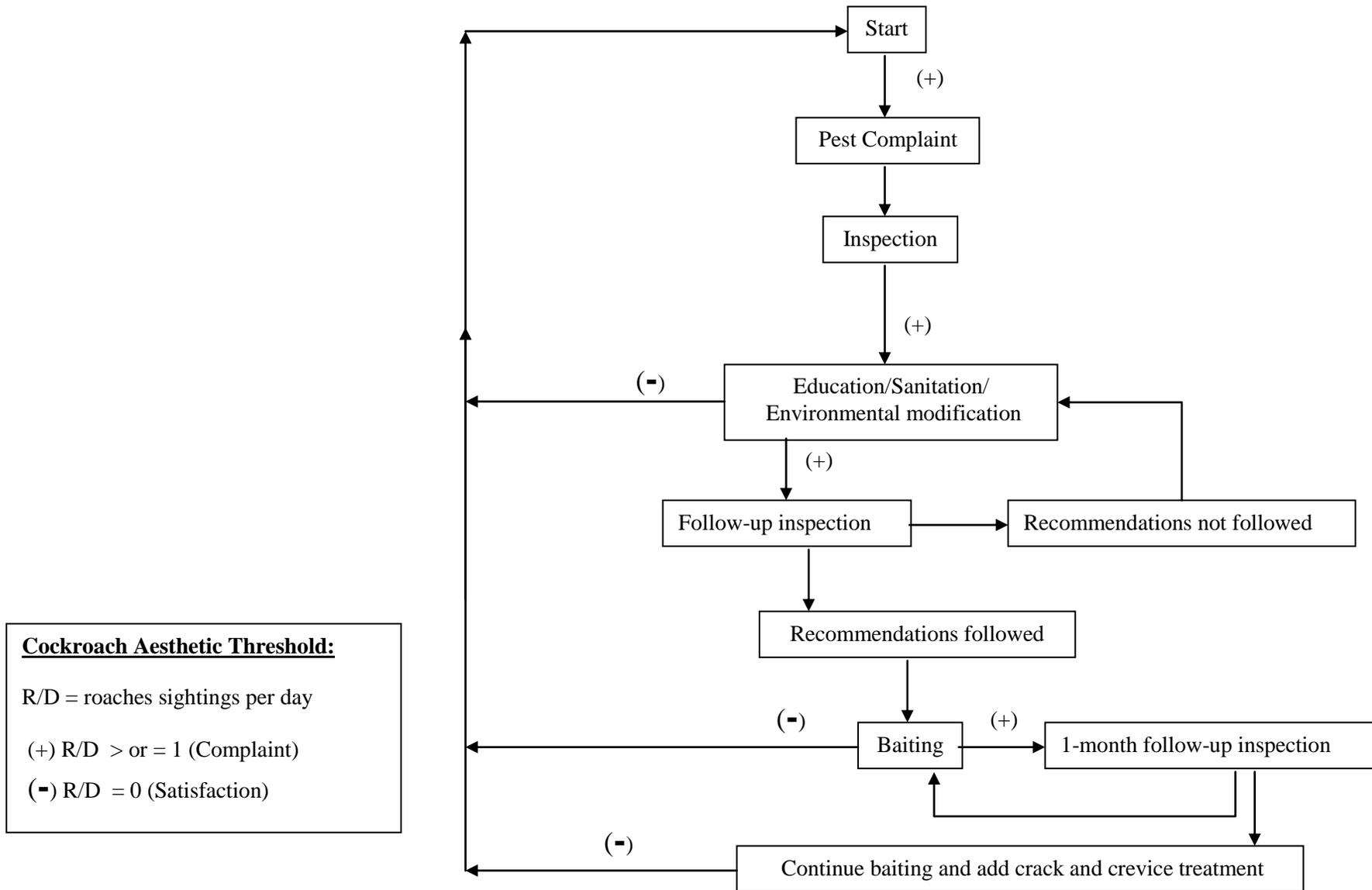
**Return Completed Form to:** Pest Management Coordinator / John D. Nelson, TAMC Entomologist MCHK-PVN;  
Bldg. 147, Phone 433-9944; Pager 574-7786; Fax 433-2964.

**Appendix B**  
**Pest Management Flow-Charts**

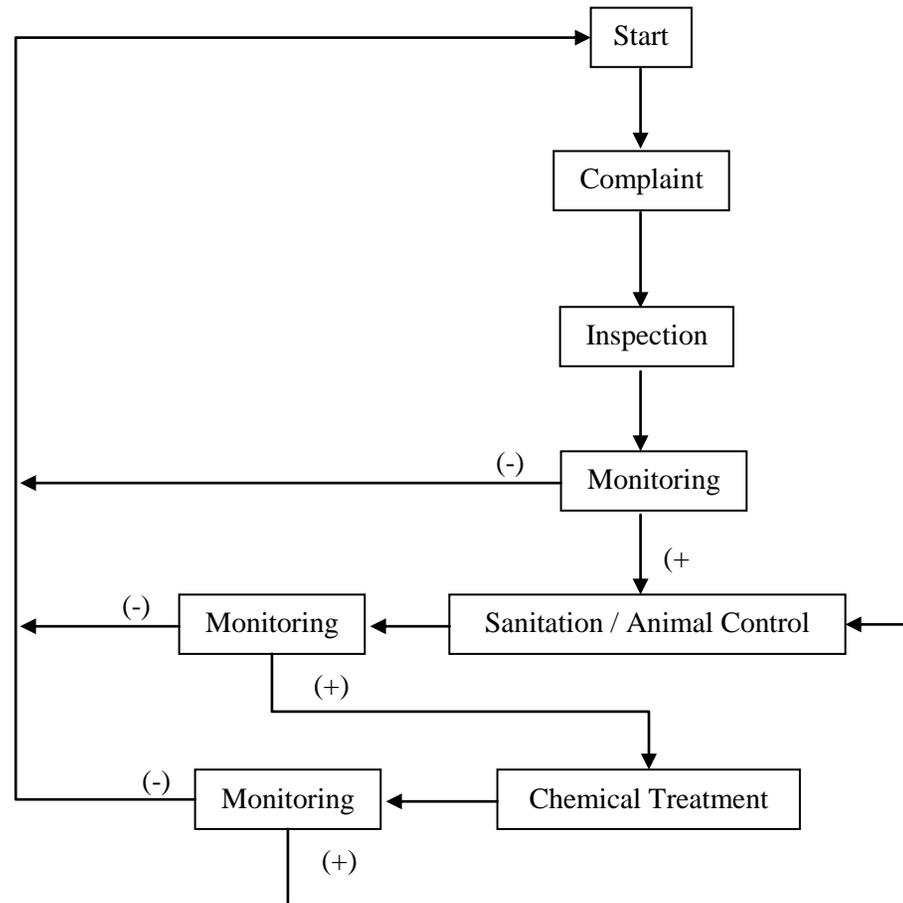
# Integrated Cockroach Management Program for Food Service Facilities



## Integrated Domiciliary Cockroach Management Program for TAMC Facilities

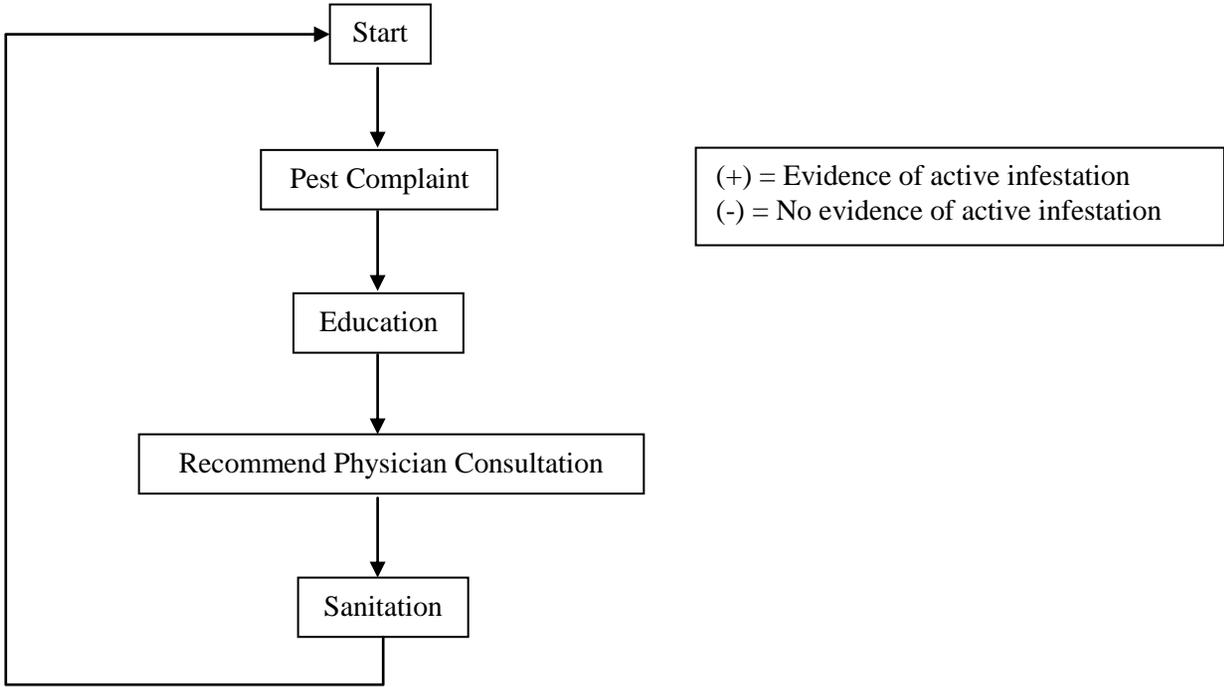


## Integrated Flea Management Program for TAMC Facilities

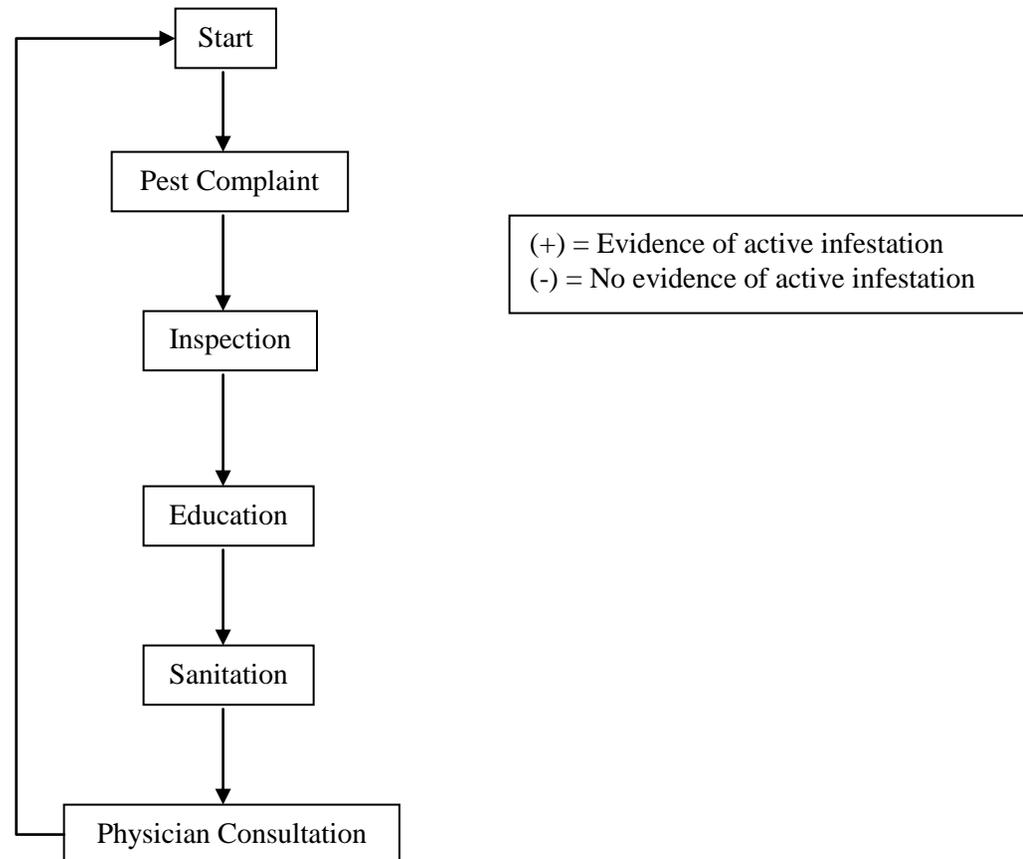


(+) = Evidence of active infestation  
(-) = No evidence of active infestation

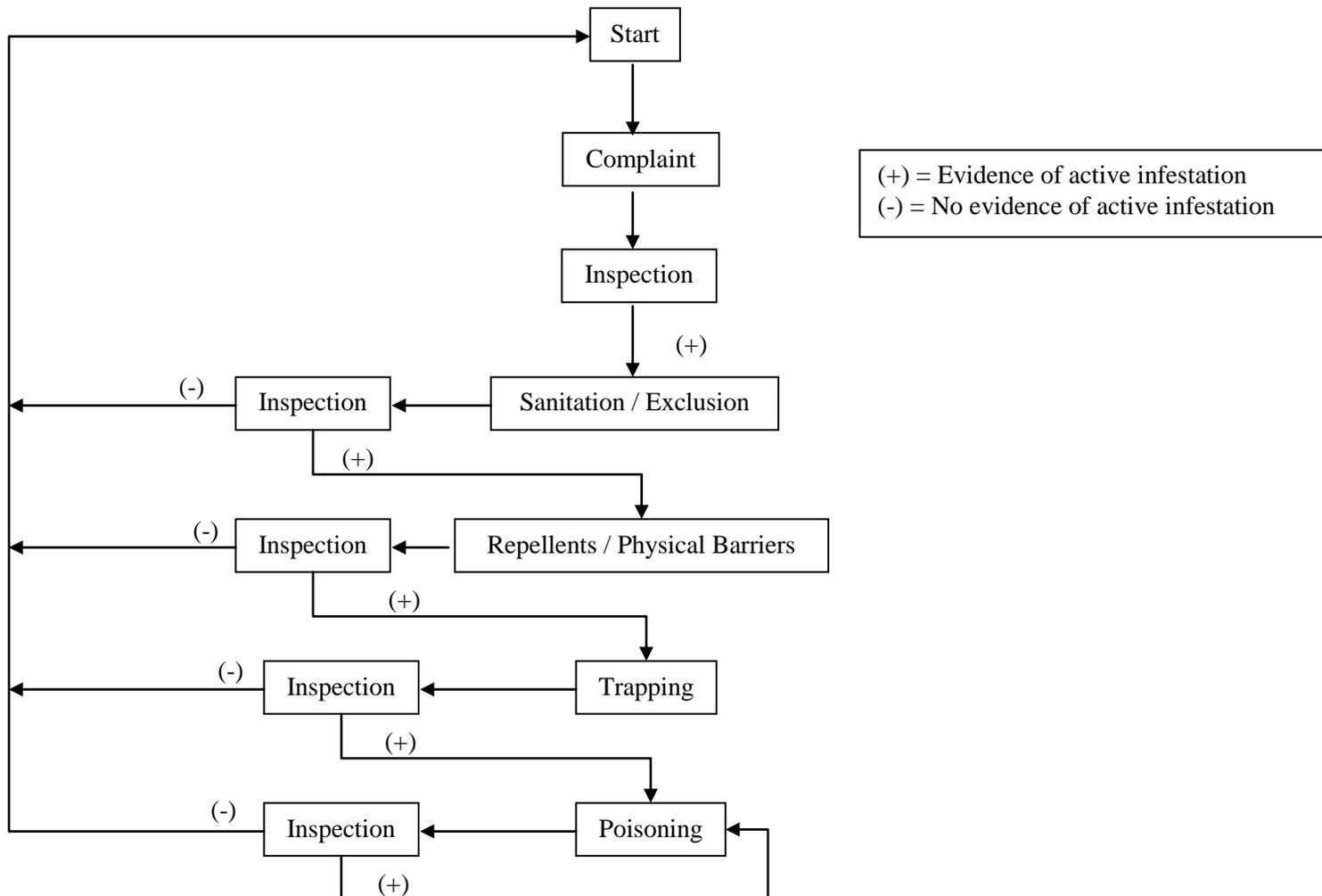
# Integrated Lice Management Plan for TAMC Facilities



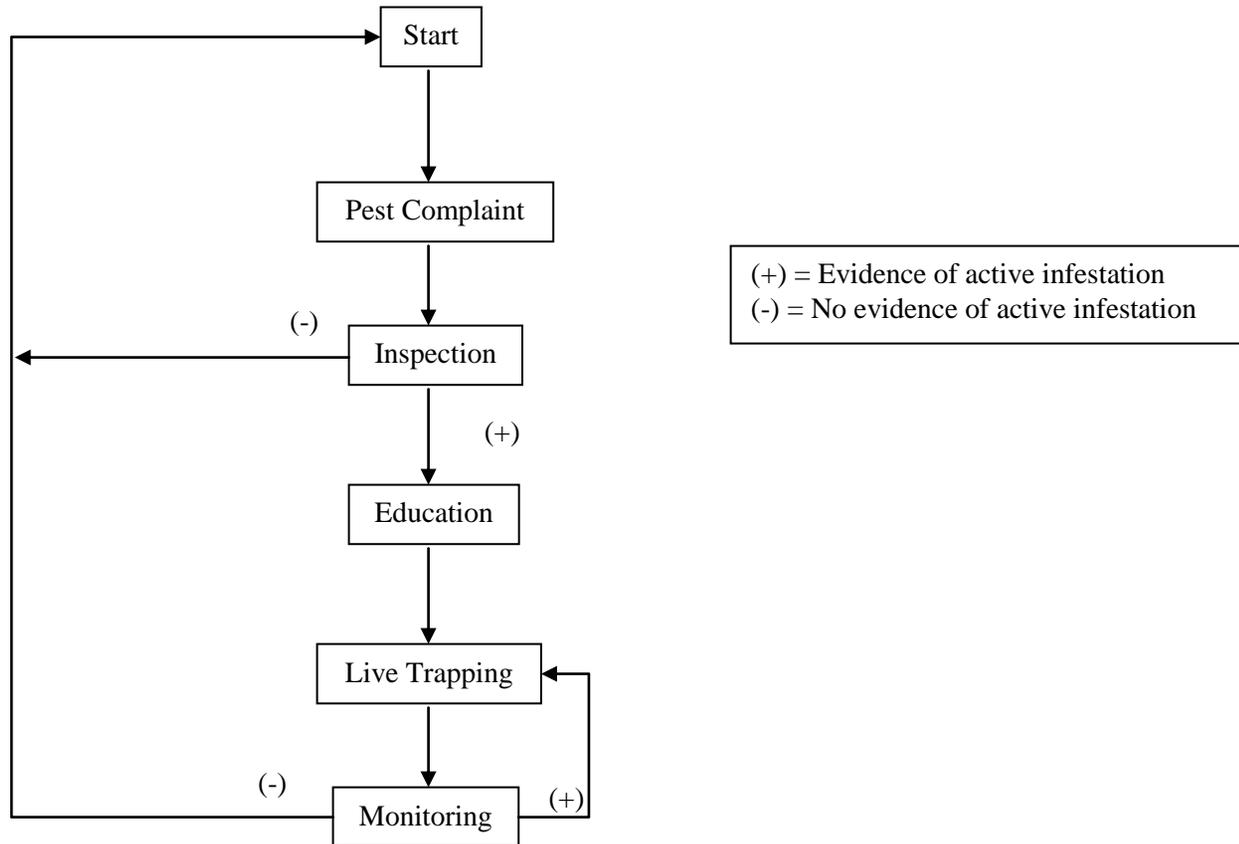
## Integrated Bedbug Management Plan for TAMC



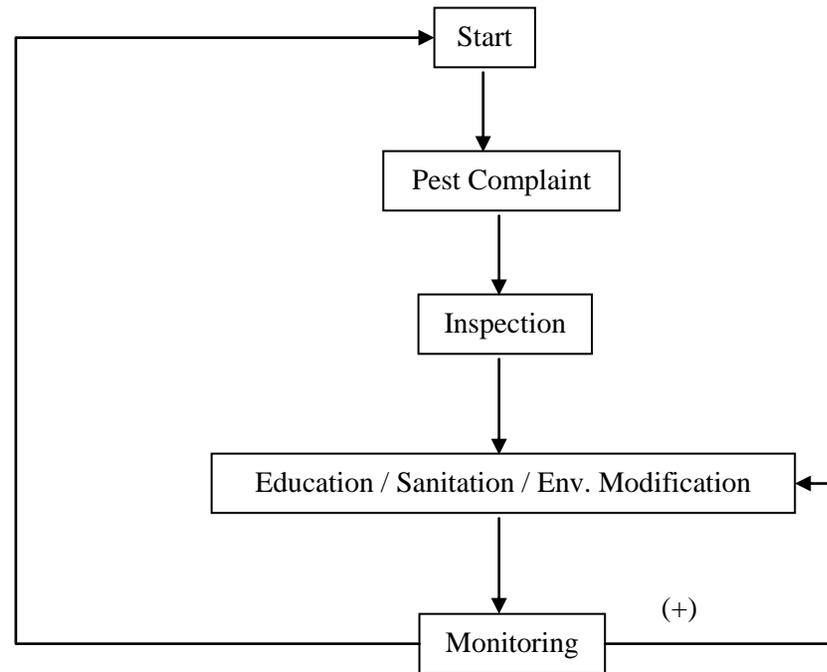
## Integrated Bird Management Plan for TAMC Facilities



## Integrated Feral Cat Management Program for TAMC Facilities

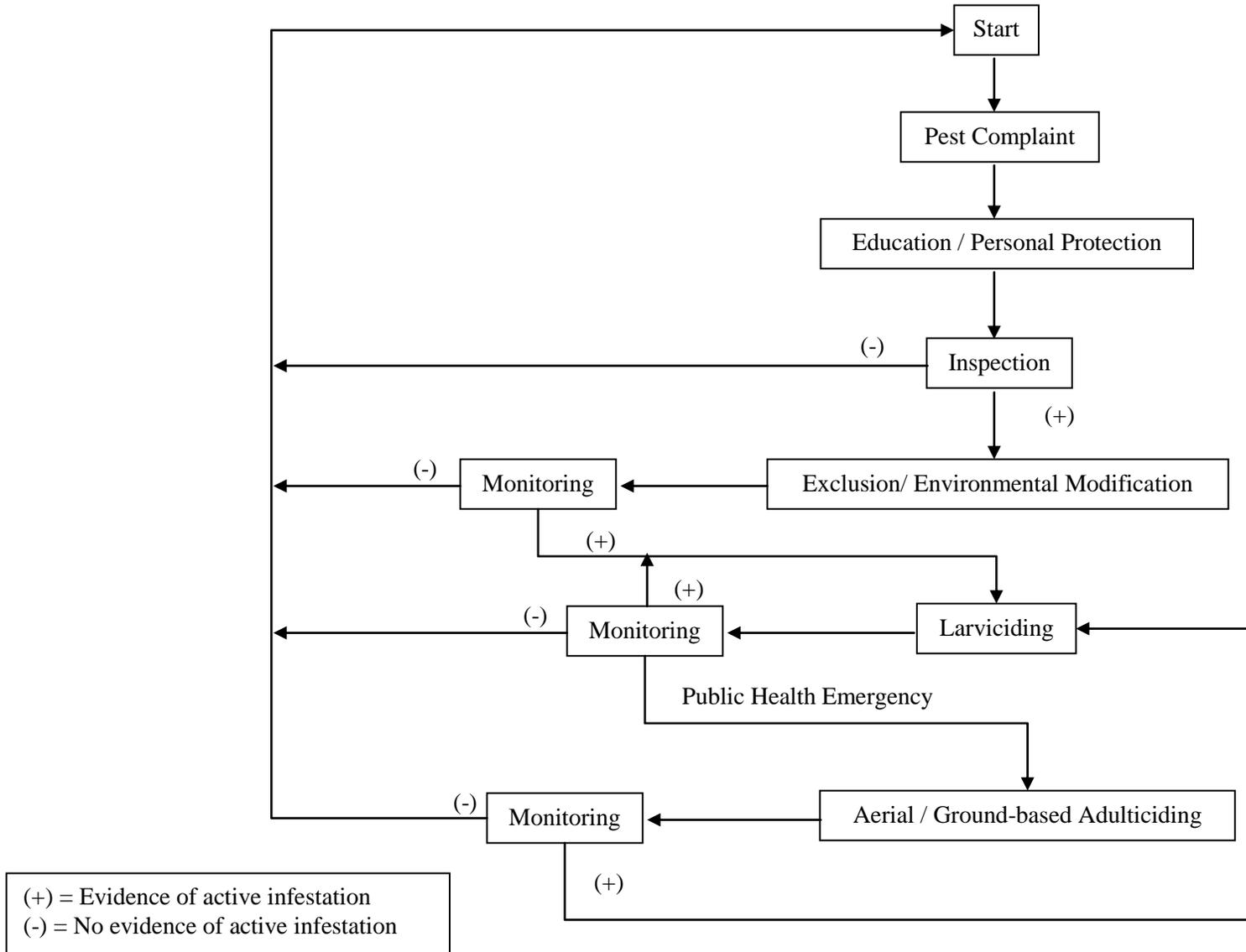


## Integrated Stored-Products Pest Management Program for TAMC

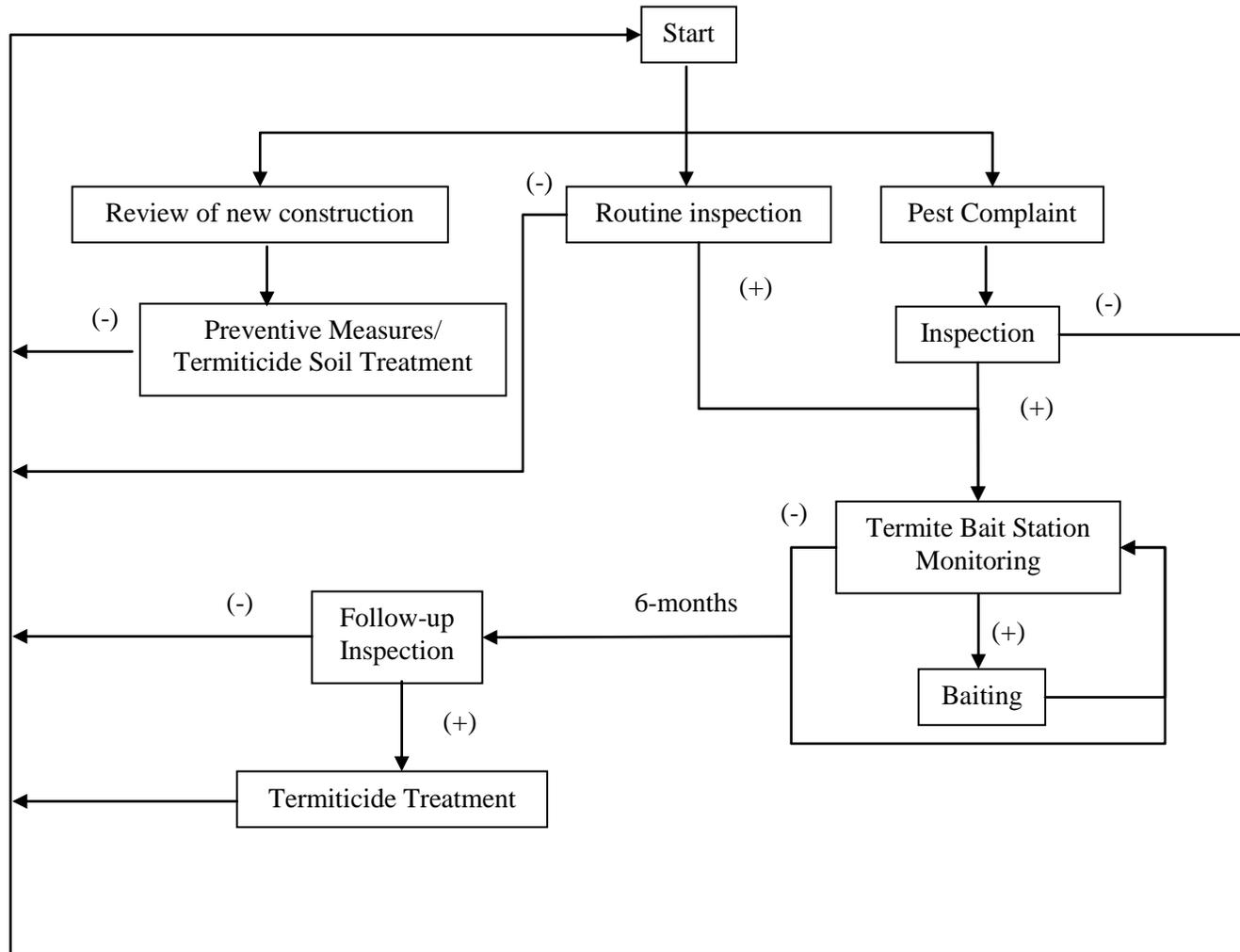


(+) = Evidence of active infestation  
(-) = No evidence of active infestation

## Integrated Mosquito Control Program for TAMC Facilities

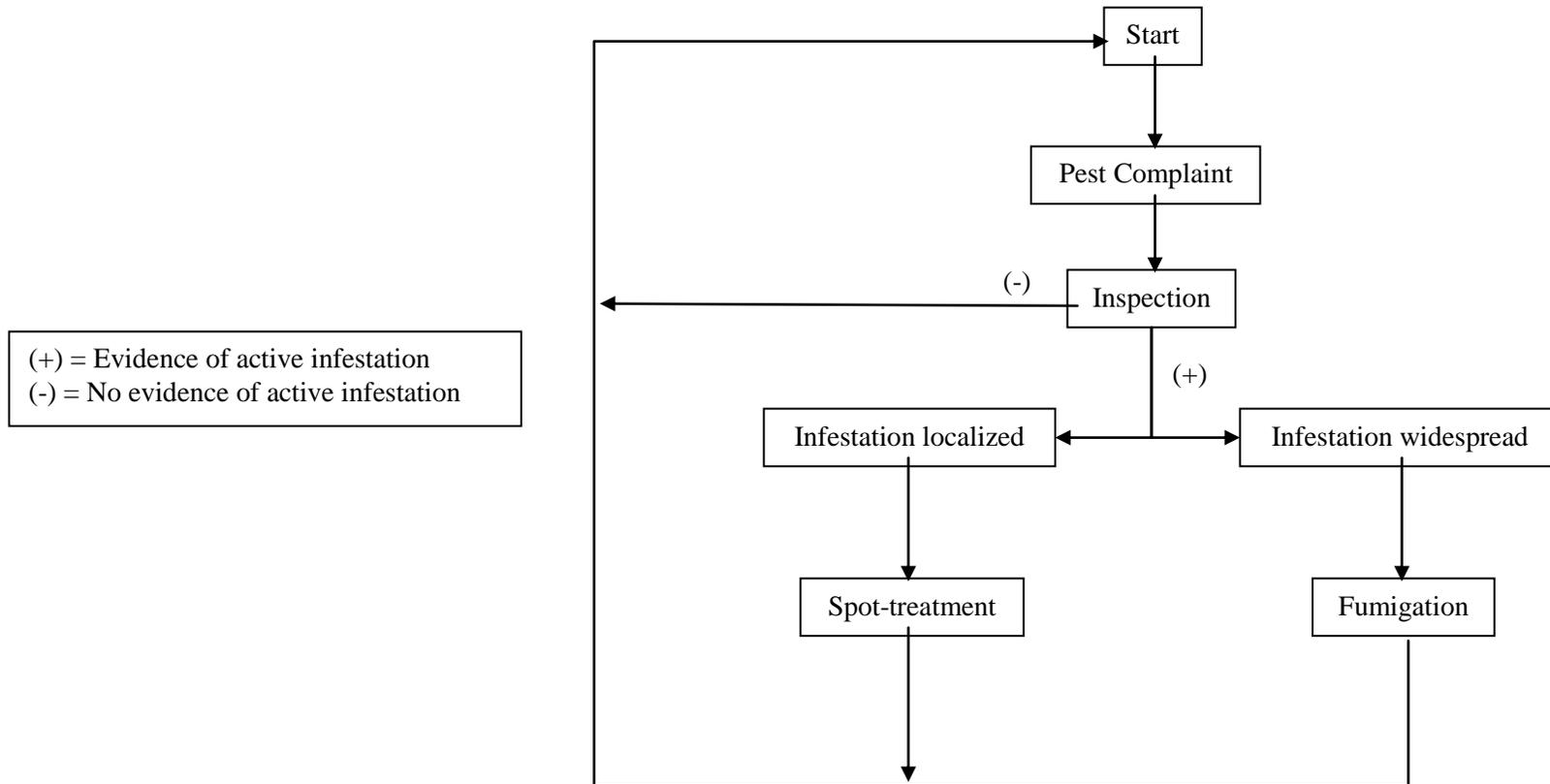


## Integrated Subterranean Termite Management Plan for TAMC Facilities

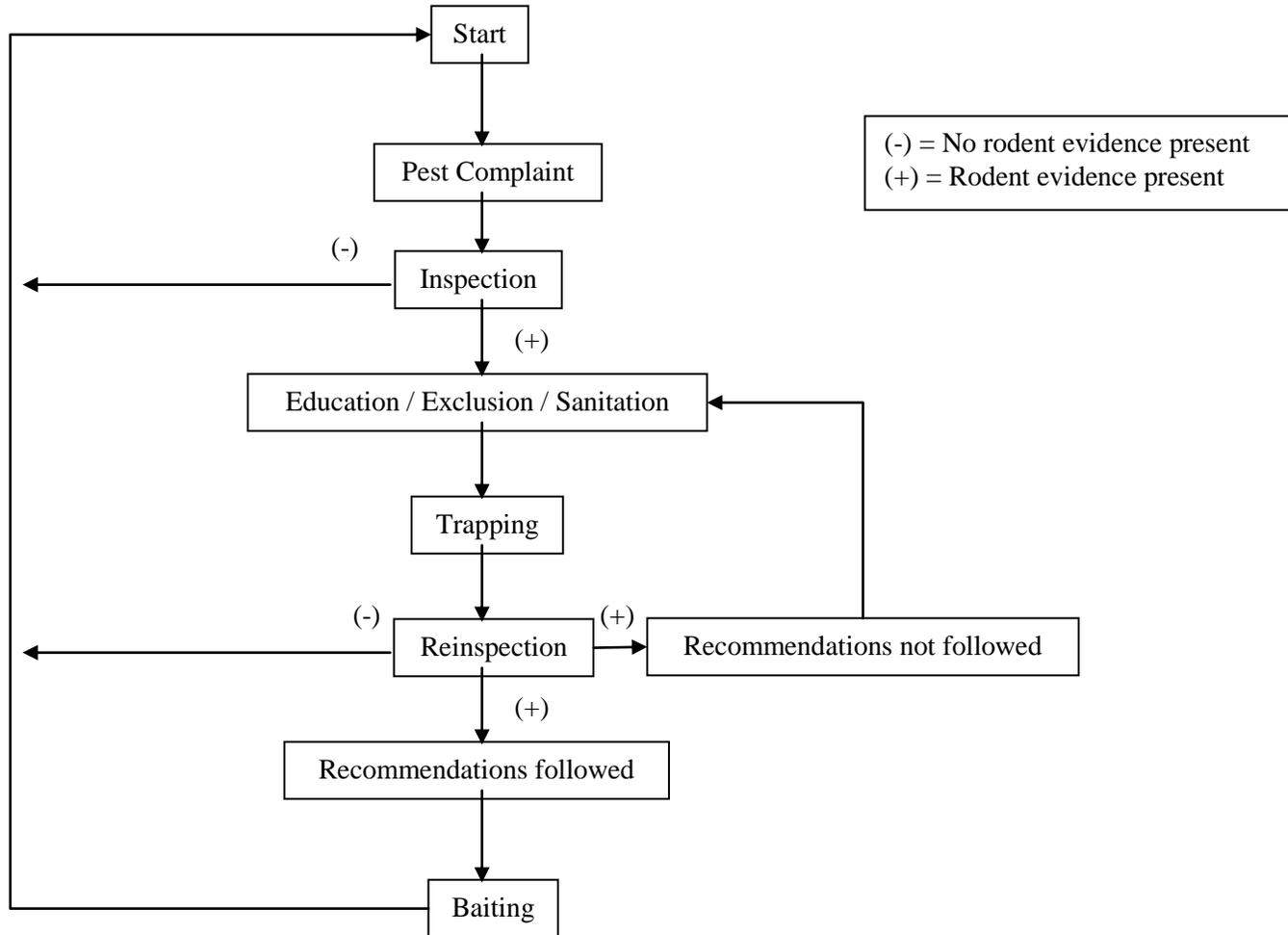


(+) = Evidence of active infestation  
 (-) = No evidence of active infestation

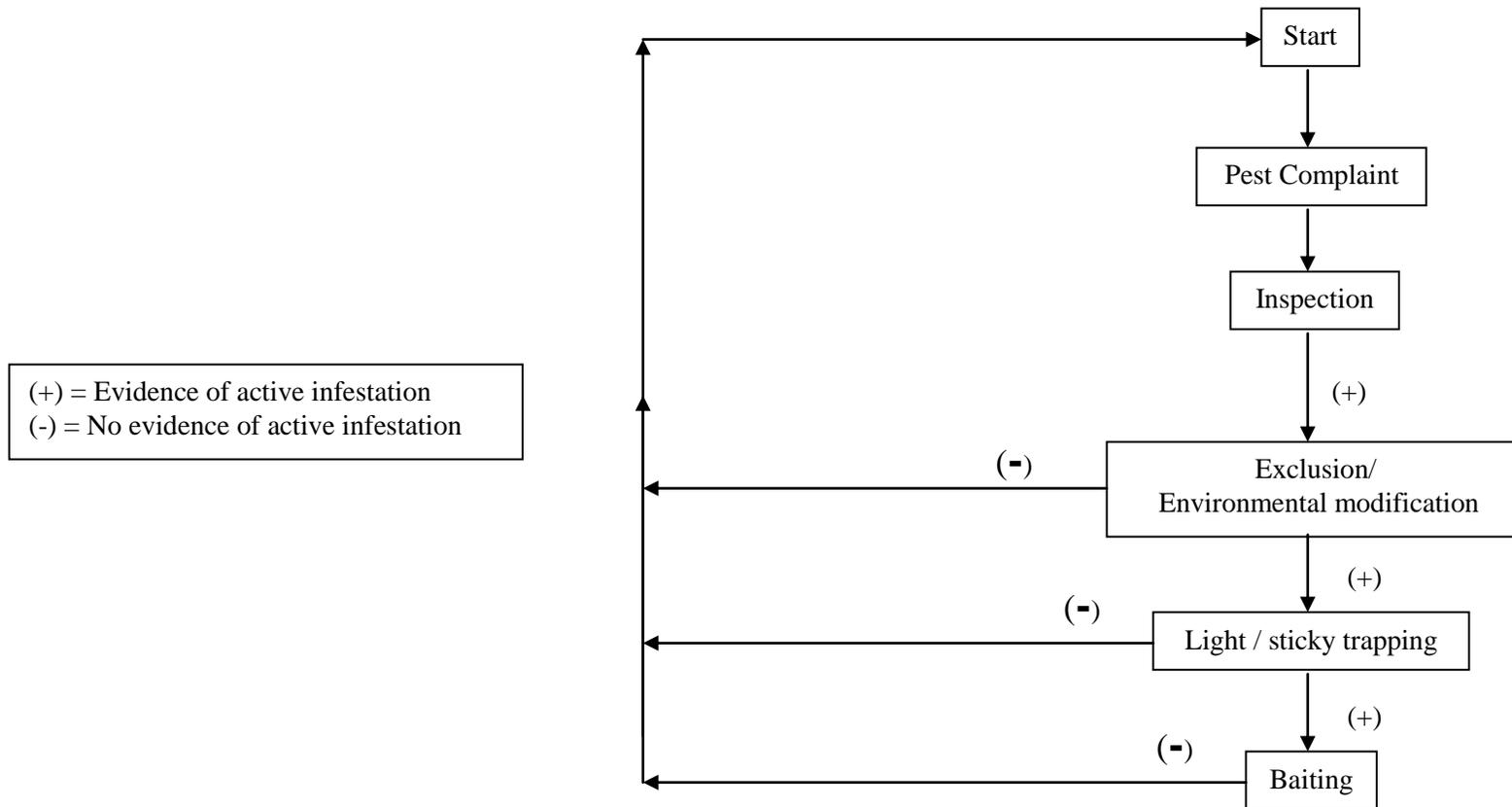
## Integrated Drywood Termite Management Plan for TAMC



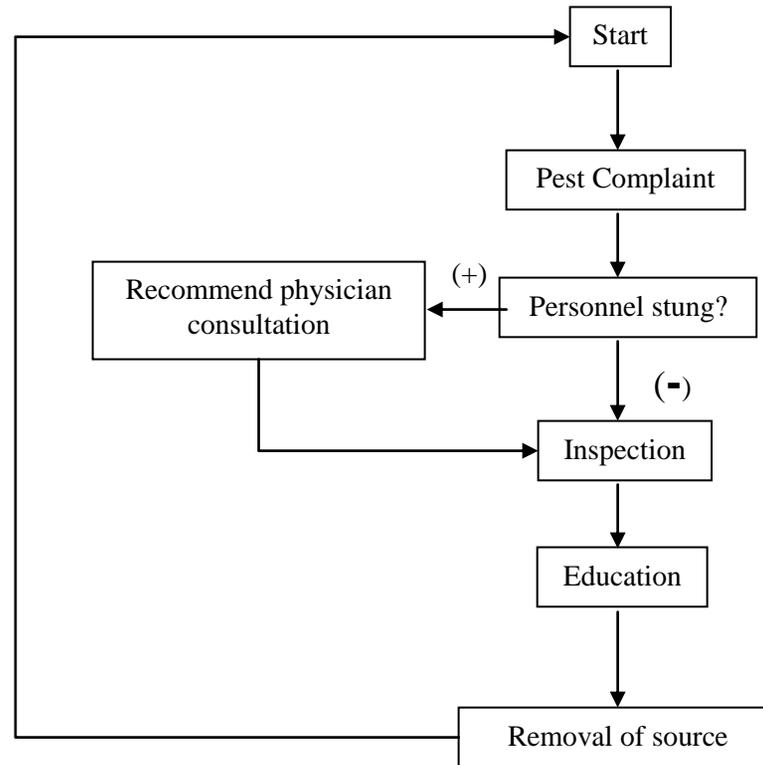
## Integrated Rodent Management Program for TAMC Facilities



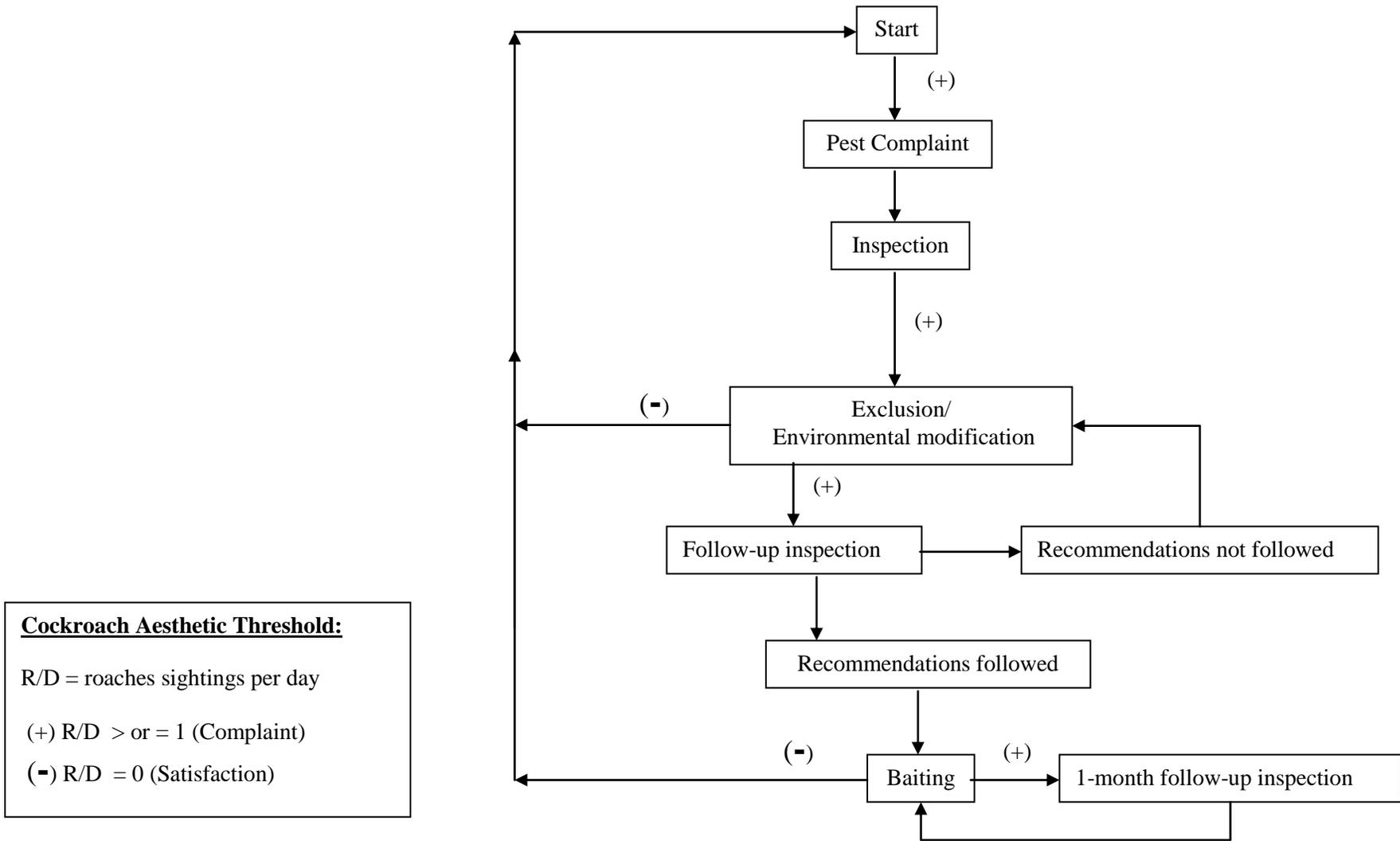
## Integrated Filth Fly Management Program for TAMC



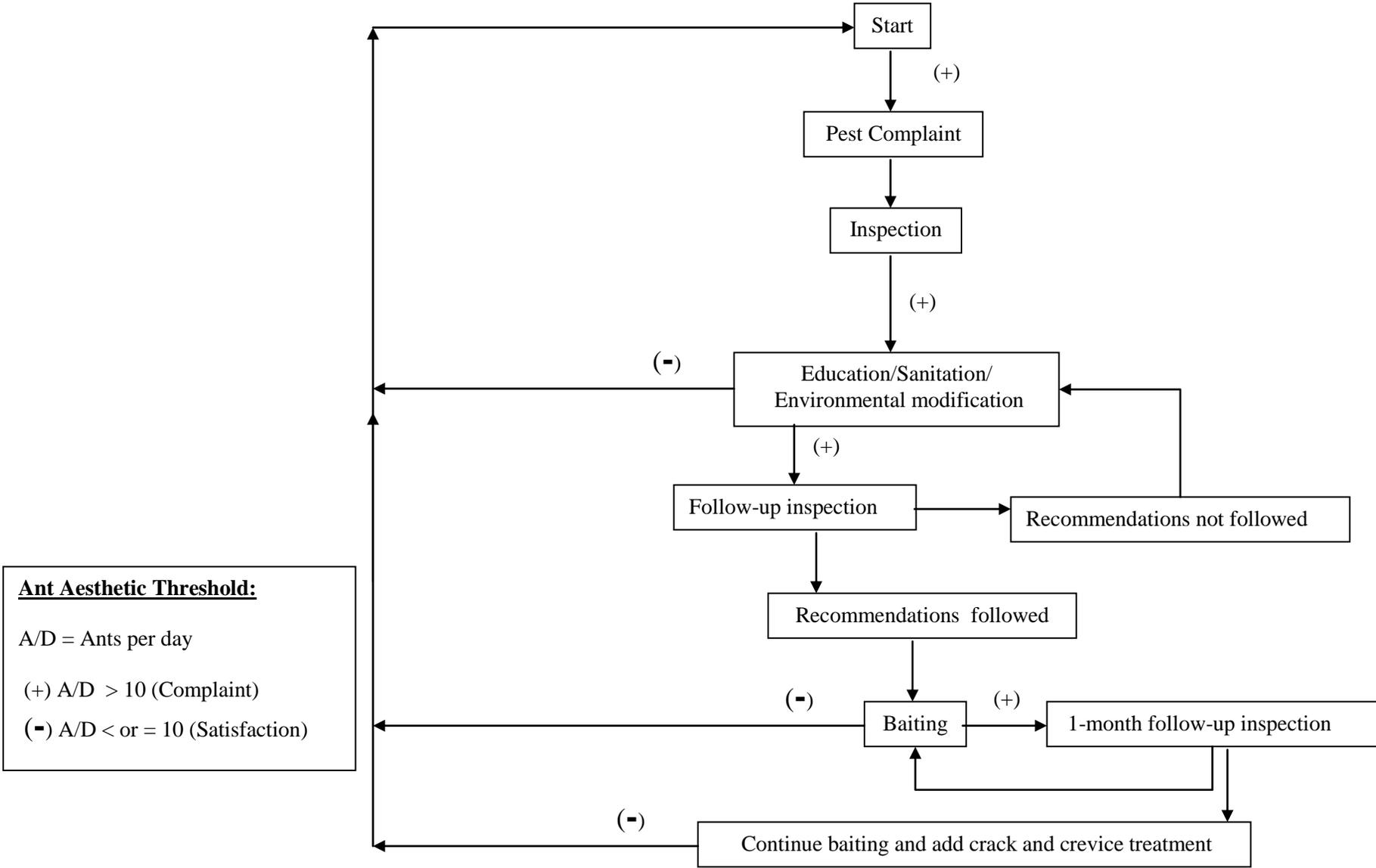
## Integrated Biting/Stinging Insect Management Program for TAMC Facilities



# Integrated Peridomestic Cockroach Management Program for TAMC Facilities



# Integrated Ant Management Program for TAMC Facilities



APPENDIX F. FIVE YEAR TERMITE MANAGEMENT PLAN

FIVE YEAR TERMITE MANAGEMENT PLAN

Facilities are chosen for treatment based on current termite infestation and a history of termite infestation. Historical significance of the facility and proximity to other buildings/areas known to have termite infestations are also factored in. Facilities in bold type are Tier I facilities (Barracks, DFACs, Admin (General Purpose Admin, COFs, HQs), Training Facilities, CDCs, Youth Centers).

PRIORITY FY 08	INSTALLATION / FEWR NO.	BLDG. NO.	EST. LINEAR FT.	EST. INSTALLATION (1 <sup>ST</sup> yr) COST	EST. COST SUBSEQUENT YEARS
1	<b>SB-RZ000997J</b>	<b>580</b>	1200		3,200
2	<b>WA-RZ000997J</b>	<b>106</b>	480		1,280
3	WA-RZ000997J	203	636		1,700
4	FS-RZ000997J	500			2,700
5	<b>FS-RZ000997J</b>	<b>100</b>	630		1,680
6	<b>FS-RZ000997J</b>	<b>101</b>	830		2,220
7	<b>FS-RZ000997J</b>	<b>102</b>	464		1,240
8	<b>FS-RZ000997J</b>	<b>104</b>	400		1,070
9	<b>FS-RZ000997J</b>	<b>112</b>	465		1,240
10	<b>FS-RZ000997J</b>	<b>117</b>	430		1,150
11	<b>FS-RZ000997J</b>	<b>118</b>	540		1,440
12	<b>FS-RZ000997J</b>	<b>122</b>	430		1,150
13	<b>FS-RZ000997J</b>	<b>128</b>	460		1,230
14	<b>FS-RZ000997J</b>	<b>115</b>	490		1,310
15	<b>FS-RZ000997J</b>	<b>116</b>	280		750
16	<b>FS-RZ000948J</b>	<b>123</b>	510		1,360
17	<b>FS-RZ000948J</b>	<b>127</b>	225		600
18	<b>FS-RZ000948J</b>	<b>121</b>	200		530
<u>Sub-total</u>					<b>25,850</b>
19	SB-RZ000987J	699A	300	2,400	(1,500)
20	<b>SB-RB000356J</b>	<b>647</b>	450	3,600	(2,700)
21	<b>WA-RZ001676J</b>	<b>600</b>	1220	9,760	(6,100)
22	<b>SB-RZ001596J</b>	<b>500</b>	500	4,000	(2,500)
23	SB-RZ001606J	560	1042	8,340	(5,210)
24	SB-RZ001636J	582	630	5,040	(3,150)
25	<b>SB-RZ001586J</b>	<b>6056</b>	332	2,660	(1,660)
26	SB-RZ001576J	583	586	4,690	(2,930)
27	FS-RZ001696J	711	541	4,330	(3,300)
28	<b>SB-RA000098J</b>	<b>2026</b>		10,000(fumigation)	
29	SB-MM073128J	582		18,500(fumigation)	
<u>Sub-total</u>				<b>73,320</b>	
<b><u>TOTAL</u></b>					<b>\$99,170</b>

PRIORITY FY 09	INSTALLATION / FEWR NO.	BLDG. NO.	EST. LINEAR FT.	EST. INSTALLATION (1 <sup>ST</sup> yr) COST	EST. COST SUBSEQUENT YEARS
1	<b>SB-RZ001058J</b>	<b>580</b>	1200		3,600
2	<b>WA-RZ001058J</b>	<b>106</b>	480		1,440
3	WA-RZ001058J	203	636		1,910
4	FS-RZ001058J	500	660		1,980
5	<b>FS-RZ001058J</b>	<b>100</b>	630		1,890
6	<b>FS-RZ001058J</b>	<b>101</b>	830		2,490
7	<b>FS-RZ001058J</b>	<b>102</b>	464		1,390
8	<b>FS-RZ001058J</b>	<b>104</b>	400		1,200
9	<b>FS-RZ001058J</b>	<b>112</b>	465		1,400
10	<b>FS-RZ001058J</b>	<b>117</b>	430		1,290
11	<b>FS-RZ001058J</b>	<b>118</b>	540		1,620
12	<b>FS-RZ001058J</b>	<b>122</b>	430		1,290
13	<b>FS-RZ001058J</b>	<b>128</b>	460		1,380
14	<b>FS-RZ001058J</b>	<b>115</b>	490		1,470
15	<b>FS-RZ001058J</b>	<b>116</b>	280		840
16	<b>FS-RZ001058J</b>	<b>123</b>	510		1,530
17	<b>FS-RZ001058J</b>	<b>127</b>	225		670
18	<b>FS-RZ001058J</b>	<b>121</b>	200		600
19	SB-RZ001058J	699A	300		900
20	<b>SB-RZ001058J</b>	<b>647</b>	450		1,350
21	<b>WA-RZ001058J</b>	<b>600</b>	1220		3,660
22	<b>SB-RZ001058J</b>	<b>500</b>	500		1,500
23	SB-RZ001058J	560	1042		3,130
24	SB-RZ001058J	582	630		1,890
25	<b>SB-RZ001058J</b>	<b>6056</b>	332		1,000
26	SB-RZ001058J	583	586		1,760
27	FS-RZ001058J	711	541		1,620
28	<b>FS-RZ001058J</b>	<b>330</b>	1070		3,210
<u>Sub-total</u>					<b>48,010</b>
29	FD-RZ001128J	32	1060	8,480	(3180)
30	<b>WA-RZ001128J</b>	<b>224</b>	380	3,040	(1140)
31	<b>SB-RZ001128J</b>	<b>494</b>	180	1,440	(540)
32	<b>TAMC-RZ001128J</b>	<b>228</b>	980	7,840	(2940)
33	<b>TAMC-RZ001128J</b>	<b>222</b>	690	5,520	(2070)
34	<b>TAMC-RZ001128J</b>	<b>220</b>	500	4,000	(1500)
35	<b>FS-RZ001128J</b>	<b>520</b>	980	7,840	(2940)
36	<b>SB-RZ001128J</b>	<b>156</b>	870	6,960	(2610)
37	<b>FS-RZ001128J</b>	<b>900</b>	470	3,760	(1410)
38	<b>SB-RZ001128J</b>	<b>692</b>	800	6,400	(2400)
<u>Sub-total</u>				<b>55,280</b>	
<b><u>TOTAL</u></b>					<b><u>\$103,290</u></b>

PRIORITY FY 10	INSTALLATION / FEWR NO.	BLDG. NO.	EST. LINEAR FT.	EST. INSTALLATION (1 <sup>ST</sup> yr) COST	EST. COST SUBSEQUENT YEARS
1	<b>SB</b>	<b>580</b>	1200		3,600
2	<b>WA</b>	<b>106</b>	480		1,440
3	WA	203	636		1,910
4	FS	500	660		1,980
5	<b>FS</b>	<b>100</b>	630		1,890
6	<b>FS</b>	<b>101</b>	830		2,490
7	<b>FS</b>	<b>102</b>	464		1,390
8	<b>FS</b>	<b>104</b>	400		1,200
9	<b>FS</b>	<b>112</b>	465		1,400
10	<b>FS</b>	<b>117</b>	430		1,290
11	<b>FS</b>	<b>118</b>	540		1,620
12	<b>FS</b>	<b>122</b>	430		1,290
13	<b>FS</b>	<b>128</b>	460		1,380
14	<b>FS</b>	<b>115</b>	490		1,470
15	<b>FS</b>	<b>116</b>	280		840
16	<b>FS</b>	<b>123</b>	510		1,530
17	<b>FS</b>	<b>127</b>	225		670
18	<b>FS</b>	<b>121</b>	200		600
19	SB	699A	300		900
20	<b>SB</b>	<b>647</b>	450		1,350
21	<b>WA</b>	<b>600</b>	1220		3,660
22	<b>SB</b>	<b>500</b>	500		1,500
23	SB	560	1042		3,130
24	SB	582	630		1,890
25	<b>SB</b>	<b>6056</b>	332		1,000
26	SB	583	586		1,760
27	FS	711	541		1,620
28	<b>FS</b>	<b>330</b>	1070		3,210
29	FD	32	1060		3,180
30	<b>WA</b>	<b>224</b>	380		1,140
31	<b>SB</b>	<b>494</b>	180		540
32	<b>TAMC</b>	<b>228</b>	980		2,940
33	<b>TAMC</b>	<b>222</b>	690		2,070
34	<b>TAMC</b>	<b>220</b>	500		1,500
35	<b>FS</b>	<b>520</b>	980		2,940
36	<b>SB</b>	<b>156</b>	870		2,610
37	<b>FS</b>	<b>900</b>	470		1,410
38	<b>SB</b>	<b>692</b>	800		2400
<u>Sub-total</u>					<b>68,740</b>
39	FS	341	520	4,160	(1560)
40	FS	537	360	2,880	(1080)

41	FS	347	780	6,240	(2340)
42	SB	556	1080	8,640	(3240)
43	SB	555	930	7,440	(2790)
<u>Sub-total</u>				<b>29,360</b>	
<b><u>TOTAL</u></b>					<b><u>\$98,100</u></b>
PRIORITY FY 11	INSTALLATION / FEWR NO.	BLDG. NO.	EST. LINEAR FT.	EST. INSTALLATION (1 <sup>ST</sup> yr) COST	EST. COST SUBSEQUENT YEARS
1	<b>SB</b>	<b>580</b>	1200		3,600
2	<b>WA</b>	<b>106</b>	480		1,440
3	WA	203	636		1,910
4	FS	500	660		1,980
5	<b>FS</b>	<b>100</b>	630		1,890
6	<b>FS</b>	<b>101</b>	830		2,490
7	<b>FS</b>	<b>102</b>	464		1,390
8	<b>FS</b>	<b>104</b>	400		1,200
9	<b>FS</b>	<b>112</b>	465		1,400
10	<b>FS</b>	<b>117</b>	430		1,290
11	<b>FS</b>	<b>118</b>	540		1,620
12	<b>FS</b>	<b>122</b>	430		1,290
13	<b>FS</b>	<b>128</b>	460		1,380
14	<b>FS</b>	<b>115</b>	490		1,470
15	<b>FS</b>	<b>116</b>	280		840
16	<b>FS</b>	<b>123</b>	510		1,530
17	<b>FS</b>	<b>127</b>	225		670
18	<b>FS</b>	<b>121</b>	200		600
19	SB	699A	300		900
20	<b>SB</b>	<b>647</b>	450		1,350
21	<b>WA</b>	<b>600</b>	1220		3,660
22	<b>SB</b>	<b>500</b>	500		1,500
23	SB	560	1042		3,130
24	SB	582	630		1,890
25	<b>SB</b>	<b>6056</b>	332		1,000
26	SB	583	586		1,760
27	FS	711	541		1,620
28	<b>FS</b>	<b>330</b>	1070		3,210
29	FD	32	1060		3,180
30	<b>WA</b>	<b>224</b>	380		1,140
31	<b>SB</b>	<b>494</b>	180		540
32	<b>TAMC</b>	<b>228</b>	980		2,940
33	<b>TAMC</b>	<b>222</b>	690		2,070
34	<b>TAMC</b>	<b>220</b>	500		1,500
35	<b>FS</b>	<b>520</b>	980		2,940
36	<b>SB</b>	<b>156</b>	870		2,610
37	<b>FS</b>	<b>900</b>	470		1,410

38	<b>SB</b>	<b>692</b>	800		2400
39	FS	341	520		1,560
40	FS	537	360		1,080
41	FS	347	780		2,340
42	SB	556	1080		3,240
43	SB	555	930		2,790
<u>Sub-total</u>					<b>79,750</b>
44	FS	1507	3180	25,440	(9540)
<u>Sub-total</u>				<b>25,440</b>	
<b><u>TOTAL</u></b>					<b><u>\$105,190</u></b>
<b>PRIORITY</b>	<b>INSTALLATION /</b>	<b>BLDG.</b>	<b>EST. LINEAR FT.</b>	<b>EST.</b>	<b>EST. COST</b>
<b>FY 12</b>	<b>FEWR NO.</b>	<b>NO.</b>		<b>INSTALLATION</b>	<b>SUBSEQUENT</b>
				<b>(1<sup>ST</sup> yr) COST</b>	<b>YEARS</b>
1	<b>SB</b>	<b>580</b>	1200		3,600
2	<b>WA</b>	<b>106</b>	480		1,440
3	WA	203	636		1,910
4	FS	500	660		1,980
5	<b>FS</b>	<b>100</b>	630		1,890
6	<b>FS</b>	<b>101</b>	830		2,490
7	<b>FS</b>	<b>102</b>	464		1,390
8	<b>FS</b>	<b>104</b>	400		1,200
9	<b>FS</b>	<b>112</b>	465		1,400
10	<b>FS</b>	<b>117</b>	430		1,290
11	<b>FS</b>	<b>118</b>	540		1,620
12	<b>FS</b>	<b>122</b>	430		1,290
13	<b>FS</b>	<b>128</b>	460		1,380
14	<b>FS</b>	<b>115</b>	490		1,470
15	<b>FS</b>	<b>116</b>	280		840
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21	<b>WA</b>	<b>600</b>	1220		3,660
22	<b>SB</b>	<b>500</b>	500		1,500
23	SB	560	1042		3,130
24	SB	582	630		1,890
25	<b>SB</b>	<b>6056</b>	332		1,000
26	SB	583	586		1,760
27	FS	711	541		1,620
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29	FD	32	1060		3,180
30	<b>WA</b>	<b>224</b>	380		1,140
31	<b>SB</b>	<b>494</b>	180		540
32	<b>TAMC</b>	<b>228</b>	980		2,940
33	<b>TAMC</b>	<b>222</b>	690		2,070

34	<b>TAMC</b>	<b>220</b>	500		1,500
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38	<b>SB</b>	<b>692</b>	800		2400
39	FS	341	520		1,560
40	FS	537	360		1,080
41	FS	347	780		2,340
42	SB	556	1080		3,240
43	SB	555	930		2,790
44	FS	1507	3180		9,540
<u>Sub-total</u>					<b>89,290</b>
45	SB	645	390	3,100	(1170)
46	AMR	1790	600	4,800	(1800)
47	FD	T-111	300	2,400	(900)
<u>Sub-total</u>				<b>10,300</b>	
<b><u>TOTAL</u></b>					<b><u>\$99,590</u></b>

APPENDIX G. BITING MOSQUITO SPECIES FOUND IN HAWAII

## Biting Mosquito Species Found In Hawaii

### *Aedes aegypti* (Yellow Fever Mosquito)

The yellow fever mosquito is a small dark species that can be recognized by the lyre-shaped silver-white lines on the thorax and the white bands on the tarsal segments. Although previously well distributed in the State of Hawaii, it has apparently disappeared from the islands of Oahu, Kauai, and Maui. The adults prefer the blood of man to that of other animals, and bites principally during the morning and late afternoon. This mosquito is semi-domesticated, breeding almost exclusively in artificial containers in and around human habitations. Eggs are able to withstand drying for several months and hatch quickly when in contact with water. The larvae can complete their development in 6 to 10 days under favorable conditions. This species has a short flight range, and usually will not travel further than 100 yards. It is also very susceptible to cold.

This mosquito is the vector of urban yellow fever, dengue and west Nile virus.

### *Aedes albopictus* (Forest Day Mosquito)

The Forest Day Mosquito is primarily a woodland species that has adapted to the urban environment. It breeds in tree-holes, leaf axils, rock holes, and other natural as well as manmade containers that hold water. The mosquito has a short flight range, usually not traveling further than 100 yards.

This species is a vector of dengue and west Nile virus.

### *Aedes nocturnes* (Night Biting Mosquito)

This mosquito occasionally becomes abundant in grassy lowland areas subject to flooding. However, due to its long flight range (greater than 5 miles) it may become a pest some distance away from its breeding site. As its common name implies, feeding is done primarily at night.

The Night Biting Mosquito is suspected as a potential vector of encephalitis.

### *Culex pipiens quinquefasciatus* (Southern House Mosquito)

This mosquito is a troublesome domesticated species that commonly infests houses and bites at night. It is said to display a preference for avian blood. The larvae are found in water in rain barrels, tubs, catch basins, cesspools, ditches, ground pools, and other similar habitats. Heavy production is often found in water with high organic content. In warm weather, eggs hatch within a day or two of laying. Eight to ten days are required for completion of the larval and pupal stages. Although these mosquitoes generally migrate only short distances, the effective flight range of this mosquito is greater than one mile.

This species is an important vector of the filarial nematode parasite, *Wuchereria bancrofti*, as well as the St. Louis encephalitis virus. The Western equine encephalitis virus and west Nile virus has also been isolated from this mosquito. It is also a known vector of the parasites causing bird malaria.

*Wyeomyia mitchellii* (Bromeliad Mosquito)

This is the latest accidental introduction of a immigrant mosquito species to Hawaii. The larvae of this mosquito are found in water collections at the bases of the leaves of bromeliads. They also occur in tree-holes, bamboo stumps, and the leaf axils of aroids such as dry land taro.

W. mitchellii is not a known vector of any serious human diseases.

APPENDIX H. GOLF COURSE PEST MANAGEMENT PLAN

## II. Pest Management Program

The USAG-Hi Golf Pest Management Program is a guide to insure that handlers follow procedures consistent with the label use restrictions established by the EPA and manufacturers, with the highest concern given to preserving the environment.

It is an integrated pest management program (IPM) for controlling weeds, diseases and insects based on surveying a need and using the least toxic product for adequate control. Cognizance of DoD mandates to reduce pesticide use (Ai/Ac) is one of the guiding principles. Golf has elected to use non restricted use pesticides, and selects products which pose the least amount of hazard to the applicator, golfers and the environment.

The following are general procedures and products used on Army golf courses in the USAG-Hi.

### A. Pest surveying

1. Surveys are conducted to monitor weed pressure. Surveys should identify where weed pressures are moderate to heavy.
2. Seasonal surveys are done to check for disease pressure on green surfaces. If a disease is identified, an appropriate control measure is selected.
3. Surveying is also done when insect damage is expected. With significant damage, the insect is identified and an appropriate control measure is selected.

### B. Pest control measures

1. Weed control-cultural or mechanical control measures are the first option in selection of a control measure. This may include mulching, or hand weeding. When chemical control is necessary, spot or broadcast applications are generally made to specific areas.
2. Generally spot treatments are done year around, weather permitting; to control escapes and keep the total weed seed population under control.
3. Twice a year, if irrigation is available, pre emergent herbicide to control goosegrass is applied.
  - a. Goosegrass/crabgrass/Hilo grass
    1. a combination of MSMA (40oz/A) and metribuzin (2.5 oz/A) not to exceed 1.3 #/Ac/yr, is made in 2 applications 7-10 days apart. Usually 2 broadcast applications in a year on fairway and rough areas that required the broadcast application. are sufficient.
    2. An alternative is to use an MSMA (40oz/Ac) application followed by an application of MSMA (30oz/Ac) in combination w/revolver (20 oz/Ac) 7-10 days later.
    3. Trimec plus in place of MSMA can be selected if broadleaf weeds are also present.
    4. Ronstar at 1 to 2#/Ac, for pre-emergent control, is the herbicide of choice for goosegrass control. This product is used in a fertilizer/herbicide combination.
  - b. Nutsedge/kyllinga
    1. MSMA/Image at 40 (oz/Ac) / 32 (oz/Ac)
    2. Trimec Plus/Image at 64 (oz/Ac) / 32 (oz/Ac)
    3. Manage at 1.3 (oz/Ac). All control methods are acceptable for controlling sedges, with Manage being the primary choice because of the total amount of herbicide used per acre.
  - c. Star grass, smutgrass, lovegrass- Spot or wick applications of Roundup (1.5%) or Finale (2oz/G) are made directly to weed surface for selective control.
  - d. Poa annua, overseeded poa trivialis-Revolver at 17.5(oz/Ac) post emergent on green surfaces.

4. Fungus Control-whenever possible, cultural practices such as reducing watering or keeping the wetting window to less than 10 hours by watering later in the night(includes estimated dew time), reducing N fertilizer applications, raising the cutting height mechanical practices such as verticutting and soil aeration are used to minimize disease pressure before chemical methods are employed. When environmental conditions overwhelm non chemical practices an appropriate fungicide is selected.
  - a. Helminthosporium/Rizoctonia-the following 3 treatments are alternated in sequence for preventive maintenance control and to reduce chances of developing a specific disease resistance
    1. 26 GT (Iprodione at 4 to 8 oz/1000sf) at 10-14 day intervals
    2. Daconil Ultrex (chlorothalonil at 4lb/Ac) 7-10 day intervals
    3. Fore (mancozeb 4 oz/1000sf ) at 7 day intervals
  - b. Pithium-Subdue Maxx (1 qt /ac) plus Fore (10 lbs/Ac). A maximum of 2 applications may be made per year.
  - c. Fairy Rings-
    1. Insignia (pyraclostrobin at 40 oz/Ac)
    2. Prrostar (flutolanil at 4.5oz/1000sf)
5. Insect Control
  - a. Army worms/cutworms-Sevimol at 2 to 4 quarts/Ac

#### C. Record Keeping

1. Monthly (DD form 1532-1)
  - a. Daily applications are recorded and reflect all applications made for 1 month
  - b. Records are compiled for a 3 month period.
2. Quarterly record (1532) is submitted to the installation pest management coordinator.
3. Annual record is summary of 4 quarters and reported at end of fiscal year.
4. Inventory records-recorded quantities of stored pesticide are kept.
5. Total fertilizer use is reported to the DPW environmental storm water permit coordinator annually.

#### D. Training requirements

1. DoD pesticide certification-required for applicators and re-certification required every 3 years.
2. Respirator fit training-required annually to ensure proper use and condition.

APPENDIX I. AERIAL VALIDATION PLAN

## AERIAL VALIDATION PLAN FOR HERBICIDE APPLICATIONS FOR PRESCRIBED BURNS FOR FY 08

**Activity Preparing Request:** Installation Fire & Safety Office, U.S. Army Garrison Hawaii (USAG-HI), Department of the Army.

**Preparation Date:** 2 July 2007.

**Preparer:** Steve Lai, Range Planner, DPTM, U.S. Army Garrison, Hawaii.

**Purpose:** Execution of this herbicide application plan is necessary to augment the prescribed burn plan in support of training requirements. Execution of this prescribed burn is required to reduce fuel hazards subject to potential wildfires, and enhance ground visibility essential to conduct UXO surface clearance. Prescribed Burn Plans will be written for each proposed action and an Aerial Validation Plan specific to that proposed burn will be included as part of the Burn Plan.

The objective of this plan is to dry vegetation to the degree that a complete burn will result, allowing the prescribed fire objectives to be met.

If herbicide application is not done prior to the burn, an incomplete burn may result, and the objectives of the burn plan may not be met.

Because the proposed burn area is within an impact area, herbicide application can only be done by aerial application.

**Pests Identified:** The primary targets are Guinea Grass, *Panicum maximum*, 4-6 feet tall, Haole Koa, *Leucaena leucocephala*, 4-6 feet tall, Molasses Grass, 2.5 feet tall, and Christmas Berry, *Schinus*, 8-10 feet tall.

**Surveillance:** Areas requiring herbicide are not accessible by ground application due to potential of life threat to personnel from UXO in the designated burn areas. Pre- and post- surveillance procedures are predicated on known impact areas where access is prohibited.

**Target Area Description:** The area proposed for treatment is located in the designated impact area of the Schofield Barracks Military Reservation (SBMR), West Range, north of Kolekole Road and within the Schofield Firebreak Road (see map).

A total of approximately 1100 acres may be treated in the designated impact area of the Schofield Barracks (West Range) and within the Schofield firebreak road network.

**Proximity to Inhabited Areas:** Military Family Housing units located approximately 750-meters east of treatment area.

**Affected Natural Resources:** There are no endangered species, wildlife communities, agriculture, livestock areas, etc., in the treatment area. Higher elevation forests immediately up-slope and to the west of the target area contains several endangered plant species, and the elepaio (an endangered bird) and portions of its critical habitat. Other forested areas further to the south include parts of The Nature Conservancy of Hawaii's Honouliuli Preserve and also contain endangered plants and the elepaio. Drift to these surrounding areas will be controlled by adding a drift retardant (Airex DC at 0.75%) to the spray,

and by applying only when wind speeds are below threshold limits, and by limiting the height at which the application is done.

**Affected Area Water Resources:** There are no areas where surface water is present. Drainage gullies are present. If heavy rains occur prior to application, it will be postponed until there is complete drainage.

**Drift Affecting Natural Resources:** Application will only occur when wind speeds are between 2-10 mph and no precipitation. According to the label for Roundup Pro, drift potential is lowest when wind speeds are between 2-10 mph. The label also states that application should be avoided below 2 mph due to variable winds and high inversion potential. The Army will cease all application operations if conditions exceed the above parameters. Also, the Army will cease all application operations if it is observed that there is risk of drift affecting elepaio Critical Habitat or areas occupied by threatened and endangered species (see attached map).

**Pesticide Information:** The herbicide to be used is Roundup Pro (41% glyphosate), NSN: 6840-01-108-9578, EPA Registration Number: 524-475.

The material is to be applied at a rate of 3 quarts/acre (3% solution per acre). Total amount of product for 1100 acres is 825 gallons of Roundup Pro concentrate.

The attached MSDS describes toxicity, stability and degradation characteristics.

The main restrictions on the use of the product are to avoid areas where surface water is present and not to mix store or apply the product or spray solutions in galvanized steel or unlined steel (except stainless steel) containers or spray tanks.

**Application Information:** Application of the material will be done by contract under Pacific Helicopter Services, LLC FAA Operating Certificate No. DBZG128D. The applicator will be Mr. Howard Esterbrook, FAA 576940421 COMM, Pesticide Applicator Certification #C40314, expiration May 3, 2009, Category 11.

Application will be done utilizing a Jet Ranger helicopter at airspeeds of approximately 70 mph. Application will be done at a height not greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. The spray swath will be approximately 40 feet.

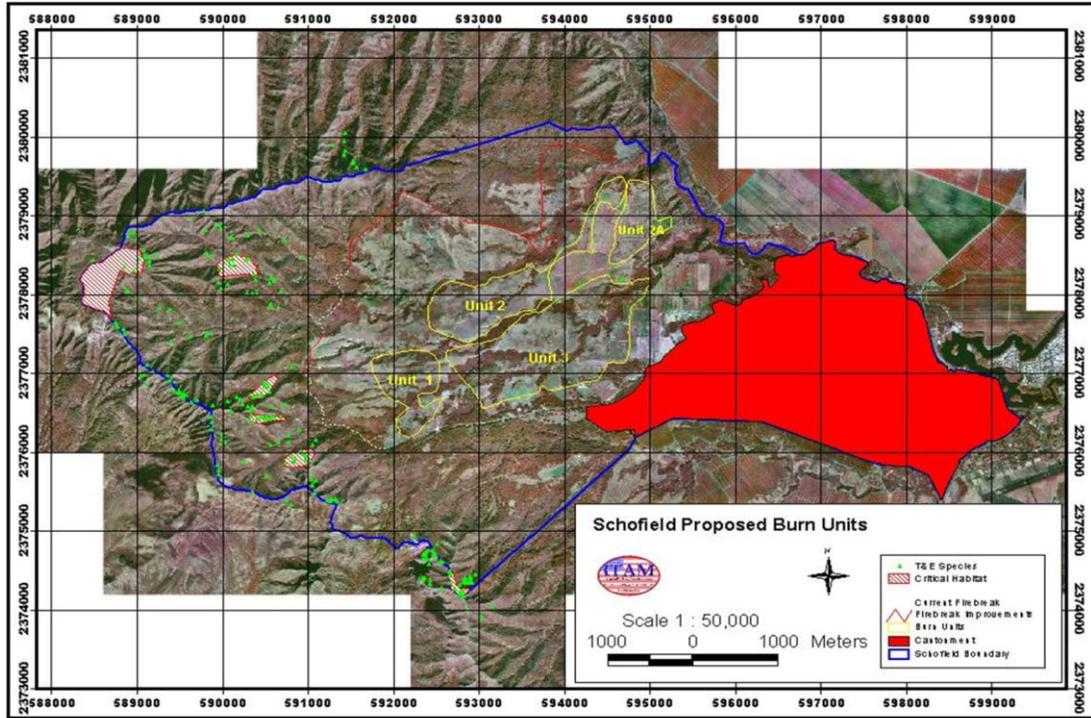
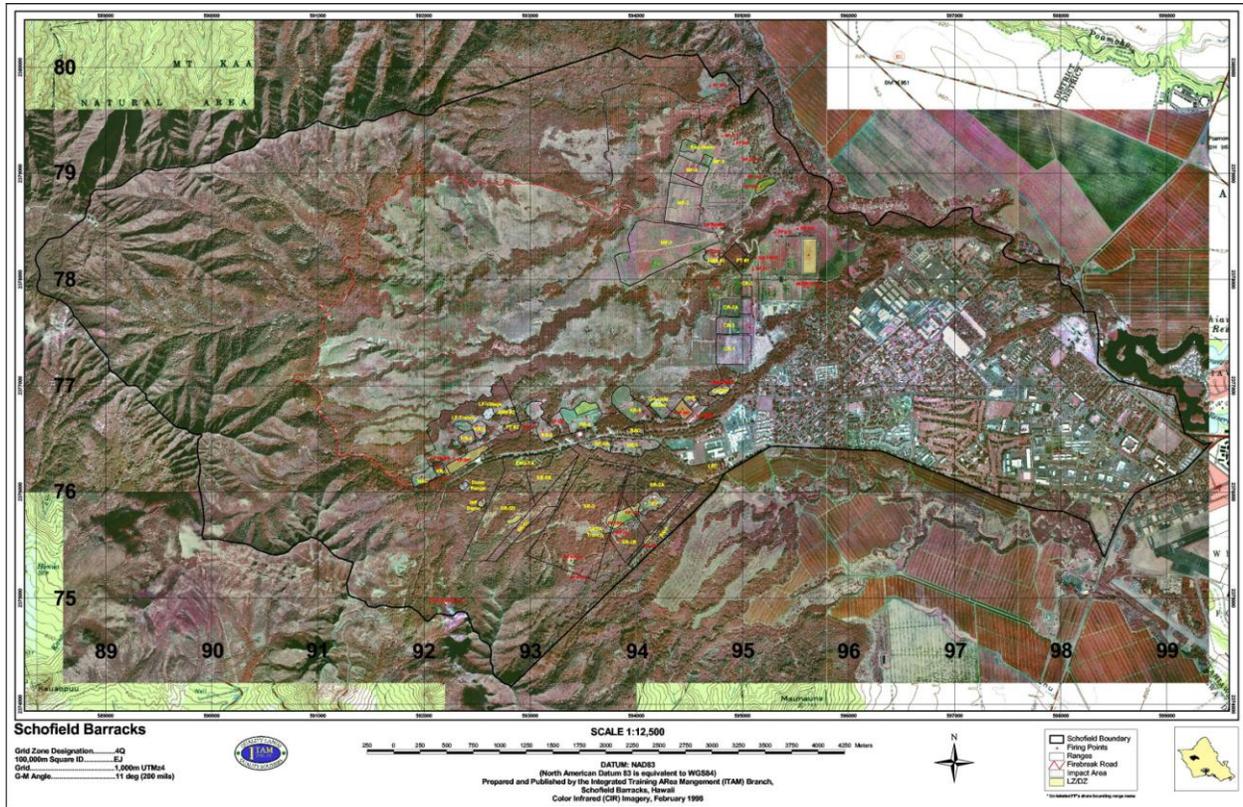
Two sprays are proposed for FY 08. Timing of the burns will be dependent on rate of plant growth and weather conditions.

**Alternative Control Methods:** As an alternative, the range may be burned without the use of an herbicide; however, as discussed previously, an incomplete burn may result and the objectives of the burn plan may not be met.

**Sensitive Areas:** There are no protected species habitats, crop lands, lakes, rivers, running streams, etc., in the treatment area.

**Agency Coordination:** NEPA documentation and consultation with USFWS will be done prior to treatment.

**Environmental Documentation:** This Aerial Validation Plan will be included in the Integrated Pest Management Plan for USAG-HI. The Record of Environmental Consideration submitted for each Prescribed Burn will include an Aerial Validation Plan and a Prescribed Burn Plan specific for that event.



APPENDIX J. WORK/FINANCIAL PLAN FOR BIRD STRIKE HAZARD

07-73-15-0219-IA  
 758-7315-851 (WAAF)  
 758-7315-823 (PTA)

**WORK/FINANCIAL PLAN**  
**between**  
**UNITED STATES ARMY GARRISON HAWAII**  
**DIRECTORATE OF PUBLIC WORKS**  
**and**  
**U.S. DEPARTMENT OF AGRICULTURE**  
**ANIMAL AND PLANT HEALTH INSPECTION SERVICE**  
**WILDLIFE SERVICES**

<b>COOPERATOR ADDRESS</b>	Directorate of Public Works, USAG-HI ATTN: IMPA-HI-PWE Schofield Barracks, HI 96857-5013
<b>COOPERATIVE CONTACT</b>	Alan K. L. Goo, Director of Public Works Phone: (808) 656-1289 ext. 2201 Fax: (808) 656-6471 Email: alan.goo@us.army.mil
<b>POINT OF CONTACT</b>	Robin Yamamoto, Entomologist Phone: (808) 656-2878 ext. 1053 Fax: (808) 656-1039 Mobile: (808) 864-1010 Email: robin.yamamoto@us.army.mil
<b>SITE CONTACT (Wheeler Army Airfield)</b>	James Ware, Wheeler Army Airfield Commander Phone: (808) 656-2656 Fax: (808) 656-2057 Email: james.e.ware@us.army.mil
<b>SITE CONTACT (Pohakuloa Training Area)</b>	Marlene Amantiad, Contract Performance Representative Phone: (808) 969-2496 or (808) 523-2455 (Honolulu Direct) Fax: (808) 969-9024 or (808) 523-2007 (Honolulu Direct) Email: Marlene.A.Amantiad@us.army.mil
<b>AGENCY LOCATOR NUMBER</b>	00-00-5570
<b>COOPERATIVE AGREEMENT NUMBER</b>	07-73-15-0219-IA
<b>ACCOUNT NUMBER</b>	758-7315-851 (Wheeler Army Airfield) 758-7315-823 (Pohakuloa Training Area)
<b>LOCATION</b>	Wheeler Army Airfield, Oahu, Hawaii Pohakuloa Training Area, Island of Hawaii, Hawaii
<b>AGREEMENT PERIOD</b>	October 1, 2006 to September 30, 2007

Pursuant to Cooperative Service Agreement No. 07-73-15-0219-IA between the United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services (APHIS-WS) and the United States Army Garrison Hawaii, Directorate of Public Works (USAG-DPW), this Work/Financial Plan defines the objectives, plan of action, and budget for the Wildlife Services program to be conducted during FY 2007.

## **I. OBJECTIVES/GOALS**

- a) To provide wildlife damage management (WDM) operations at Wheeler Army Airfield (WAAF) to effectively reduce the threat of wildlife strikes to military aircraft.
- b) To control nuisance wildlife (introduced birds, feral cats, feral dogs, feral pigs and rodents) problems in and around buildings and facilities at Pohakuloa Training Area (PTA) which pose human health and safety threats.

## **II. PLAN OF ACTION**

### **a. WAAF**

APHIS-WS will provide personnel to conduct WDM operations on a part-time basis at least 3 days per week. Control operations will include an active Bird/Wildlife Air Strike Hazard (BASH) program. Most of the control operations will be conducted during daylight hours, however occasional night operations will be conducted to focus on nocturnal avian and mammalian species. Control methods will include, but are not limited to, shooting, trapping, and hazing. Wildlife censuses will be conducted at least once a month to identify and monitor wildlife populations on the airfield. APHIS-WS will also compile all pertinent bird/wildlife strike records and prepare the necessary U.S. Fish and Wildlife Services Migratory Bird Depredation Permit applications and reports for the WAAF Commander. All control operations will be coordinated with the WAAF Base Operations staff.

### **b. PTA**

APHIS-WS will provide personnel to conduct WDM operations to control nuisance wildlife in and around buildings and facilities. Introduced birds will be controlled using pellet guns. Nests will be removed and repellants applied where appropriate. Nuisance feral mammals will be trapped and relocated or humanely euthanized and appropriately disposed of off site. APHIS-WS will consult with the PTA Contract Performance Representative or her designee(s) before employing alternate control methods.

APHIS-WS personnel will also conduct searches/surveys for the presence of mice in and around structures/buildings, offices, food/supply storages and in surrounding non-crop areas. Detection surveys will be followed up by non-toxic tracking stations to determine the relative size of the mouse population. Various control methods will be implemented depending on the severity and locality of the mice infestation. Methods will include toxicants, snap kill traps and the use of glue boards.

## **III. REPORTS**

APHIS-WS will be responsible for the preparation of periodic reports as specified in the Cooperative Service Agreement.

## **IV. STIPULATIONS AND RESTRICTIONS**

- a. All operations shall have the joint concurrence of APHIS-WS and the USAG-DPW and shall be under the direct supervision of APHIS-WS. APHIS-WS will conduct the program in accordance with its established operating policies and all applicable state and federal laws and regulations.

- b. Control on Public Lands: An Agreement for Control of Animal Damage on Non-Private Property (ADC Form 12C) or an appropriate NEPA document will be executed between APHIS-WS and the public land administrator(s)/manager(s) before any APHIS-WS work is conducted.
- c. The performance of WDM actions by APHIS-WS under this agreement is contingent upon a determination by APHIS-WS that such actions are in compliance with the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and any other applicable environmental statutes. APHIS-WS will not make a final decision to conduct the requested WDM actions until it has made the determination of such compliance.
- d. The USAG-DPW agrees that it is responsible for compliance with the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and other environmental compliance laws for the specific projects and actions it requests APHIS-WS to perform for it under this agreement.
- e. APHIS-WS will use only APHIS-WS employees and APHIS Volunteer Program participants. All APHIS-WS employees and APHIS volunteers have successfully met APHIS firearm safety standards and have received official National Rifle Association certifications. Certificates are available upon request.
- f. In accordance with Federal Governing Regulations (OPM Reg. 4610), federal employees, other than those on intermittent (on-call) status, are entitled to and accrue annual and sick leave on a bi-weekly basis. Therefore, there may be times when coverage on this project may be minimal to none as employees elect to use accrued leave.
- g. The WAAF program will be supervised by Mark Ono, HI District Supervisor (808-861-8575 ext. 21), and monitored by Mike E. Pitzler, HI/GU/Pacific Islands State Director (808-861-8575 ext.18).
- h. The PTA program will be supervised by Shayne Veriato, HI Area Supervisor (808-933-6955), and monitored by Mike E. Pitzler, HI/GU/Pacific Islands State Director (808-861-8575 ext.18).

**V. COST ESTIMATE FOR SERVICES**

The cooperator will reimburse APHIS-WS for expenses incurred. Such costs include, but are not limited to, salary/benefits, vehicle use, supplies/equipment and administrative costs. An estimated itemization of expenses is listed below, however funds may be distributed between itemized categories at the discretion of APHIS-WS if required. Any equipment and supplies purchased under the terms of this agreement will remain the property of APHIS-WS.

	<b>WAAF</b>	<b>PTA</b>
Salary/Benefits	\$24,160	\$10,419
Vehicle Use	\$5,040	\$2,150
Equipment/Supplies	\$5,000	\$3,600
APHIS Administrative Overhead	\$5,521	\$2,610
<b>SUBTOTAL</b>	<b>\$39,721</b>	<b>\$18,779</b>

**GRAND TOTAL = \$58,500**

**NOTES:**

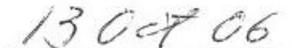
In accordance with the Debt Collection Improvement Act (DCIA) OF 1996, bills issued quarterly by APHIS-WS are due and payable within 30 days of receipt.

**VI. AUTHORIZATION**

DIRECTORATE OF PUBLIC WORKS, USAG-HI  
ATTN: APVG-GWV  
SCHOFIELD BARRACKS, HI 96857-5013



Director of Public Works

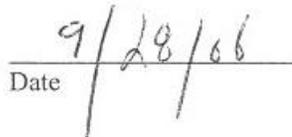


Date

UNITED STATES DEPARTMENT OF AGRICULTURE  
ANIMAL AND PLANT HEALTH INSPECTION SERVICE  
WILDLIFE SERVICES



State Director, HI/GU/Pacific Islands



Date



Director, Western Region



Date

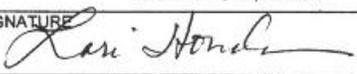


DIRECTORATE OF PUBLIC WORKS FACILITIES ENGINEERING WORK REQUEST							Printed On: 27-Nov-2006	
FEWR_New.rpt								
DOCUMENT	POST	BLDG	SUFFIX	SHORT DESCRIPTION	ROUTING CODE	PROCESS DESCRIPTION		
RZ001566J	SB	M		FY07 Bird/Animal Ctrl BASH	EM 024 70	ENTOMOLOGIST REVIEW		
REQUESTOR NAME	PHONE	POC NAME		POC ORGANIZATION	POC PHONE			
ROBIN YAMAMOTO	656-2878	ROBIN YAMAMOTO		DPW ENV	656-2878			
Requestor Email:	POC Email:							
ESTIMATED COST	APPROVAL	APPROVAL ACTION	PROCESSING DATES		WORK TO BE PERFORMED			
K - 0	0	A - Action	Creation Date: 06-Sep-2006		N - In-House Y - Contract			
L - 0	0	N - Permission Only	Approval Date: 06-Sep-2006		N - Self-Help N - Troops			
M - 61,000	61,000	N - Design Only	Last Modified: 31-Oct-2006		N - Attachments			
APPROVAL AUTHORITY				PROG	FY	PRIORITY		
CAMILLE HOWE				RS	7	6,996.00		
REMARKS								
WORKS DESCRIPTION / JUSTIFICATION								
To conduct bird/aircraft strike hazard control at WAAF to reduce or eliminate the presence of cattle egrets and other birdstrike threats, and to control nuisance birds and feral animals which present health, safety and maintenance problems at PTA and WAAF. Period - 01 Oct 06 to 30 Sep 07 (FY 07).								
Nuisance birds/animals may cause thousands of dollars in damage to aircraft and facilities and may cause air crashes resulting in injuries or deaths.								
ROUTING HISTORY								
ROUTING DATE	ROUTING CODE		ROUTING DESCRIPTION			USER ID		
06-Sep-2006 08:07 AM	BOD	001 01	REO PGM MGR			lee.humes		
06-Sep-2006 11:37 AM	BOD	001 01	REO PGM MGR			camille.howe		
06-Sep-2006 11:38 AM	EM	001 01	ENV FUNDING ACTIONS			camille.howe		
31-Oct-2006 09:54 AM	EM	024 70	ENTOMOLOGIST REVIEW			wendy.himalaya		
APPROVAL HISTORY								
DATE	K AMOUNT	L AMOUNT	M AMOUNT	A/D	DSN	PRM	UID	APPROVAL AUTHORITY
06-Sep-2006	0.00	0.00	61,000.00	A	N	N	camille.howe	CAMILLE HOWE
WORK REQUEST COMMENTS								
E-mail to Robin Yamamoto. CC: Somera, Crite & Humes. lee.humes 06-Sep-2006								
WORK ATTACHMENTS								
FILE NAME	ATTACHED BY	ATTACHED DATE	COMMENTS					

Printed By: ROBIN YAMAMOTO

1 of 1

5 PW 01-019

MILITARY INTERDEPARTMENTAL PURCHASE REQUEST						1. PAGE 1 OF 1 PAGES			
2. FSC		3. CONTROL SYMBOL NO.		4. DATE PREPARED		5. MIPR NUMBER		6. AMEND NO.	
				29 NOV 2006		MIPR7BO12MM301		BASIC	
7. TO: State Director United States Department of Agriculture APHIS-Wildlife Services 3375 Koapaka St., H-420 Honolulu, HI 96819					8. FROM: (Agency, name, telephone number of originator) Directorate of Resource Management ATTN: IMPC-HI-RMB, Stop 125 Schofield Barracks, HI 96857-5018 E. Hee, 656-4902, FAX: 656-3591				
9. ITEMS <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT INCLUDED IN THE INTERSERVICE SUPPLY SUPPORT PROGRAM AND REQUIRED INTERSERVICE SCREENING <input type="checkbox"/> HAS <input type="checkbox"/> HAS NOT BEEN ACCOMPLISHED.									
ITEM NO.	DESCRIPTION (FEDERAL STOCK NUMBER, NOMENCLATURE, SPECIFICATION AND/OR DRAWING NO., ETC.)				QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED TOTAL PRICE	
a	b				c	d	e	f	
	PROJECT I.D. Cooperative Agreement No.: 07-73-15-0219-IA, Bird Strike Hazard at WAAF & PTA.  Reference: FEWR, Work/Financial Plan and Cooperative Service Agreement from USDA, 07-73-15-0219-IA.  Purpose: Renew Bird Aircraft Strike Hazard operations at WAAF and PTA and to control nuisance feral animals which present health, safety and maintenance problems for the period 1 Oct 06 – 30 Sep 07. Funds breakdown as follows:  WAAF APC: CQFM \$39,721.00 (758-7315-851) PTA APC: CQFP \$18,779.00 (758-7315-823) TOTAL \$58,500.00  POC: DPW, R. Yamamoto, 656-2878 USDA – WS, Mark Ono, 861- 8575 DRM, E. Hee, 656-4902 FAX: (808)656-3591  <b>REQUEST 1 COPY OF ACCEPTANCE BE FAXED TO DRM, (BLOCK 8) &amp; ALL BILLINGS.</b>							\$58,500.00	
10. SEE ATTACHED PAGES FOR DELIVERY SCHEDULES, PRESERVATION AND PACKAGING INSTRUCTIONS, SHIPPING INSTRUCTIONS AND INSTRUCTIONS FOR DISTRIBUTION OF CONTRACTS AND RELATED DOCUMENTS.								11. GRAND TOTAL \$58,500.00	
12. TRANSPORTATION ALLOTMENT (USED IF FOB CONTRACTOR'S PLANT)					13. MAIL INVOICES TO (PAYMENT WILL BE MADE BY) DFAS PACIFIC OPLOC 477 ESSEX STREET PEARL HARBOR, HI 96860-5806 PAY OFFICE DODAAD				
14. FUNDS FOR PROCUREMENT ARE PROPERLY CHARGEABLE TO THE ALLOTMENTS SET FORTH BELOW, THE AVAILABLE BALANCES OF WHICH ARE SUFFICIENT TO COVER THE ESTIMATED TOTAL PRICE.									
ACRN	APPROPRIATION	LIMIT/SUBHEAD	SUPPLEMENTAL ACCOUNTING CLASSIFICATION				ACCTG STA DODAAD	AMOUNT	
	2172020	0000	0 B8 B8AE 13100000000 25GY 000000 MIPR7BO12MMM301 012175 CQFM2P \$39,721.00 CQFP2P \$18,779.00					\$58,500.00	
15. AUTHORIZING OFFICER (TYPE NAME AND TITLE) SHAR KAINA, Director of Resource Mgmt					16. SIGNATURE 			17. DATE NOV 29 2006	

IFSM/WORKS CMT

DPW MIPR FUNDING REQUEST

TO: State Director  
United States Department of Agriculture  
APHIS-Wildlife Services  
3375 Koapaka St., H-420  
Honolulu, HI 96819

FROM: DPW

**Block 7 (Description) Information:**

- a. **Project I.D.** Cooperative Agreement No.: 07-73-15-0219-IA, Bird Strike Hazard at WAAF & PTA.
- b. **References:** FEWR, Work/Financial Plan and Cooperative Service Agreement from USDA, 07-73-15-0219-IA.
- c. **Purpose.** Renew Bird Aircraft Strike Hazard operations at WAAF and PTA and to control nuisance feral animals which present health, safety and maintenance problems for the period 1 Oct 06 - 30 Sep 07.  
  
RZ001566J (M Funds)  
\$58,500
- d. **Point of Contact (POC).** USDA-WS - Mark Ono, 861-8575 / DPW - R. Yamamoto, 656-2878.
- e. **Funding Classification.** M
- f. **Approvals.** See attached.

DIRECTORATE OF PUBLIC WORKS

FIN PROG MGT \_\_\_\_\_

DIRECTOR APPROVAL \_\_\_\_\_

*[Signature]* 11/21/06

APPENDIX K. BROWN TREE SNAKE EMERGENCY RESPONSE PROTOCOL



United States  
Department of  
Agriculture

Animal and  
Plant Health  
Inspection  
Service

Wildlife Services

3375 Koapaka St.,  
Suite H420  
Honolulu, HI 96819  
Phone: (808) 861-8575/8576  
Fax : (808) 861-8570

October 23, 1998

*Robin*  
To: BTS ERP Principals

Enclosed is the current version of the Brown Tree Snake Emergency Response Protocol for Hawaii. This ERP was developed by the members of the Brown Tree Snake Technical Committee and produced by Wildlife Services and Tetra Tech. The ERP incorporates the overall emergency response of State of Hawaii agencies, USDA APHIS Wildlife Services and individual responses of the Army, Navy and Air Force. As a recipient of the ERP you have a direct responsibility to implement your portion of the ERP to prevent the Brown Tree Snake from becoming established in the Hawaiian Islands. Use the binder as an operational reference. Any revisions should be directed to Wildlife Services in Hawaii. If you have any questions please call me at 861-8576.

*Tim J. Ohashi*

Tim J. Ohashi  
ASD

Distribution:

Mr. Lance Bookless, Marine Corps Nat. Res. Spec.  
Dr. Fred Kraus, Hawaii Department of Land and Natural Resources Alien Species Coordinator  
Commander Jim May, J431-USCINCPAC  
Mr. Gary O'Donnell, Air Force Environmental Planner  
Mr. Tim Ohashi, Wildlife Services Assistant State Director  
Mr. James Murphy, Wildlife Services District Supervisor  
Mr. Darrell Robertson, Navy Reg. Environmental Coordinator  
Dr. Lyle Wong, Hawaii Department of Agriculture Chief Division of Plant Industry,  
Mr. Robin Yamamoto, Army Alien Species Coordinator



APHIS - Protecting American Agriculture



**Brown Tree Snake EMERGENCY RESPONSE PROTOCOL  
NARRATIVE TO FLOW CHART**

**ACRONYMS**

APHIS WS	Animal & Plant Health Inspection Service, Wildlife Services
BTS	Brown Tree Snake
DPW	Department of Public Works
DOD	Department of Defense
HDLNR DOFAW	Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife
HDOA	Hawaii Department of Agriculture
MP	Military Police
POC	Point of Contact
PQ	Plant Quarantine
SP	Security Police
USAG	United States Army Garrison

**1**  **SNAKE SIGHTING**

Public reports snake sighting.

**2**  **NOTIFY MP/SP/DPW/HDOA**

Snake Sighted on Military Lands:

- Public notifies Operator (military police, security police, public works).
- The Operator will provide instructions (see reverse side of the attached Snake Report Form) to the caller.
- The Operator will complete the Snake Report Form.
- The Operator will contact and fax the report to the appropriate service point of contact:

(Rev. 10/08/98)

*Mr. Robin Yamamoto, Army Alien Species Coordinator. 656-2878 ext. 1053, 656-1039 (fax)*

*Mr. Gary O'Donnell, Air Force Environmental Planner. 449-1584 ext. 110, 449-9723 (fax)*

*Mr. Darrell Robertson, Navy Reg. Environmental Coordinator. 471-0326, 474-2328 (fax)*

*Mr. Lance Bookless, Marine Corps Nat. Res. Spec. 257-6920 ext. 226, 257-2794 (fax)*

- The Operator will also fax the report to *HDOA, Plant Quarantine Branch, at 836-6380* and follow up with a phone call to **586-7378** within 15 minutes.
- If a BTS is suspected, the operator must notify supervisor IMMEDIATELY.

Snake Sighted on Non-Military Lands:

- Public notifies Operator at the HDOA PQ.
- The Operator will provide instructions (see reverse side of the attached Snake Report Form) to the caller.
- The Operator will complete the Snake Report Form.
- If the BTS is sighted on military lands, HDOA operator will contact and fax the report to the appropriate service point of contact (see above).
- If a BTS is suspected, the operator will contact the HDOA supervisor IMMEDIATELY.

### **3 INITIAL RESPONSE**

STATEMENT OF PROCEDURES (SOP)

Military:

- Army: See the attached USAG-HI Brown Tree Snake Response Protocol.
- Air Force - Hickam AFB: See the attached Snake Response Protocol at Hickam Air Force Base.

- Navy and Marine Corps: See the attached Navy Snake Response Protocol.

**HDOA:**

- If the snake is at the port or on military lands, send out dog teams.
- If snake is on non-military lands, send out inspectors.
- If dog teams or inspectors suspect BTS is likely, notify supervisor IMMEDIATELY.
- Supervisors, upon concurrence with the inspector that a BTS is likely, IMMEDIATELY contact ALL of the following:

*Lyle Wong, Chief Division of Plant Industry. 973-9535 (wk), 973-9533 (fax)*

*Fred Kraus, HDLNR DOFAW, Alien Species Coordinator. 587-0166 (wk), 587-0160 (fax),  
521-4064 (hm)*

*Tim Ohashi, Assistant State Director, APHIS WS. 861-8576 (wk), 861-8570 (fax), 261-2290 (hm),  
383-2421 (pager)*

- For snakes other than BTS, fax information to HDLNR DOFAW and APHIS WS before next working day.



SNAKE CAPTURED OR KILLED?

IF **Yes**, GO TO ○ NOTIFY HDOA

IF **No**, GO TO ◇ IS BTS LIKELY?



NOTIFY HDOA

All snakes captured or killed should be turned over to HDOA Plant Quarantine Branch.

#### 4 INVESTIGATE

◇ IS BTS LIKELY?

IF **Yes**, GO TO □ BTS TRIUMVIRATE, AND GO TO ◇ IS IT DOD LANDS?

IF **No**, GOTO ○ NOTIFY HDLNR DOFAW

□ BTS TRIUMVIRATE\*:

- 1) Lyle Wong, Chief Division of Plant Industry
- 2) Fred Kraus, HDLNR DOFAW Alien Species Coordinator
- 3) Tim Ohashi, APHIS WS Assistant State Director

\*If on military land, add Commander Jim May, J431, USCINCPAC.

The decision to activate Emergency Response requires the concurrence of at least two BTS Triumvirate member's concurrence. If the decision is made to activate Emergency Response on military lands, contact *Commander Jim May, J431, USCINCPAC*, at 477-0850 (wk), 477-0851 (fax), or HDLNR DOFAW alien species coordinator for all other lands.

If BTS is suspected, APHIS WS and HDOA will investigate mode of entry.

◇ IS IT DOD LANDS?

IF **Yes**, GO TO ○ NOTIFY J431-USCINPAC

IF **No**, GO TO ○ NOTIFY HDLNR DOFAW

**5 ASSIGNMENT**

- NOTIFY J431-USCINCPAC

**Commander Jim May, 477-0850 (wk), 477-0851 (fax)**

Activate APHIS WS Operations for Military Lands by notifying the APHIS WS-District Supervisor.

- NOTIFY APHIS WS-DISTRICT SUPERVISOR

**Jim Murphy, APHIS WS, 861-8575 (wk), 623-4913 (hm), 578-5951 (pager).**

Conduct Emergency Response Trapping and Searches.

- NOTIFY HDLNR DOFAW

**Fred Kraus, HDLNR DOFAW, Alien Species Coordinator 587-0166 (wk), 587-0160 (fax).**

If BTS is suspected, coordinate with HDLNR DOFAW District Wildlife Biologist to conduct Emergency Response Trapping and Searches. If not BTS, HDLNR DOFAW will determine and carry out appropriate response.

- USE APHIS WS?

If **YES**, GO TO  NOTIFY APHIS WS-DISTRICT SUPERVISOR

If **NO**, GO TO  BTS EMERGENCY RESPONSE TRAPPING AND SEARCHES

## **6 EMERGENCY RESPONSE**

### BTS EMERGENCY RESPONSE TRAPPING AND SEARCHES

- Place 100 traps baited with live mice
- Operate for 30 nights
- Conduct night fenceline searches
- APHIS WS operations should be coordinated with Military POC and HDLNR DOFAW
- HDLNR DOFAW operations should be coordinated by the District Wildlife Biologist. On Oahu, APHIS WS will provide mice and supplies.

## **7 EVALUATE**

### IS SNAKE CAPTURED OR KILLED?

If **Yes**, report to ○ BTS TECHNICAL COMMITTEE.

If **No**, confer with TRIUMVIRATE and determine if Emergency Response should continue.

### BTS TECHNICAL COMMITTEE

Evaluate Emergency Response for incident; make recommendations for improvements.

(To be printed on DOA letterhead)

## SNAKE REPORT FORM

OFFICE: \_\_\_\_\_ OPERATOR: \_\_\_\_\_

Date Received: \_\_\_\_\_ Time: \_\_\_\_\_ AM/PM

CALLER INFORMATION: \_\_\_\_\_

Full Name

Address

Phone (H)

Phone (B)

Other Contact Information for the Next 48 Hours: \_\_\_\_\_

DESCRIPTION OF SIGHTING: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sighting Location (address if applicable): \_\_\_\_\_

Date & Time of Sighting: \_\_\_\_\_

Distance From Snake at Time of Sighting: \_\_\_\_\_

Snake's Actions: \_\_\_\_\_

Other Witnesses (name, address & phone number): \_\_\_\_\_

Has the Caller Seen a Snake Before? \_\_\_\_\_

What is Your Previous Experience With Snakes? \_\_\_\_\_

\_\_\_\_\_

Instructions Given to the Caller by the Operator (as outlined on the other side): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

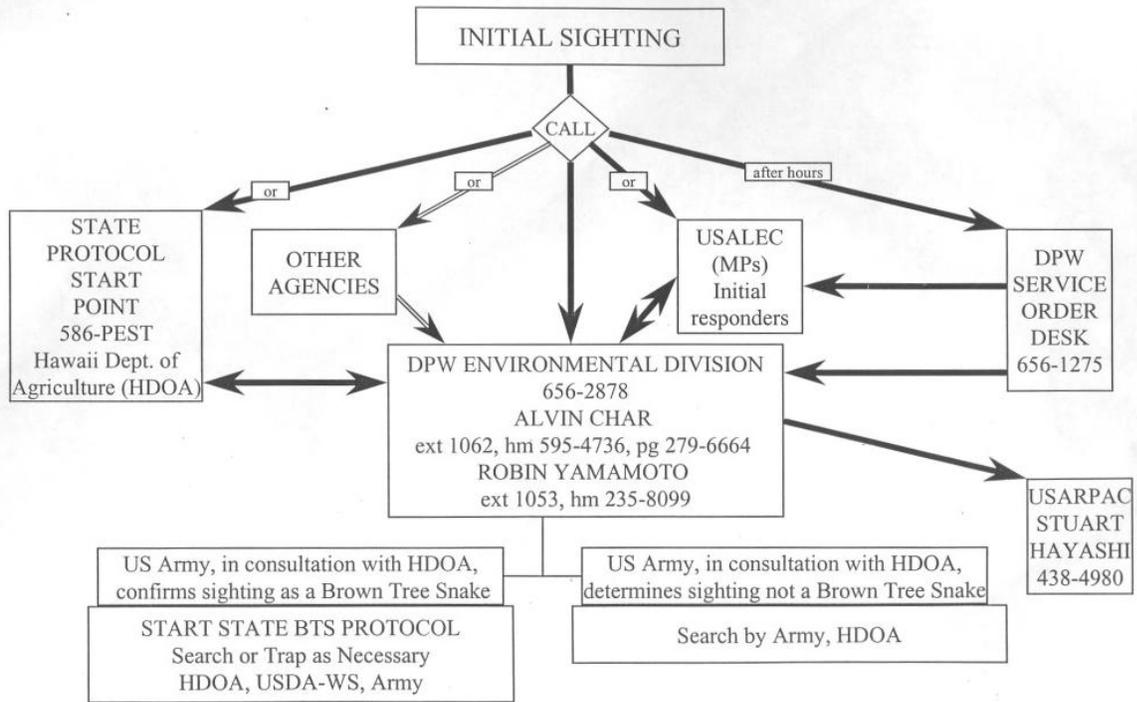
(over)

## INSTRUCTIONS

The caller is provided with the following instructions:

1. If snake is resting/hiding or in an enclosed area, do not disturb it.
2. If unable to contain the snake, track its location until authorities arrive.

# USAG-HI BROWN TREE SNAKE RESPONSE PROTOCOL



APPENDIX L. PEST CONTROL IN THE BARRACKS

Various pests are occasionally found in the same areas inhabited by people. Among these are rodents, cockroaches, flies, mosquitoes, ants, and other miscellaneous crawling pests. Control of these pests, although sometimes difficult, can usually be obtained by following simple, common sense guidelines.

The first step to any successful pest management program is proper sanitation.

This includes:

**- removing all food sources.** All food should be stored in sealed containers. Clean surfaces on which food is prepared or consumed. Do not leave unwashed dishes.



*Brown banded cockroach in unwashed mug.*

**- removing all water sources.** Wipe up splashed water. Fix drips. Do not leave damp towels lying in piles.



*Ants attracted to water in a potted plant.*

**- eliminating unnecessary storage and debris.** The interior and exterior of buildings should be kept free as possible of debris that pests can use for shelter. Anything soft, such as rolled carpeting, insulation, or padded furniture, is particularly attractive to rats. Corrugated cardboard provides excellent harborage (places where pests live and hide) for cockroaches.

**- securing garbage and trash.** Since trash may contain food scraps, all collected waste should be disposed of in pest-proof containers.



*Open trash and recycle containers are an invitation to rats, ants, cockroaches and other pest to dine.*

The second step is eliminating access to buildings. This can be done by:

**- finding and correcting building deficiencies** such as open or poorly fitted doors and windows, unscreened vents, cracks in masonry, or holes gnawed in weather stripping or utility entrances. If found, these deficiencies should be reported to the Military Maintenance Team. Corrections should include screening, caulking or applying new weather stripping.



*Space along pipes running between floors provide an avenue for rodents and other pests.*

**- clearing away plants growing to close to the building.** Vegetation in contact with the building exterior, such as tree limbs or climbing ivy, should be removed. Again, report this to your Military Maintenance Team.



*Plants touching buildings provide pathways for pests to enter. Rats can easily jump 4 feet from*

*tree to roof and back. Ants will readily trail up trees and enter upper floors.*

*The third step is to eliminate harborage*  
(places where pests live and hide).

Nooks and crannies, such as where sinks and fixtures are mounted to the wall or floor, around all types of plumbing, baseboard molding and corner guards, where shelves and cabinets meet walls or door frames, around electrical fixtures, and any cracks on or near food preparation surfaces may harbor cockroaches, silverfish and ants. If pest problems consistently occur near such areas, report this information to your Military Maintenance Team. Simply caulking the area may solve the problem.

By following these steps you should be able to keep pest problems to a minimum. If you cannot minimize a problem after 30 days of following the three steps, report it to your Military Maintenance Team and they will submit a Service Order to DPW for pest control services.

## PEST CONTROL IN THE BARRACKS.

Three Steps in Making a Difference



Robin Yamamoto  
Entomologist  
Directorate of Public Works  
656-2878 ext 1053

APPENDIX M. RESPIRATOR PROGRAM

## RESPIRATOR PROGRAM

The respiratory tract - (the lungs and other parts of the breathing system) - is much more absorbent than the skin, thus this respirator program was developed for your safety.

1. SHOP POLICY: ALL PERSONNEL MUST wear an approved respiratory device when the label directs them to do so. Even if the label does not require use of a respirator, you should always wear a respiratory protective device:
  - a. if the pesticide you are mixing or applying has a precautionary statement such as "do not breath vapors or mists" or " harmful or fatal is inhaled".
  - b. during calibration and adjusting of equipment if you are using pesticides with the above precautionary statements.
  - c. if you will be exposed to a pesticide for a long time.
  - d. if you are working in an enclosed area.

All personnel will be issued a respiratory protection device (normally a cartridge respirator). It is the responsibility of the individual to ensure that his/her respirator is kept in clean and good operating condition in accordance with this respirator program.

2. Standard Operating Procedures for selection and use:  
Use only those respirators which carry a seal of approval for pesticide use from the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA). Read the manufacturer's instruction on the use and care of any respirator and it's parts before you use it. Respirator selection is based on the hazards to which the worker is exposed.

### TYPES OF RESPIRATORS :

**Negative Pressure Respirators:** This type of respirators rely on the wearer's ability to draw air through filters in normal breathing. The respirator must fit the face well. Long sideburns, a beard, or glasses may prevent an adequate seal.

**CARTRIDGE RESPIRATORS:** Used when worker is intermitently exposed to a pesticide. The inhaled air is drawn through both a fiber filter and a cartridge to absorb pesticide vapors. Most harmful vapors, gases, and particles are removed. These are usually half-face type masks which cover the mouth and nose. To cover the eyes also, use either a full face cartridge respirator, one that is combined with goggles, or wear seperate goggles.

**CANISTER RESPIRATOR (GAS MASK):** Used when worker is continuously exposed to a pesticide. The canister has longer-lasting absorbent material and filters than the cartridge respirator. Gas masks usually provide full-face protection. Neither canister or cartridge respirators will protect you from high concentrations of vapor, and neither kind is effective when oxygen supply is low, for example, during fumigation inside buildings, railroad cars, holds of ships or grain bins.

**SUPPLIED-AIR RESPIRATORS:** Used when mixing or applying pesticides when the oxygen supply is low, when you are exposed to high concentrations of a highly toxic pesticide. You must work close to the supply of clean air, since this type of respirator works by pumping air through a hose to the face mask.

**SELF-CONTAINED BREATHING APPARATUS:** Used under same conditions as the supplied-air respirators. Operates similar - only difference is you carry the oxygen supply (or air supply) with you. This allows you to move more freely and over a wider area. Seek training from competent instructors before using self-contained breathing equipment. These devices contain a limited air supply, which may be used up even more quickly in high temperatures or with excessive exertion.

**POSITIVE PRESSURE RESPIRATORS:** - Uses a lightweight blower to draw the contaminated air through the filter. It forces the clean air into a loose-fitting helmet-like head covering. The outflow prevents contaminants from entering the helmet. The filtered air circulates over the head, neck and upper body of the applicator, providing some cooling.

**MEDICAL EXAMINATIONS:**

All pest management personnel shall be medically checked semi-annually as per AR 40-5.

**RESPIRATOR TRAINING CHART**

NAME	I	COURSE	I	DATE	I	INSTRUCTOR	I	FIT TEST	DATE
	I		I		I		I		
	I		I		I		I		
	I		I		I		I		
	I		I		I		I		
	I		I		I		I		
	I		I		I		I		
	I		I		I		I		
	I		I		I		I		

## FIT TESTING OF RESPIRATORS;

### ISOAMYL ACETATE (banana oil) FIT TEST

The chemical isoamyl acetate, commonly referred to as "banana oil" is available from major chemical suppliers and is widely used to check respirator fit. Its odor is easy to detect and the chemical can be used with any pesticide respirator equipped with organic vapor cartridges or canister.

When conducting a fit test, it is important to know that some brands of respirators are available in small, medium, and large sizes. If possible, have several different sizes available during the test to ensure proper fit. Try respirators from different manufacturers since one brand may fit better than others.

If a respirator does not fit properly, the applicator will not be adequately protected. Therefore, be sure to follow the test procedures outlined below:

1. Be sure there is no banana oil odor in the test area that may influence the wearer's ability to detect its presence. Once a respirator is selected, have the wearer adjust it until there is a good face-to-mask seal.
2. Saturate a piece of cotton or cloth with banana oil. The person performing the test should wear rubber gloves and avoid skin contact with the wearer. Recommend the construction of a fit test chamber.
3. Pass the saturated material close to the respirator in a clockwise and counterclockwise motion. Have the wearer stand still and breathe normally and then deeply. If the wearer smells banana oil, readjust the respirator or select a different size or style before starting again.
4. If the odor cannot be detected while the wearer is standing still, have them perform side-to-side and up-and-down head movements. Also have the wearer talk loudly enough to be heard by someone standing nearby. Then have the person make other movements, (such as bending over), that may occur during spray application.
5. If the banana oil odor cannot be detected during the above movements, it indicates a satisfactory fit. Seal the respirator in a plastic bag marked with the wearer's name. Keep a record of when the fit test was conducted, along with the size and brand of the respirator selected for each user. Recommend the use of a "fit test card" to be carried by each user.

RESPIRATOR MAINTENANCE & INSPECTION: No matter how well the respiratory device is designed and made, unless it is properly cared for and maintained, it may fail to provide proper protection. It is recommended that respirators be cleaned daily (if used). The two most common failings are; 1. failure to occasionally wash the facepiece with soap and water - (Protective equipment is only effective as long as it is free from pesticide contamination and works properly). 2. Neglecting to change the filter cartridges or canisters regularly - (The ability of a respirator to protect you from harmful pesticide dusts, mists, and vapors depends in part on how well you maintain it. Cartridges are normally good for approximately 8 hours of use in a chemical atmosphere.

INSPECTIONS; Before cleaning your respirator at the end of each day, inspect it for wear and damage. Use the following as a check list for inspection. If damaged parts are found, the defective part must be replaced.

PART I FRAYING I TEARS/CUTS I CRACKS I LOSS OF ELASTICITY

HEADBAND	I	I	I	I
GASKETS	I	I	I	I
VALVES	I	I	I	I
HOLDERS	I	I	I	I
FACEPIECE	I	I	I	I

When replacing items on a respirator, use only approved replacement parts for that SPECIFIC BRAND AND MODEL. If unapproved parts are used, the respirator will not be in compliance with the law (OSHA standard 1910.134) and the respirator may be dangerous to use.

CLEANING:

1. Disassemble the respirator - remove all part except the out-let valve.
2. Wash all parts in a solution of warm water and mild liquid detergent. (DO NOT USE ABRASIVES OR CLEANING COMPOUNDS CONTAINING ALCOHOL OR OTHER ORGANIC SOLVENTS).
3. Use a soft brush or a cloth to remove any pesticide residue.
4. Rinse the respirator and valve parts in clean water.
5. Air dry rather than using applied heat.

6. After respirator is completely dry, reassemble and store in a clean plastic bag to protect it from dirt and environmental deterioration. (Remember store the respirator with the cartridges faced up).

7. RESPERATORS MUST BE STORED IN A CONVEINIET LOCATION THAT IS CLEAN AND SANITARY !!

PROGRAM MAINTENANCE ;

Shop foreman shall provide surveilliance of this program. He shall inspect and evaluate the program for compliance and effectiveness.

APPENDIX N. CONTROL AND RESPONSE, INSTALLATION SPILL CONTINGENCY PLAN  
(Section 3 of the 25<sup>th</sup> Infantry Division (Light) and U.S. Army, Hawaii Spill Prevention Control and  
Countermeasures)

## **Article II. 3.0 CONTROL AND RESPONSE, INSTALLATION SPILL CONTINGENCY PLAN**

### **Section 2.01**

### **Section 2.02 3.1 MISSION**

The Installation Spill Contingency Plan (ISCP) establishes responsibilities, duties, procedures, and resources to be employed to contain, mitigate, and clean up petroleum product and hazardous substance spills on United States Army installations in Hawaii. It has been developed and implemented in order to minimize hazards to human health and the environment in the event of fires, explosion, or releases of hazardous substances or petroleum, oil, or lubricant (POL) products to the environment.

Federal Regulations require activities that use petroleum products or hazardous substances, or generate hazardous wastes, to develop contingency plans to respond to spills of these materials. The ISCP was developed to meet the Federal requirements for spill response and contingency plans.

The following statutes and regulations address contingency planning and reporting requirements:

- Army Regulation 200-1, Environmental Protection and Enhancement, 21 Feb 1997
- Title 40, Code of Federal Regulations, Part 300, National Oil and Hazardous Substance Pollution Contingency Plan
- Public Law 96-510, CERCLA of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986
- RCRA Regulations, Title 40 Code of Federal Regulations Part 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Part 262, Standards Applicable to Generators of Hazardous Wastes; Part 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks
- Title 40 Code of Federal Regulations Part 110, Discharge of Oil

### **3.2 RESPONSIBILITIES FOR SPILL RESPONSE**

(a)

#### **(b) 3.2.1 Introduction**

All units and activities on USAG-HI installations handling oil and hazardous substances in their daily operations shall be familiar with the information contained in this plan for its successful execution. Furthermore, these organizations shall provide basic spill prevention and response training to their personnel on an annual basis.

The provisions of this plan are to be carried out immediately in the event of an emergency or other situation that threatens human health or the environment.

(c)

#### **(d) 3.2.2 Categorizing and Classifying Spills**

**WARNING:** When a spill or leak of an unknown material or fluid is discovered, immediately contact the installation Fire Department. If there is any reason to suspect the discharge may have been deliberate or the result of an act of sabotage or terrorist activity, inform the Fire Department when reporting the spill. Do not attempt to recover the spill. Leave the area immediately, request further guidance from the Fire Department, and report the spill to DPW Environmental.

The best spill response is prevention. Performing routine inspections and maintenance, training personnel to follow existing work procedures, and fostering an atmosphere of attention to detail, will prevent a spill from occurring in the first place. All spills shall be immediately reported upon discovery to the DPW Environmental Office. The most common causes for spills are operator error or equipment failure.

When notified of a discharge or spill, the Spill Coordinator shall determine the appropriate level of response and dispatch or request the necessary resources. Successful resolution of a spill event largely depends on prompt appropriate action. This plan discusses minor and major spills: minor spills typically being handled by the unit, tenant, or contractor; major spills requiring assistance from IRT or other emergency response personnel.

(e)

(f) **3.2.3 Minor Spills**

(i)

(ii) 3.2.3.1 What Are Minor Spills?

1) For the purposes of this plan and as a general guideline, minor spills are those releases of oil, paints and other substances, that are 1) stored and used at facilities, 2) that can be readily cleaned up by unit personnel with available equipment, and 3) that do not require specialized recovery techniques or advanced personal protective equipment. Report all spills immediately to the DPW Environmental Office.

2) Minor spills involve small quantities of oil (less than 25 gallons), or paints and hazardous substances that do not require advanced personnel protective equipment, released indoors, to the ground, or to paved areas. Minor spills also include spills less than the reportable quantities (see Appendix D).

3) If there is any question regarding if the spill is a major or minor spill, assume the spill is a major spill.

4) All minor spills will be immediately cleaned up the same day the release is discovered. A minor spill of POL not cleaned up within 72 hours becomes a major spill and must be reported to the State and the LEPC.

5) Releases of any amount of these materials into water bodies or drainage systems shall be considered as major spills due to their potential environmental impact and the need for reporting releases of certain hazardous substances and petroleum products to regulatory agencies.

(iii) 3.2.3.2 Who Cleans Up Minor Spills?

Minor spills are cleaned up by the unit/activity, tenant, or contractor that caused the spill.

Although in some instances DPW Environmental will supervise recovery, cleanup of minor spills are not the responsibility of the USAG-HI IRT.

Prompt cleanup actions, including reporting and follow-through are essential. Any amount of petroleum or fuel oil released to the environment which is less than 25 gallons, but is not contained or cleaned up within 72 hours must be reported to the State and the LEPC.

1) Each activity, tenant, or contractor using or storing POL, hazardous substances, or hazardous wastes will designate a spill coordinator and an alternate that will be responsible for spill response and reporting. The spill coordinator, generally the ECO, will be identified to all personnel in the work area, and listed conspicuously on official bulletin boards.

2) The ECO will be responsible for coordinating and overseeing responses to minor spills, and calling the point of contact listed in Table 3-2. The ECO shall have a Memorandum of Appointment by the Unit Chain of Command, and attend the ECO training within 30 days of appointment. Contractors and tenant units should contact DPW Environmental with question regarding training requirements for their designated ECOs.

**TABLE 3-2. Points of Contact to Activate IRT**

All spills will be reported directly to the Environmental Division Spill Response Line Primary POCs.

<b>Title</b>	<b>Directorate/Activity</b>	<b>Location and Telephone Number</b>
<b>DPW Environmental Division Emergency Spill Response Line (24-Hour)</b>	DPW	<b>PH: 656-1111</b> 572 Santos Dumont Ave, WAAF
<b>Alternate DPW Emergency Spill Response Line – Work Order Desk</b>	All spills	947 Wright Ave, WAAF PH: 656-1275
<b><u>PRIMARY POCS:</u></b>		
Chief, Compliance/ Pollution Prevention Branch	DPW	572 Santos Dumont Ave, WAAF PH: 656-2878 ext. 1049
Hazardous Waste Program Manager	DPW	572 Santos Dumont Ave, WAAF PH: 656-2878 ext. 1022
Emergency Planning and Community Right-to-Know Act Program Manager	DPW	572 Santos Dumont Ave, WAAF PH: 656-2878 ext. 1019

### **3.2.3.3 How Are Minor Spills Cleaned Up?**

See Appendix E of this Plan.

#### **(iv) 3.2.3.4 What Are Major Spills?**

1) For the purposes of this plan, major spills involve more than 25 gallons of oil or fuel or more than 1 gallon of a hazardous substance to the ground, and any quantity of oil, fuel or a hazardous substance that is spilled to a drain or a water body. It also includes any spill that exceeds the reportable quantities of items listed in Appendix D.

2) Any release of a POL, hazardous substance, or hazardous waste that enters or has the potential to enter a stream, lake, river, canal, wetland, bay, ocean, storm drain, drainage ditch, or sewer manhole.

- 3) Any release of a reportable quantity to the ground.
- 4) A release of a petroleum product in excess of 25 gallons or any amount of POL not cleaned up within 72 hours.
- 5) Any spills thought to be beyond the capabilities of activity personnel or equipment.
- 6) Suspected leaks from underground storage tanks or piping that are discovered from discrepancies in inventory records.

**Table 3-3. Installation Response Team (IRT) Members**

Title	Directorate/ Activity	Location and Telephone Number
<u>INSTALLATION ON-SCENE COORDINATORS (IOSC)</u>		
Chief, Compliance/ Pollution Prevention Branch	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext. 1049
Hazardous Waste Program Manager	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext. 1022
Emergency Planning and Community Right-to-Know Act Program Manager	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext. 1019
Clean Water Program Manager	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext. 1031
Drinking Water, Air Pollutants Program Manager	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext 1059
Underground Storage Tanks Program Manager	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext. 1017
Asbestos, Lead Paint, PCBs Program Manager	DPW	572 Santos Dumont Ave., WAAF PH: 656-2878 ext. 1018
<u>DPW POCs</u>		
DPW Hazardous Waste Transfer and Accumulation Point (TAP) Manager	DPW	Bldg. 6040, Schofield Barracks, East Range PH: 656-0866
Environmental Support Section, Engineering Branch	DPW	Bldg. 2624, Schofield Barracks PH: 655-0551
Supervisor, Maintenance & Repair Branch	DPW	Bldg. 2624, Schofield Barracks PH: 655-0592
Supervisor, Schofield Barracks Maintenance & Repair Section	DPW	Bldg. 2624, Schofield Barracks PH: 655-0591
Supervisor, Fort Shafter Maintenance & Repair Section	DPW	Bldg. 346, Fort Shafter PH: 438-1325
Chief, Engineering Plans & Services Division	DPW	572 Santos Dumont Ave, WAAF PH: 656-1410 ext. 1201

Title	Directorate/ Activity	Location and Telephone Number
Operations Officer	DPW	947 Wright Ave., WAAF PH: 656-1288 ext. 2205
Lead, Contract Performance Evaluator, Contracts Branch	DPW	Bldg. 113, WAAF PH: 656-1410 ext. 2042
Cultural Resource Manager	DPW	572 Santos Dumont Ave, WAAF PH: 656-2878 ext. 1052
Chief, Purchasing & Construction Div, Regional Contracting Office-HI	RCO-HI	Bldg. 520, Fort Shafter PH: 438-6535 ext. 136
<b><u>ADDITIONAL ACTION OFFICERS:</u></b>		
Hazardous Waste Program Manager	DPW	656-2878 ext. 1022
HMCC Contracting Officer Representative	DOL	656-2381
Range Officer, Range Control	G-3 25 <sup>th</sup> ID(L)	655-1404
Assistant S-4	45 <sup>th</sup> CSG	655-9089
Chief, Operations Division	TAMC	224-2350 Cellular
Logistics Management Officer	POD	438-8316
Environmental Manager	9 <sup>th</sup> RSC	438-1600 ext. 3247
Safety & Security Officer, Hawaii Exchange	AAFES	423-8815
Battalion XO	65 <sup>th</sup> Engineer Bn	655-2881
Battalion XO Staff Duty	84 <sup>th</sup> Engineer Bn	655-6533 655-2895
<b><u>FIRE DEPARTMENTS:</u></b>		
Schofield Barracks, Wheeler Army Airfield, Helemano Military Reservation, Fort Shafter, TAMC, Aliamanu Military Reservation, Fort DeRussy		471-7117
Pohakuloa Training Area		969-2441
Kilauea Military Camp		967-8377/8378
<b><u>MILITARY POLICE:</u></b>		
Schofield Barracks, Wheeler Army Airfield, Helemano Military Reservation		655-0911
Fort Shafter, Tripler Army Medical Center, Aliamanu Military Reservation		438-0911
Fort DeRussy		438-2650
Pohakuloa Training Area		969-2425
Kilauea Military Camp		967-8368
<b><u>AMBULANCE:</u></b>		
Schofield Barracks, Wheeler Army Airfield, Helemano Military Reservation		911
Fort Shafter, Tripler Army Medical Center, Aliamanu Military Reservation		911
Fort DeRussy		911
Pohakuloa Training Area		969-2433
Kilauea Military Camp		967-8367

Title	Directorate/ Activity	Location and Telephone Number
<u>SUPPORT STAFF:</u>		
Staff Judge Advocate		438-2845/6722
Installation Fire & Safety Officer		656-1331/0616
Director of Health Services		433-6693
Public Affairs Office		655-2918
<u>COMMUNITY COMMANDERS:</u>		
Schofield Barracks, Wheeler Army Airfield, Helemano Military Reservation		655-0216
Fort Shafter, Tripler Army Medical Center, Fort DeRussy		438-6996
Pohakuloa Training Area, Kilauea Military Camp		969-2400

(v) 3.2.3.5 Who Cleans Up Major Spills?

1) Major spills will generally be managed and/or cleaned up by the USAG-HI IRT. However, common sense and prompt spill containment and emergency response in all situations should be practiced when it is safe to do so. A spill contractor will be used whenever the spill is outside the capabilities of in-house support. A copy of all spill response contracts will be maintained by the EPCRA Program Manager.

2) In some instances of spills of large quantities of POL or where excavation is required, the responsible unit may still be able to perform recovery of the spill but shall be supervised by the DPW Environmental Office.

3) For major spills at Pohakuloa Training Area and Kilauea Military Camp, DPW IOSCs will provide guidance and support whenever possible and will make the necessary agency notifications. A spill contractor will be used whenever outside the capabilities of in-house support

(vi) 3.2.3.6 How to Activate the IRT In the Event of A Major Spill?

Refer to section 3.3.2 for notifying the IRT. The IOSC will activate the IRT if necessary, upon receiving notification of a major spill.

(g)

**(h) 3.2.4 Installation Response Team (IRT)**

1) The IRT is tasked with spill containment, clean up, and site restoration, until a stable condition is reached for all spills that cannot be readily handled by the personnel and/or organization directly responsible for the spill.

2) The DPW supervises the IRT. Members of the IRT are listed in Table 3-3.

3) Units of the IRT are responsible for mobilizing and assembling promptly with the necessary materials and equipment at the location designated by the IOSC. The containment and clean up of the spill shall have priority over all DPW efforts.

4) The IRT shall participate in a simulated spill event training exercise on an annual basis. The IRT members shall receive formal training and refresher training as per 29 CFR 1910.120

5) The IRT will conduct all emergency responses in accordance with OSHA regulations governing health and safety practices for emergency operations at hazardous waste sites except when dealing with non-hazardous materials. The Installation Fire and Safety Office will ensure that proper OSHA procedures are practiced by monitoring response activities.

6) Specific responsibilities for IRT members and support functions are described below.

(i)

(ii) **3.2.4.1 Installation On-Scene Coordinator (IOSC)**

The IOSC is responsible for managing the spill response effort. The designated IOSCs are listed in Table 3-3. The IOSC will:

1) Ensure that reportable spills are reported immediately to the EPA, U.S. Coast Guard, the State Emergency Response Commission (SERC), the Local Emergency Planning Committee (LEPC), or the Pacific Region Office (PARO), as required by regulation. For spills suspected of being classified as a serious incident in accordance with AR 190-40, Serious Incident Report, immediately notify the DPW Operations Officer.

2) Maintain a current list of resources available for spill contingencies. Request construction equipment and vehicle support when needed from the 65th and 84th Engineering Battalions and Schofield Barracks Area Engineers, via the DPW Operations Officer. Resources of other non-Army agencies, along with telephone numbers, are included in Table 3-4.

**Table 3-4. Other DOD Organizations with Spill Response Capabilities**

<b>Organization</b>	<b>Telephone No.</b>
COMNAVBASE	471-8481
Base Civil Engineer Office, Hickam AFB	449-1660
<b>SPILL HOTLINE NUMBERS</b>	
National Response Center	800-424-8802
CHEMTREC	800-424-9300
CERCLIS Hotline	703-538-7234
EPA Emergency Planning and Community Right-to-Know	800-724-9346
RCRA/UST Superfund	800-424-9346
TSCA	202-554-1404
Solid Waste Information Clearinghouse	900-659-7000
CFC's	800-296-1996
Air RISC Hotline	919-541-0888
Pesticides Information	800-858-7378
General Environmental Questions (Construction Energy Research Lab, U.S. Army R&D Center, Environmental Processing Branch)	800-USA-CERL ext. 5424

3) Designate a location for an installation response operations center at each installation that will be used in the event of a major spill.

4) Identify available communications equipment that can be used during an emergency (such as Military Police radios, cellular telephones, etc.). Electronic communication and testing equipment must be intrinsically safe for use in explosive atmospheres.

5) Maintain a list of potential sources of spills at USAG-HI installations, including the capacity, type of substance stored, and remarks on relative risk of spills. Appendix A contains a list of

current oil or hazardous substances/wastes that are potential sources of spills or leaks and complete inventory reports can be obtained from the DPW EPCRA program manager.

6) Identify water resources to be protected in the event of a significant spill. First priority resources include drinking water sources, which are presently all sub-surface. Second priority resources include sensitive streams and navigable waters.

7) Serve as a primary point-of-contact with other agencies to provide Army resources for assistance in Regional Response Plans for clean up or containment of non-Army spills. Initial request from outside agencies for Army assistance will be through the Director of Plans and Training, USAG-HI. Appendix H provides guidance when Army assistance is requested by the Regional Response Team, or when there is imminent danger to life and property requiring Army action to be taken for a non-Army spill.

8) Schedule a simulated spill event annually. Appendix I establishes procedures for conducting the annual spill response exercise.

9) Maintain a library of reference materials pertinent to the ISCP. These materials should include Material Safety Data Sheets, emergency response resource information, general information on chemicals, etc.

10) Procure and maintain a supply of absorbent materials for absorbing spills and necessary equipment for spill response at IOSC installation.

11) Maintain records pertaining to major and minor spill events and response actions.

(iii) 3.2.4.2 [Section Reserved]

(iv) 3.2.4.3 Responders At Remote Installations

1) For major spills at Pohakuloa Training Area, and Kilauea Military Camp, DPW IOSCs will provide guidance and support whenever possible and will make the necessary agency notifications. A spill contractor will be used whenever outside the capabilities of in-house support.

2) Spill responders will keep the DPW IOSC apprised of cleanup actions.

(v)

(vi) 3.2.4.4 DPWUnit

1) The unit will respond to spills as directed by the DPW IOSC, within their capabilities.

2) Mobilization responsibilities and procedures are contained in DPW SOP Number APVG-GWV-C No. 300, Notification and Initial Mobilization for Spills of POL, Hazardous Materials/Waste, or Air Pollutants and Wastewater.

3) Generally, the DPW Unit will only respond to spills where advanced Personal Protective Equipment is not required. However, properly trained DPW Unit personnel may be required to respond to spills requiring advanced PPE under the direction of the IOSC.

(vii) 3.2.4.5 Fire Department

1) The Fire Department will respond to spills and releases of unknown substances.

2) Where there is a threat of fire, the Fire Department will immediately respond to an oil or hazardous substance spill in accordance with established procedures and COMNAVBASE Pearl Harbor letter 5090.POL42 of 10 Dec 92. The Fire Department will also respond to incidents where entry of oil or hazardous substance into a stormdrain or waterway is imminent. The Fire Chief or his representative will direct the incident response operations and will coordinate operations with the Military Police. After

threats to life and property are eliminated, command of the incident is transferred to the IOSC. The Fire Chief will also provide technical assistance to the IOSC with respect to the response to and handling of combustible or flammable substances.

3) The Fire Department will also respond to **major spills that cannot be handled by organizations that caused the spill or the IRT**. After arrival of a private spill contractor, the command of the incident is transferred to the IOSC.

4) The Fire Department will make available fire department personnel with protective clothing and equipment (e.g., SCBA) under its control. It will direct the emergency dispatch operator to obtain emergency medical services (if required) and call in the spill to the IOSC, if these actions have not already been accomplished. The Fire Department will also develop and maintain agreements for use of the City and County Hazardous Material Team.

5) For spills at PTA and KMC, respond at the first responder operations level, containing the spill from a distance to keep it from spreading and to protect and minimize exposure to nearby persons, property, and the environment.

(viii)

(ix) 3.2.4.6 Military Police

1) Request ambulance, fire department, and Installation On-Scene Coordinator (IOSC) support as appropriate. IOSC activation contacts are at Table 3-2.

2) Provide site security to prohibit entry of unauthorized persons to a spill site and to provide for safe flow of vehicular traffic in and around the spill site.

3) Evacuate military personnel within the Army installation and coordinate evacuation of civilian personnel with the Civil Defense and local police if necessary.

(x) 3.2.4.7 Commanders 65th and 84th Engineering Battalions

The Engineering Battalions will provide available equipment and operators for response actions, when requested by the DPW Operations Officer. Available equipment includes small equipment excavators, backhoes, bulldozers, road graders, and scoop loaders.

(xi) 3.2.4.8 Other Units and Activities on USAGHI Installations

Units and activities are represented on the IRT by the action officers as indicated in Table 3-3. Action officers become members of the IRT on an ad-hoc basis, when a spill involving the IRT occurs at one of their facilities. In a spill situation, the ECO and the activity-specific emergency response coordinator and/or alternate will provide detailed information to the IRT on the nature of the spill and the steps already taken to control the spill. The ECO and coordinator will also assist the IRT, as appropriate. The ECO will also advise on the proper procedures for disposal of the spill residues.

(xii)

(xiii) 3.2.4.9 Support Staff to the IRT

1)

2) **3.2.4.9.1 Staff Judge Advocate**

1) The SJA will respond to oil and hazardous substance pollution spills at the request of the IOSC.

2) Provide guidance to ensure that information, records, and samples adequate for legal purposes are obtained and safeguarded for future use by appropriate responding agencies. The SJA will also advise the IOSC on all the legal aspects of spill response.

**3) 3.2.4.9.2 Public Affairs Office**

1) The PAO will provide an on-site PAO spokesperson for oil or hazardous substance spills when requested by the IOSC.

2) Upon notification of an oil or hazardous substance spill, or in response to media query, the PAO will prepare and coordinate appropriate media releases. Detailed procedures, responsibilities, and methods for releasing information to the public are described in Appendix G.

**4) 3.2.4.9.3 Director, Installation Fire and Safety**

1) The Director, Installation Fire and Safety, will respond to all major spills that present hazards to personnel and facilities.

2) Provide technical assistance to the IOSC with respect to the safety of personnel during response operations and ensure compliance with applicable OSHA regulations.

**5) 3.2.4.9.4 Director of Health Services**

1) Upon request from the IOSC, the Director of Health Services (DHS) will provide medical support consistent with the emergency.

2) On-site care will normally be limited to emergency medical treatment necessary to preserve life and limb. Although patient evacuation by military ambulance may be desired, use of on-site transportation assets may provide a more expedient means. If on-site transportation is used, consideration must be given to the additional potential spread of hazardous substances.

3) The DHS will also advise the IOSC regarding the potential threat to personnel and civilians in the surrounding area and the need for evacuation to protect human health.

4) The DHS will also assist the Director, Installation Fire and Safety, with respirator fit testing, as needed, for response personnel. DHS may also provide guidance to identify chemical hazards and protective equipment.

**Section 2.03 3.3 SPILL DISCOVERY AND INITIAL NOTIFICATION PROCEDURES**

These procedures are summarized in quick reference tables in Appendix E for various types of chemicals typically found at USAG-HI facilities.

**(a) 3.3.1 Initial Defensive Actions**

The following initial defensive actions shall be implemented as necessary upon discovery of a spill:

1) Evacuate the area of non-essential personnel and direct personnel to notify DPW Environmental, the Military Police, and Fire Department.

2) Summon emergency medical services if personnel are injured.

3) Remove ignition sources (cigarettes, torches, etc.) and turn off electric power in the case of a flammable spill to minimize fire hazards.

- 4) Ventilate the area in the case of the presence of volatile materials or dense vapors spilled inside a building.
- 5) Stop flow of material, **if it is safe to do so**, by plugging the leak, activating any emergency shut offs, reorienting the container, placing the container in a drip pan, placing the container in an over-pack container, or using any other expedient method available.
- 6) Contain spilled material to keep spill from spreading and flowing beyond the immediate area or into drains, by using plugs, mats, absorbents, spill booms, or any other expedient method available.
- 7) As the spill area is isolated, the “hot zone” should be expanded in a DOWNWIND DIRECTION, paying particular attention to sensitive populations (e.g. schools, child-care center, medical facilities, etc.) if spilled materials are volatile, or there is a short-term danger if material is inhaled.

(b)

(c) **3.3.2 Initial Notification Procedures**

The person discovering the spill shall report it immediately to the organization’s designated spill response coordinator, who will immediately notify DPW Environmental. The Military Police and/or the Fire Department shall be contacted 1) if there is a threat of fire, 2) danger to public health, or 3) it could affect a sensitive environmental area (such as entering a water body).

All spills shall be immediately reported to DPW Environmental (Table 3-3) by the organization spill response coordinator, Military Police, Fire Department or anyone with knowledge of a spill.

(i)

(ii) 3.3.2.1 Notification For Major Spills

- 1) The Military Police are to be notified of spills immediately by the person discovering the spill. Any instructions provided by the Military Police regarding evacuation procedures shall be followed. The Military Police will notify the Environmental Division if not already done (Table 3-2).
- 2) The Fire Department will be notified either by the person discovering the spill or by the Military Police when the threat of fire is present. The Fire Department will notify DPW Environmental if not already done (Table 3-2).
- 3) Medical/ambulance support will be requested either by the person discovering the spill or by the Military Police, if needed.

(iii)

(iv) 3.3.2.2 Information to Be Provided

As a minimum the following information shall be provided prior to activation of the IRT whenever possible (Use the Spill Notification Form in Appendix B of this plan if available):

- Name and organization of individual reporting spill
- Location of spill
- Number of injured personnel and the nature of their injuries (if applicable)
- Substance spilled (if known)
- Time spill occurred (if known)

- Amount of material spilled (if known)
- Surface on which spill occurred (soil, pavement, concrete etc.)
- Rate of material spill (estimated)
- Media on which material was spilled
- Direction and extent to which the spill has traveled
- Any additional pertinent information (i.e., fire or other potential hazards)

**Section 2.04**

**Section 2.05 3.4 SPILL RESPONSE ACTIONS**

The Fire Department will immediately respond as necessary to protect life and property with due respect for the environment. Oil or hazardous substances shall not be flushed into drains except as an emergency measure to prevent imminent danger to life or property. When time permits, the decision to flush a spill shall be coordinated with the IOSC.

For major spills or where deemed necessary, the IOSC or designee will immediately proceed to the spill site and evaluate the severity of the spill and determine the response necessary for containment and recovery. If necessary the IOSC will:

- Activate the IRT and/or involve a private contractor.
- Mobilize the DPW response team.
- Direct the DPW/Tenant Activity Response Units in accordance with this plan.
- Report reportable spills to the National Response Center, U.S. Coast Guard, SERC, LEPC, PARO, and DPW Operations Officer as described in Section 3.4.3.

**(a) 3.4.1 IOSC/IRT Response**

The response actions of the IOSC and IRT will include the following:

- (i)
- (ii) 3.4.1.1 Activation of the IRT

The IOSC will activate and authorize action of appropriate members of the IRT based on information relayed during initial notification. If insufficient information is available to activate the IRT, the IOSC will immediately investigate the reported spill.

- (iii)
- (iv) 3.4.1.2 Identification of the Spilled Material

The IRT will determine the source, type, and appropriate quantity of spilled substance if not already determined. For releases of unknown substances, the Fire Department will conduct initial field tests to identify the substance. Samples will be collected for laboratory analysis as necessary.

- (v)**
- (vi) **3.4.1.3 Evaluation of the Severity of the Spill**

The IOSC will evaluate the magnitude and severity of the threat to public health, welfare, and natural resources. Response organization expertise such as that possessed by the Fire Department, along with technical references, such as the "NIOSH Pocket Guide to Chemical Hazards," the "Chemical Hazard Response Information System (CHRIS) Manual," and the "DOT Hazardous Materials Emergency Guidelines" will be used as required. In addition, computer programs can be used as resources. Available programs include the EPA's "CAMEO" and "ALOHA" programs and the Federal Emergency Management Agency's "ARCHIE" program.

(vii)

(viii) 3.4.1.4 Protection of Personnel

The IRT, in consultation with the DHS and the Director, Installation Fire and Safety, will ensure that appropriate safety precautions are implemented to protect response personnel and any additional personnel located in close proximity to the probable spill vulnerability zone. Safety precautions will be site-specific, but will include generic actions as restricting access to the area, use of personal protective equipment, and evacuation.

## **WARNING**

It is the responsibility of the IOSC to ensure only trained and qualified personnel perform spill response activities involving major releases of oil and hazardous substances. Aggressive response, such as to a fire in conjunction with an oil tank, shall only be performed by trained first responders such as the fire department. The IOSC must keep a current record of IRT member training and qualifications, and only use the members of the IRT within the limits of their technical capability. The IOSC shall clearly determine the specific hazards before employing non-first responder trained personnel in responding to a spill.

(ix)

(x) 3.4.1.5 Determination of the Responsible Party (RP)

If the responsible party (RP) for the spill is other than the U.S. Army (e.g., tenant, contractor, etc.), the RP shall be informed of the spill, and is responsible for cleaning up the spill. The RP's subsequent response actions will be evaluated by the IOSC. In cases involving Army contractors, the IOSC shall immediately notify the appropriate contracting office of the spill. If the contractor's response action is inadequate or not completed in a timely fashion in the judgment of the IOSC, the IOSC shall inform the Contracting Officer. The Contracting Officer shall direct the contractor to provide adequate response action or face the termination of the contract. In all cases, if the RP's response action is inadequate or not completed in a timely fashion in the judgment of the IOSC, the IOSC shall assume control of the spill response, and the RP shall make reimbursement as directed by the IOSC.

(xi)

(xii) 3.4.1.6 Determination of the Nature and Cause of the Spill

The IRT will document the cause of the spill and take samples as required to determine the chemical identity, concentration, and extent of the spill for response actions and documentation for possible future legal action.

(xiii)

(xiv) 3.4.1.7 Implementation of Spill Containment Procedures

Spill containment procedures, as directed by the IOSC, are to be implemented in order to confine the spill as close to the source as practicable and, if at all possible, prevent spills from exiting the property limits of the installation, or from entering storm drains, sewer line, or navigable waters. Whenever safe to do so, these procedures include, but are not limited to:

- Plugging or patching leaking drums or containers
- Repositioning the container to stop or reduce the leak
- Placing the leaking container in an appropriate overpack
- Using of mats, absorbents, spill booms, or containment vessels to control the spill
- Preventing/diverting the flow path of the spill from entering storm drains or sewer lines
- Building earth dikes, or using sandbags in the case of large spills

If the spill cannot be contained, the IOSC will determine if highly vulnerable areas, water supplies, waste treatment plants, or recreational waters might be adversely affected. Appropriate personnel or organizations will be notified by the IOSC if such conditions exist (e.g. the U.S. Coast Guard if navigable waters are threatened, the wastewater treatment plant if spills could enter the sewer system, etc.).

(xv)

(xvi) 3.4.1.8 Initiation of Clean up Actions

Once the spill has been contained, clean up actions will be initiated using Army resources, if possible. Troop support from the 65th and 84th Engineering Battalions if needed shall be coordinated through the DPW Operations Officer. In those cases where the IRT alone cannot meet the required needs for clean up and disposal, the IOSC will request additional resources. The services of commercial clean up contractors will be used when their expertise and services are warranted under emergency service contracts. All pollutants will be collected and disposed of in accordance with hazardous waste regulations.

(xvii)

(xviii) 3.4.1.9 Additional Internal Notification

Whenever excavation is required to clean up a spill, the DPW Cultural Resource Manager will be consulted prior to excavation to ensure proper management of areas which may contain historical artifacts.

Because of the potential damage that can be caused to a sewage treatment plant, in the event of a release to a sanitary sewer system, the IOSC shall notify the appropriate sewage treatment plant as soon as possible after a spill has occurred.

The IOSC will also notify the appropriate Community Commander, if deemed necessary, as soon as practical, of the spill and the steps taken to control the spill.

The IOSC will advise the PAO if deemed necessary, as soon as practical, of the nature of the spill and any response actions taken. Notification procedures are described in Appendix K.

Organizational Action Officers shall be notified, as soon as practical, of spills relating to waste POL or hazardous wastes.

**(b) 3.4.2 Incident Log**

The IOSC or designee will maintain an Incident Log detailing all actions taken during the course of the spill response. The log will satisfy the written notice requirements of SARA Title III. The log will include, but are not limited to:

- Identification of the substance(s) and volumes of substances released
- Location of the spill, cause of spill, time of day, and duration of the release
- Where the release occurred, sensitive environmental areas affected, and the extent of any environmental damage, if any
- Actions taken to recover the substance(s) and restore the environment
- Personnel involved in the response
- Health and safety precautions and measures employed
- Injuries or exposures that occurred and medical attention received by injured/exposed persons
- Known or anticipated acute or chronic health risks
- Internal notifications performed
- Regulatory status of the release and agencies notified
- Samples collected and analyzed
- Property damage, if any
- Disposal of spill residuals
- Decontamination procedures used

**(c)**

**(d) 3.4.3 Reporting**

(i)

(ii) 3.4.3.1 Hazardous Substances/Hazardous Waste Releases

The IOSC will determine if a reportable hazardous substance release has occurred in accordance with 40 CFR 302: EPA Designation, Reportable Quantities and Notification Requirements for Hazardous Substances Under CERCLA. Spills of hazardous substances as defined in this regulation must be reported immediately to the National Response Center or the U.S., Coast Guard. Telephone numbers are provided in Table 3-5. EPA may require a written follow-up report for a hazardous substance spill.

The IOSC will also determine if an extremely hazardous substance, as defined in the SARA Title III requirements (40 CFR Part 355), has been released outside of the installation boundary. Releases of extremely hazardous substances in excess of reportable quantities that expose persons outside the

installation boundaries require immediate notification to the State of Hawaii Emergency Response Commission (SERC) and the Local Emergency Planning Committee (LEPC) as required in SARA Title III, 40 CFR Part 355: Emergency Planning and Notification. Telephone numbers are provided in Table 3-5. A written follow-up report is also required, containing the information detailed in the previous Section (Incident Log).

The regulatory reportable quantities (RQs) of hazardous and extremely hazardous substances used and stored at USAG-HI facilities is available upon request from the EPCRA Program Manager at DPW Environmental. Complete lists of RQs of hazardous substances, as defined in CERCLA, 40 CFR Part 302, and SARA Title III, 40 CFR Part 355, are provided in Appendix D.

Releases of unlisted hazardous wastes in excess of the RQ also requires reporting under CERCLA regulations and in some cases reporting of releases of hazardous wastes to EPA under the RCRA regulation in 40 CFR 265 Subpart C.

Spills of reportable quantities under the State Contingency Plan (Hawaii Administrative Rules, Title 11, Department of Health, Chapter 451) will be reported to the State and to the LEPC.

Releases which, based on the nature, gravity, potential for adverse publicity, or potential serious consequences, will also be reported to PARO in accordance with AR 190-40, Serious Incident Report, and also to the DPW Operations Officer.

(iii)

(iv) 3.4.3.2 Releases of Oil to Navigable Waters

Releases of oil into navigable waters must immediately be reported to the National Response Center or the U.S. Coast Guard in accordance with 40 CFR 110: EPA Regulations on Discharge of Oil. Reportable releases are defined as those in excess of water quality standards or cause a visible sheen on the water surface, a discoloration of adjoining shorelines, or form a sludge or emulsion beneath the water surface or on adjoining shorelines. A follow-up written report to EPA, within 60 days, is required for oil spills of 1,000 gallons or more, or if two oil spills of any quantity occur within a 12-month period.

**Table 3-5. List of Persons/Agencies to be Notified of Spills**

<b>Name/Agency</b>	<b>Telephone Number</b>
<b><u>Sewage Treatment Plants:</u></b>	
Schofield Barracks/Wheeler Army Airfield (SB, Wheeler, Kunia, and Helemano Wastewater)	656-1330/864-0842
Sand Island Wastewater Treatment Plant (Ft. Shafter, Ft. DeRussy, TAMC, and Aliamanu wastewater)	847-8307
<b><u>IMA-Pacific Region Office, Environmental Office</u></b>	438-3080 (phone) 438-8688 (fax)
<b><u>REGULATORY AGENCIES:</u></b>	
National Emergency Response Center:	800-424-8802 (24 hours)
Environmental Protection Agency (Region IX, San Francisco)	415-947-4400 (emergency)

	response team)
U.S. Coast Guard, Marine Safety Office (Honolulu)	541-2477
State Emergency Response Commission, Hawaii Department of Health, Hazard Evaluation and Emergency Response	586-4249 / 247-2191 (after hours)
Local Emergency Planning Committees (notification required by SARA Title III)	
Hawaii	935-2785
Oahu	523-4121
Local Fire Departments (notification required by SARA Title III)	
Hawaii	961-8297
Oahu	831-7771

(v) 3.4.3.3            Underground Tank Releases

Release reporting, investigation, and confirmation requirements for underground tanks are listed in Subpart E of the EPA Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (40 CFR 280). The State of Hawaii has adopted its own UST regulations, HAR, Chapter 11-281. The Hawaii Department of Health responsible for administering the State UST program has published the document the “Technical Guidance Manual For Underground Storage Tank Closure and Release Response.” This manual describes release response, notification, and reporting requirements for releases from USTs.

(e)

(f) **3.4.4    Restoration of Spill Sites**

The ECO or IRT as applicable, will assure the proper disposal of spilled oil and other petroleum wastes. If the spilled material can be classified as a hazardous waste under RCRA, it must be disposed of in accordance with the 25<sup>th</sup> ID(L) and USARHAW Installation Hazardous Waste Management Plan.

For releases, spills, or leaks from underground tanks, initial abatement measures, site characterization, free product removal, investigations for soil and groundwater clean up, and corrective action must be in accordance with EPA Underground Tank Regulations, 40 CFR 280.60 through 280.66. The HDOH “Technical Guidance Manual For Underground Storage Tank Closure and Release Response” reflects federal requirements and includes Hawaii specific requirements. The State of Hawaii Office of Environmental Quality Control has established general soil and groundwater action levels for contaminants that are commonly associated with releases from UST systems. A listing of these action levels is provided in Table 3-6.

Remedial procedures and clean up levels for other contaminants in soils or water are governed by the National Oil and Hazardous Substances Pollution Contingency Plan under CERCLA (40 CFR 300).

**Table 3-6.    Tier 1 Action Levels for Soil and Groundwater**

<b>Contaminant</b>	<b>Groundwater (mg/L)</b>	<b>Soil (mg/Kg)</b>
Benzene	0.005	0.05
Toluene	1.0	16
Ethylbenzene	0.14	0.50
Xylenes	10	23
MTBE	0.020	0.005
Benzo(a)pyrene	0.0002	1.0
Acenaphthene	0.32	18

<b>Contaminant</b>	<b>Groundwater (mg/L)</b>	<b>Soil (mg/Kg)</b>
Fluoranthene	0.013	11
Naphthalene	0.24	41
PCE	0.005	0.29
1,1-DCE	0.046	0.47
Vinyl chloride	0.002	0.18
TCE	0.005	0.01
1,1,1-TCA	0.20	0.10
PCBs (all)	0.0005	1
Lead (total)	0.0056	400
Cadmium (total)	0.005	38
TPH-residual fuels	5,000	5,000
TPH-middle distillates	5,000	5,000
TPH-gasoline	2,000	2,000

Source: State of Hawaii "Technical Guidance Manual For Underground Storage Tank Closure and Release Response," March 2000 (Drinking Water Source Threatened), p. 5-29.

### **3.5 SPILL RESPONSE SUPPLIES**

#### **(g) 3.5.1 Response Kit for Minor Spills**

Each activity responsible for management of oil or hazardous material will maintain a spill response kit compatible with the material stored for containing and cleaning-up minor spills and for controlling major spills until the IRT can respond. The contents of the kit should be tailored to the needs of each activity (i.e., appropriate for the amount of oil, fuel or hazardous substances stored at the activity and the proximity of surface water or drains). It is recommended that a basic kit include the following:

- A supply of granular absorbent that will absorb both oil-based and water-based liquids, including oils, solvents, caustics, and acids. The granular absorbent can also be used for over packing leaking drums or other containers.
- Absorbent pillows/pads and booms
- Straight edge, non-sparking shovels (fabricated with non-ferrous metal, with a polypropylene coating on the blade, or fully fabricated from polypropylene).
- At least two empty DOT approved open-head overpack/salvage drums.
- Open head DOT approved containers of assorted sizes for packaging spill residues (such as 10 gallons and 55-gallons).
- Grounding equipment for transfer of flammable materials.

- Brooms and non-sparking dustpans.
- Polyethylene bags with ties.
- Rubber gloves, rubber aprons, rubber boots (or clothing recommended by the Safety Officer).
- Goggles.
- Absorbent rags or paper towels.

Items in the spill kit should be stored together in a well-marked and accessible location.

Typically, spill response materials are stored in yellow over pack drums and are readily accessible and identifiable by facility personnel. The unit ECO or alternate person at each activity/organization shall maintain the kit, replenishing supplies as needed. The location of the kit should be posted with the list of emergency contacts.

It is not necessary to purchase commercially available spill kits, which are costly and do not contain all the supplies necessary. Nor is it necessary to purchase specialized protective clothing (such as Tyvek suits), unless it is specifically recommended by the Installation Safety Officer; the protective clothing that is normally used in the workplace when handling hazardous substances should be sufficient for response to minor spills.

Personnel shall be trained in the use of the equipment and supplies contained in the kit.

**(h)**

**(i) 3.5.2 IRT Spill Supplies**

The DPW Environmental and the DPW Unit will maintain a supply of absorbent materials and spill clean up equipment to supplement the spill kits to be maintained by individual organizations. A back-up supply should include those items suggested above for the minor spill kits. DPW Environmental supplies are stored at Building 6054, Schofield Barracks East Range, and DPW Unit supplies will be maintained at the DPW maintenance and TAP facilities. IRT support units will provide an inventory of spill recovery material to DPW Environmental annually by October 1 of each year. The list will detail type and quantity of material on hand.

APPENDIX O. PESTICIDE INVENTORIES

PC - SB Product name	EPA Registration Number	% Active Ingredient	Pesticide list MC2 for SB05.xls Chemical name	Formulation	Pesticide Classification	lbs/gal lbs/lbs lbs/ea	unit	Shop Stock
Amdro Fire Ant Bait	73342-1	0.730%	Hydramethylinon	Bait - Granule	Insecticide	0.0073	lb	45X5000
CB-80 Extra	9444-175	4.500%	Pyrethrins - 0.5% Piperonyl Butoxide - 4.0%	Aerosol	Insecticide	0.045	lb	4005X1000
Demand CS (discontinued)	10182-361	9.700%	Lambda-cyhalothrin	Micro-encapsulated	Insecticide	0.838	gal	046000X800
Demon TC	100-1006	25.300%	Cypermethrin	Emulsifiable Concentrate	Insecticide		2 gal	1690
Gentrol IGR Concentrate (discontinued)	2724-351-50809	9.000%	Hydroprene	Liquid	Insect Growth Regulator			12 BTLX 1600
Invader HPX	9444-186	1.000%	Baygon	Aerosol	Insecticide	0.01	lb	5005X1400
Maxforce FC Roach Bait Station	64248-11	0.050%	Fipronil	Bait Station	Insecticide		ea	6000X4000
Maxforce FC Roach Bait Station	64248-12	0.030%	Fipronil	Bait Station	Insecticide		ea	
Oust	352-601	75.000%	Sulfometuron methyl	Water Dispersible Granules	Herbicide	0.75	lb	8X3000
Roundup Pro	524-475	41.000%	Glyphosate	Liquid	Herbicide		4 gal	3000
Terro Ant Killer II	149-8	5.400%	Borax	Liquid Bait	Insecticide	0.054	lb	50 PIM 10
ULD-BP-300	499-450	19.000%	Pyrethrins -3% Piperonyl Butoxide - 6% N-Octyl bicycloheptene dicarboximide - 10% Pyriproxyfen - 0.1% Pyrethrins - 0.05% N-Octyl bicycloheptene dicarboximide - 0.4% Permethrin - 0.4% Related compounds - 0.035%	Liquid	Insecticide		gal	8000
Ultracide	499-404	0.985%		Aerosol	Insecticide	0.00985	lb	10X2000
PT Wasp Freeze	499-362	0.249%	Allethrin - 0.129% Phenothrin - 0.12%	Aerosol	Insecticide	0.00249	lb	5005X1000
Contract Super-Size-Blox	12453-82	0.005%	Bromadiolone	Bait	Rodenticide	0.00005	lb	8X11000
4 The Birds II	1621-17-56	97.000%	Polybutene	Gel	Bird Repellent		0.8 lb	3100000

OPRITZ - DISOLIZEL

7 1/2 GALS

D-FORCE-

0.006

8000X8000 1400

BIRITOLIFB

700 BTL - 50 LBS

HANDI TO AND

3000 - 14000

Sept. 2007

FORT SHAFTER PEST CONTROL SHOP INVENTORY						
INSECTICIDES/BAITS						
NAME/FORMULATION	UNIT	QUANTITY	ISSUED	Total Used	Total Rec'd	End Inventory
Max Force Fine Grn, Insect bait	10 oz./btl	bottles				1
Max Force Ant Bait Stations	24/bag	bags				5
Terro-Ant Killer	2 oz/btl	bottles				4
Max Force Roach Bait Station Lg	48/bag	bags				1
Max Force Roach Bait Station Sm	72/bag	bags				1
Dead Line MP's	50 lb. Bag	bags				1
Tempo Ultra SC	8 oz/btl	bottles				3
ULD-BP-100	1gal/jug	jugs				1
Ultracide	20 oz/cn	cans				2
CB-80	17 oz/cn	cans				5
Invader HPX	14 oz/can	cans				1
Wasp A Foam	17.5 oz/can	cans				1
Wasp Freeze-PT-515	17.5 oz/can	cans				1
Ficam W	1 lb/pail	pails				2
Delta Dust	16 oz/btl	bottles				1
Permanone 10-EC	2.5 gal/jug	jugs				1
B.T.I. Brisquetts	20 /pkg	pkgs				1
Talstar G	25 lb/bag	bags				1
Merit 75-UP	2 oz/btl	bottles				1
Bird Shield	2.25 gal/jug	jugs				2

FORT SHAFTER PEST CONTROL SHOP INVENTORY						
TERMICIDES						
NAME/FORMULATION	UNIT	QUANTITY	ISSUED	Total Used	Total Rec'd.	End Inventory
Demon T.C.	1 gal/jug	jugs				1
Dragnet	1.25 gal/jug	jugs				1
RODENCIDES						
NAME/FORMULATION	UNIT	QUANTITY	ISSUED	Total Used	Total Rec'd.	End Inventory
Contrac	1 oz/blox	blox				1
Contrac	8 oz/blox	box				1
Fastrac	15 g/each	each				1
TRAPS/STATIONS						
NAME/FORMULATION	UNIT	QUANTITY	ISSUED	Total Used	Total Rec'd.	End Inventory
Protecta LP Bait Station	1 ea.	each				
Victor Snap Trap-Rats	1 ea.	each				
Victor-Snap Traps-Mice	1 ea.	each				
Stick-Em Glue Trap-Rat	48/box	box				
Stick-Em Glue Trap-Mice	96/box	box				
Trapper rat traps	1 ea.	each				
Trapper mice traps	1 ea.	each				
Trapper glue traps	1 ea.	each				
HERBICIDES/FERTILIZERS						



PESTICIDE INVENTORY

NAGORSKI

GOLF COURSE

BLDG. NO. ~~400~~ 725 FS

MAINTENANCE SUPPLIES INVENTORY

PRODUCT NAME / FORMULATION MANUFACTURER	2006				2007			
	INVENTORY DATE / QUANTITY ( TOTAL GAL., ETC. )							
	3/31	6/30	9/30	12/31	3/31	6/30	9/30	12/31
IMAGE (11.43oz)					1	1		
TRIMEC Plus (1qt)					3	8		
CONFIDENT (1gal)					1/2	1		
SENCOR 75 (5lb)					2 2/3	2		
DIMENSION (2.5gal)					1 1/4			
SURFLAN A.S.					1 1/4			
PENDULUM (GAL) (2.5gal)					1	12		
MSMA (2.5gal)					1	12		
ROUNDUP PRO DRY 1/56 lbs					1	1		
DELUX					1	1		
SYN/C 16oz					4	4		
SPEED (1gal)					1	1		
EXCEL 90 NE (1gal)					1	1		
AMORO 4.5 lbs					1	1		
TIRE MARK 2.5gal					1	3		
FOMALOT					1 1/2	2		
PRIMO MAXX					1/2	1		

Surfactant  
Surfactant  
Surfactant  
Surfactant  
Surfactant  
Surfactant

PESTICIDE INVENTORY

NAGORSKI GOLF COURSE

BLDG. NO. ~~125 FS~~ 125 FS

MAINTENANCE SUPPLIES INVENTORY

PRODUCT NAME / FORMULATION MANUFACTURER	2006				2007			
	INVENTORY DATE / QUANTITY ( TOTAL				GAL., ETC. )			
	3/31	6/30	9/30	12/31	3/31	6/30	9/30*	12/31
Fertilizer TURF SCIENCE 12-0-0					1	3		
Fertilizer THATCH LESS					2	2		
Fertilizer CPR					2	2		
Fertilizer RESPOND 3					2	2		
QUALI-PRO Chlorothalonil					2	4		
Fertilizer P-K PLUS					1	2		
Prograss					4	4		
Amway 500 2.5 gal					2	2		
SEDFE HAMMER 1.3 gal					4	4		
ILLOYAN					1	1		

PESTICIDE 1 FORY  
Hawaii area instl.

QUARTERLY PESTICIDE INVENTORY

Herbicide

PRODUCT NAME / FORMULATION MANUFACTURER ACTIVE INGREDIENT	CONT. SIZE	EPA REGIS. NUMBER	PERCENT ACTIVE INGRED.	2006				2007					
				INVENTORY DATE / QUANTITY ( TOTAL LBS., GAL., ETC. )									
				3/31	6/30	9/30	12/31	3/31	6/30	9/30	12/31		
ASULOX	2.5GA	264-447	36.2%	1 GAL	1 GAL	1 GAL	1 GAL	1 GAL	1 GAL				
BARLEAD 65WS	5.1b	55947-143	65%	3.1b	3.1b	3.1b	3.1b	3.1b	3.1b				
BLADE	2oz	74477-1-2217	60%	4 oz	-0-	2.5oz	1.75oz	6oz	1oz				
CONFORT	1 GAL	62719-92	45.1%	32oz	32oz	-0-	0	0	0				
DIMENSION ULTRA 40WP	5oz WSP	62719-445	40%	40oz	80oz	125oz	95oz	55oz	15oz				
DIREX HL	2.5GA	1812-257	40%	32oz	-0-	-0-	0	0	0				
FINALE	2.5GAL	432-1229	11.33%	2.5GAL	1.5 GAL	1.5 GAL	1.5 GAL	1.5 GAL	5.5 GAL				
FUSILADE	1 GAL	24704-MS-1	13%	40oz	40oz	40oz	40oz	40oz	40oz				
IMAGE 700B	11.4oz	241-319	70%	22.86	22.86oz	22.86oz	22.86oz	34.29oz	0				
KEEP	3.1b	707-159	51%	3.1b	3.1b	3.1b	3.1b	3.1b	3.1b				
MAYNAGE	1 1/2 oz	524-465	75%	2oz	1 1/2 oz	1 1/2 oz	1oz	1oz	1oz				
MOUNTMENT	2.5oz	100-1134	75%	55oz	65oz	10oz	10oz	10oz	10oz				
MYSTIC 6 PLUS	2.5 GAL	12713-42	47.6%	5 GAL	3 GAL	-0-	6 GAL	12 GAL	11.5 GAL				
PRIMO MAXX	1 GAL	100-937	11.3%	80oz	64oz	1 GAL	1.5 GAL	2 GAL	48oz				
REVOLVER	1 GAL	432-1266	23.4%	64oz	64oz	-0-	96oz	0	0				
ROUNDUP PRO	2.5 GAL	524-475	41%	-0-	4.5 GAL	3 GAL	3.5 GAL	15 GAL	160oz				
ROUNDUP PRO DRY	23.25 lbs.	524-505	71.4%	7.5lb	-0-	-0-	0	0	0				
SENCOE	5.1b	3125-326	75%	7.1b	5.1b	8.1b	7.1b	13.1b	8.1b				

PESTICIDE 1 FORY  
Hawaii area instl.

QUARTERLY PESTICIDE INVENTORY

Herbicide

PRODUCT NAME / FORMULATION MANUFACTURER ACTIVE INGREDIENT	CONT. SIZE	EPA REGIS. NUMBER	PERCENT ACTIVE INGRED.	2006				2007					
				INVENTORY DATE / QUANTITY ( TOTAL LBS., GAL., ETC. )									
				3/31	6/30	9/30	12/31	3/31	6/30	9/30	12/31		
SWAPSHOT 2.5 TG	50.1b	62719-175	2.5%	30.1b	30.1bs	30.1b	30.1bs	30.1b	30.1b				
SPEEDZONE	1 GAL	2217-835	14.36%	32oz	32oz	-0-	0	0	0				
TRANXIT GTA	3oz	1812-449	25%	3oz	3oz	3oz	0	0	0				
TRIMEC PLUS	1 GAL	2217-709	25.22%	21 GAL	18 GAL	14.5 GAL	11.5 GAL	4 GAL	7 GAL				
RONSTAR 50 WSP	1.1lb wsp	432-893	50%	0	0	0	8x 1lb wsp	10 lbs	10 lbs				
CERTAINTY	1.25 GAL	504-634	75%	0	0	0	0	3.75 GAL	3.75 GAL				
AKS 200AL	1 GAL	241-346	28.7%	0	0	0	0	16oz	16oz				

PESTICIDE 1 FORY  
Hawaii area insct.

QUARTERLY PESTICIDE INVENTORY

FUNGICIDE

PRODUCT NAME / FORMULATION MANUFACTURER ACTIVE INGREDIENT	CONT. SIZE	EPA REGIS. NUMBER	PERCENT ACTIVE INGRED.	20 06				20 07					
				INVENTORY DATE / QUANTITY ( TOTAL LBS., GAL., ETC. )									
				3/31	6/30	9/30	12/31	3/31	6/30	9/30	12/31		
CHYPERO 266T	2.5 gal	432-888	23.3%	10 gal	5 gal	5 gal	5 gal	5 gal	5 gal				
DACONIL ULTREX	5 lb	50534- 200-100	82.5%	40 lbs	-0-	-0-	40 lb	40 lb	40 lb				
Ford	4 lb	707-87	80%	6 lbs	6 lbs	6 lbs	6 lbs	0	0				
FORD POW	5 lb WSP	62719-388	80%	30 lbs	-0-	-0-	0	6 lbs					
HERITAGE	1 lb	100-1093	50%	3 lbs	-0-	-0-	0	0	0				
INSIGNIA	2.4 lb	7969-184	20%	0	7.2 lbs	-0-	0	0	0				
PROSTAR 70WP	1.06 WSP	432-1223	70%	0	-0-	-0-	0	0	0				
SUBDUE MAXX	1 qt	100-796	22%	64 oz	-0-	-0-	96 oz	96 oz	54 lb				
CHLOROTHALONIL DF	5 lbs	72167-25- 73220	82.5%	0	0	0	0	35 lbs	35 lbs				

PESTICIDE 1 FORY  
Hawaii area insct.

QUARTERLY PESTICIDE INVENTORY

INSECTICIDE

PRODUCT NAME / FORMULATION MANUFACTURER ACTIVE INGREDIENT	CONT. SIZE	EPA REGIS. NUMBER	PERCENT ACTIVE INGRED.	20 06				20 07					
				INVENTORY DATE / QUANTITY ( TOTAL LBS., GAL., ETC. )									
				3/31	6/30	9/30	12/31	3/31	6/30	9/30	12/31		
CARBARYL HL	2.5 gal	34704-447	43%	3 gal	3 gal	3 gal	3 gal	3 gal	3 gal				
DEADLINE T.O.	50 lb	64864-35	4%	30 lb	30 lbs	30 lb	30 lb	30 lb	30 lb				
TALSTAR GC	1 gal	279-3156	7.9%	64 oz	64 oz	64 oz	64 oz	64 oz	64 oz				
TALSTAR PL	25 lbs	279-3166	0.2%	25 lb	25 lbs	25 lb	25 lb	25 lb	25 lb				
VENDOEX SOWP	1 lb	352-480	50%	1 lb	1 lb	1 lb	1 lb	1 lb	1 lb				
WASP FREEZE	17.5 oz	499-362	0.24%	7 cans	5 cans	6 cans	6 cans	3 cans	3 cans				

APPENDIX P. PEST MANAGEMENT PROGRAM FOR KILAUEA MILITARY CAMP

Pest control operations at Kilauea Military Camp (KMC) on the island of Hawaii requires less than 0.5 man-years. An individual pest management plan is not required under DoDI 4150.7.

Pest control operations at KMC is performed as additional duties by one Maintenance Worker and one Gardener. The workload consists of control of cockroach and other crawling pests, rodent control, and weed control.

At present, german cockroach control in the kitchen of the dining facility presents the most difficult task for the pest controller. Any pesticide use at KMC must follow the guidelines set by the National Parks Service (NPS), thus the materials available for use is limited.

Cockroach control in the dining facility kitchen shall consist of the following steps:

1. Identification of cockroach harborage areas through visual surveys and the use of sticky traps. Surveys are to be conducted monthly. Results from sticky trap surveys are forwarded to the installation entomologist.

2. Treatment of harborage areas with an appropriate boric acid based pesticide. Pesticides shall be applied according to label direction.

3. Elimination of harborage sites by:

- a. removing all clutter from walls - including posters, signs, etc.

- b. sealing all cracks and crevices in walls, doors, windows, etc., with an appropriate caulking material or expanding polyurethane foam.

4. Prevention of further cockroach population buildup through the use of boric acid or hydramethylnon baits. Bait stations will be replaced at least every three months to prevent empty stations from being used as harborage. If cockroach populations are high, bait stations may have to be replaced monthly.

Pest management policies and guidelines for the National Parks System are addressed in the Department of Interior NPS's Management Policies 2006, The Guide to Managing the National Park System, at [http://www.nps.gov/policy/mp/policies.html#\\_Toc157232684](http://www.nps.gov/policy/mp/policies.html#_Toc157232684) and in the NPS's Integrated Pest Management Manual at <http://www.nature.nps.gov/biology/ipm/manual/ipmmanual.cfm>.

APPENDIX Q. ENDANGERED/THREATENED SPECIES LIST

Table 1 Federally Listed species within the Oahu Installation Action Areas

SBMR= Schofield Barracks Military Reservation, MMR= Makua Military Reservation, SBER= Schofield Barracks East Range, KLOA= Kawaiiloa Training Area, KTA= Kahuku Training Area, DMR= Dillingham Military Reservation

Scientific Name	Common Name	Status	Plant or Animal	Installations
<i>Abutilon sandwicense</i>		E	Plant	SBMR
<i>Achatinella apexfulva</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA
<i>Achatinella bulimoides</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA
<i>Achatinella byronii/ decipiens</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA, SBER
<i>Achatinella curta</i>	<i>Pupu Kuahiwi</i>	E	Snail	KTA, KLOA
<i>Achatinella lila</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA
<i>Achatinella livida</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA
<i>Achatinella mustelina</i>	<i>Pupu Kuahiwi</i>	E	Snail	MMR
<i>Achatinella pulcherima</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA
<i>Achatinella sowerbyana</i>	<i>Pupu Kuahiwi</i>	E	Snail	KLOA, SBER, KTA
<i>Alectryon macrococcus</i> var. <i>macrococcus</i>	`Ala `alahua, mahoe	E	Plant	MMR, SBMR
<i>Alsinidendron obovatum</i>		E	Plant	MMR
<i>Alsinidendron trinerve</i>		E	Plant	SBMR
<i>Bonamia menziesii</i>		E	Plant	MMR
<i>Cenchrus agrimonioides</i> var. <i>agrimonioides</i>	Kamanomano	E	Plant	SBMR, MMR
<i>Chamaesyce celastroides</i> var. <i>kaenana</i>	`Akoko	E	Plant	MMR
<i>Chamaesyce herbstii</i>	`Akoko	E	Plant	MMR
<i>Chamaesyce rockii</i>	`Akoko	E	Plant	KLOA, SBER
<i>Chasiempis sandwichensis ibidis</i>	Oahu `Elepaio	E	Bird	MMR, SBMR,

<i>Ctenitis squamigera</i>	Pauoa	E	Plant	MMR, SBMR
<i>Cyanea acuminata</i>	Haha	E	Plant	KLOA, SBER, SBMR
<i>Cyanea crispa</i>	Haha	E	Plant	KLOA
<i>Cyanea dentata</i>	Haha	E	Plant	MMR
<i>Cyanea grimesiana</i> <i>spp. obatae</i>	Haha	E	Plant	SBMR, MMR
<i>Cyanea humboldtiana</i>	Haha	E	Plant	KLOA
<i>Cyanea koolauensis</i>	Haha	E	Plant	SBER, KTA, KLOA
<i>Cyanea longiflora</i>	Haha	E	Plant	MMR
<i>Cyanea st.-johnii</i>	Haha	E	Plant	KLOA, SBER
<i>Cyanea superba</i> <i>spp. superba</i>	Haha	E	Plant	MMR
<i>Cyperus trachysanthos</i>		E	Plant	DMR
<i>Cyrtandra dentata</i>	Ha`iwale	E	Plant	KLOA, MMR
<i>Cyrtandra subumbellata</i>	Ha`iwale	E	Plant	SBER
<i>Cyrtandra viridiflora</i>	Ha`iwale	E	Plant	KLOA, SBER
<i>Delissea subcordata</i>	Haha	E	Plant	MMR, SBMR
<i>Diellia falcata</i>		E	Plant	MMR, SBMR
<i>Dubautia herbstobatae</i>	Na`ena`e	E	Plant	MMR
<i>Eugenia koolauensis</i>	Nioi	E	Plant	KTA
<i>Euphorbia haeleleana</i>		E	Plant	MMR
<i>Flueggea neowawraea</i>	Mehamehame	E	Plant	MMR, SBMR
<i>Gardenia mannii</i>	Nanu, na`u	E	Plant	KTA, KLOA, SBER, SBMR
<i>Hedyotis degeneri degeneri</i>		E	Plant	MMR

<i>Hedyotis parvula</i>		E	Plant	MMR
<i>Hesperomannia arborescens</i>		E	Plant	KLOA, SBER, SBMR
<i>Hesperomannia arbuscula</i>		E	Plant	MMR
<i>Hibiscus brackenridgei</i> spp. <i>mokuleianus</i>	Ma`o hau hele	E	Plant	DMR, MMR
<i>Isodendron longifolium</i>	Aupaka	E	Plant	SBMR, SBER
<i>Labordia cyrtandrae</i>	Kamakahala	E	Plant	SBMR
<i>Lasiurus cinereus semotus</i>	`Ope`ape`a	E	Bat	MMR, KLOA, SBER
<i>Lepidium arbuscula</i>	`Anaunau	E	Plant	MMR, SBMR
<i>Lipochaeta tenuifolia</i>	Nehe	E	Plant	MMR
<i>Lobelia gaudichaudii</i> spp. <i>koolauensis</i>	Haha	E	Plant	SBER
<i>Lobelia niihauensis</i>	Haha	E	Plant	MMR, SBMR
<i>Lobelia oahuensis</i>	Haha	E	Plant	KLOA, MMR, SBER, SBMR
<i>Melicope lydgatei</i>	Alani	E	Plant	KLOA
<i>Myrsine juddii</i>	Kolea	E	Plant	KLOA
<i>Neraudia angulata</i>	Ma`aloa	E	Plant	MMR, SBMR
<i>Nototrichium humile</i>	Kulu`l	E	Plant	MMR
<i>Phlegmariarus nutans</i>		E	Plant	KLOA, SBER
<i>Phyllostegia hirsuta</i>		E	Plant	KLOA, SBER, SBMR
<i>Phyllostegia kaalaensis</i>		E	Plant	SBMR, MMR
<i>Phyllostegia mollis</i>		E	Plant	SBMR
<i>Phyllostegia parviflora</i>		E	Plant	KLOA
<i>Plantago princeps princeps</i>	Ale	E	Plant	SBMR, MMR

<i>Pritchardia kaalae</i>	Loulu	E	Plant	MMR, SBMR
<i>Pteris lidgatei</i>		E	Plant	KLOA, SBER
<i>Sanicula mariversa</i>		E	Plant	MMR
<i>Sanicula purpurea</i>		E	Plant	KLOA, SBER
<i>Schiedea hookeri</i>		E	Plant	MMR, SBMR
<i>Schiedea kaalae</i>		E	Plant	MMR, SBMR
<i>Schiedea kealiae</i>		E	Plant	DMR
<i>Schiedea nuttallii</i> <i>var. nuttallii</i>		E	Plant	MMR, SBMR
<i>Silene lanceolata</i>		E	Plant	MMR
<i>Spermolepis hawaiiensis</i>		E	Plant	MMR
<i>Stenogyne kanehoena</i>		E	Plant	SBMR
<i>Tetramolopium filiforme</i>		E	Plant	MMR
<i>Tetraplasandra gymnocarpa</i>	`Ohe`ohe	E	Plant	KLOA,KTA, SBER
<i>Urera kaalae</i>	Opuhe	E	Plant	SBMR
<i>Viola chamissoniana</i> spp. <i>chamissoniana</i>	Pamakani	E	Plant	MMR, SBMR
<i>Viola oahuensis</i>		E	Plant	KLOA, SBER

Table 2. Federally listed species within the PTA action area.

Scientific Name	Common Name	Status	Plant or Animal
<i>Asplenium fragile</i> var. <i>insulare</i> [a.k.a. <i>Asplenium rhomboideum</i> ]	fragile fern	E	Plant
<i>Haplostachys haplostachya</i>	honohono,	E	Plant
<i>Hedyotis coriacea</i>	kio`ele	E	Plant
<i>Isodendrion hosakae</i>	Aupaka	E	Plant
<i>Lipochaeta venosa</i>	Nehe	E	Plant
<i>Neraudia ovata</i>	ma`aloa,	E	Plant
<i>Portulaca sclerocarpa</i>	`ihi	E	Plant
<i>Silene hawaiiensis</i>	Hawaiian catchfly	T	Plant
<i>Silene lanceolata</i>	lanceleaf catchfly	E	Plant
<i>Solanum incompletum</i>	popolu	E	Plant
<i>Spermolepis hawaiiensis</i>	Hawaiian parsley	E	Plant
<i>Stenogyne angustifolia</i>	creeping mint	E	Plant
<i>Tetramolopium arenarium</i> var. <i>arenarium</i>	None	E	Plant
<i>Vigna o-wahuensis</i>	Cowpea	E	Plant
<i>Zanthoxylum hawaiiense</i>	a`e	E	Plant
<i>Branta sanvicensis</i>	Nene	E	Bird
<i>Buteo solitarius</i>	`Io,	E	Bird
<i>Hemignathus munroi</i>	`Akiapola`au	E	Bird
<i>Loxioides bailleui</i>	Palila	E	Bird
<i>Pterodroma phaeopygia sandwichensis</i>	Ua`u	E	Bird
<i>Lasiurus cinereus semotus</i>	`ope`ape`a	E	Bat

APPENDIX R. CERTIFIED PESTICIDE APPLICATOR LIST

**EXPIRATION**

<b>DATE</b>	<b>NAME</b>	<b>CERT. NO.</b>	<b>CATEGORIES</b>	<b>ORGANIZATION</b>
10/31/2007	MILARII, ANTHONY	A-168-91-1004	3,5,6,7,8	USAG-HI-DPW-FS
10/31/2008	WILEY, JESS	A-189-91-1005	3,5,6,7,8	USAG-HI-DPW-FS
2/29/2008	DUMLAO, ROBERT	NB-005-05	3,5,6,7,8	USAG-HI-DPW-SB
10/31/2008	SOUZA, DONN JAY	A-125-96-1005	3,5,6,7,8	USAG-HI-DPW-SB
10/31/2008	WHITE, BRIAN	A-128-96-1005	3,5,6,7,8	USAG-HI-DPW-SB
10/31/2008	HAMADA, GUY	NP-660-94-1005	3,5,6,7,8	USAG-HI-DPW-SB
10/31/2009	PEREIRA, VICTOR	A-015-88-1006	3,5,6,7,8	USAG-HI-DPW-SB
10/31/2008	ROBERTS-KAUKA, TOMMY	A-262-91-1005	3,5,6,7,8	USAG-HI-DPW-HI
12/8/2007	FYRBERG, SPRINGER	St. of Haw A14317	2	USAG-HI-DPW-ENV
1/2/2008	LASHA-LYNN SALVOSA	St. of Haw A14346	2	USAG-HI-DPW-ENV
4/28/2008	BURT, MATTHEW	St. of Haw A14406	2	USAG-HI-DPW-ENV
10/31/2008	KAWELO, KAPUA	A-113-96-1005	2,3,5,6,7,8	USAG-HI-DPW-ENV
10/31/2008	YAMAMOTO, ROBIN	A-130-96-1005	2,3,5,6,7,8	USAG-HI-DPW-ENV
3/8/2009	KEIR, MATT	St. of Haw A13646	2	USAG-HI-DPW-ENV
5/29/2011	MORGAN, LUCAS	St. of Haw A14909	2	USAG-HI-DPW-ENV
6/4/2011	COSTELLO, VINCENT	St. of Haw A14012	2	USAG-HI-DPW-ENV
10/13/2007	KAWAKAMI, KATHY	St. of Haw H71884	2	USAG-HI-PTA-ENV
3/1/2009	EVANS, STEVE	St. of Haw H71967	2	USAG-HI-PTA-ENV
4/18/2009	TUCKER, BRIAN	St. of Haw H71971	2	USAG-HI-PTA-ENV
3/20/2010	BRESELL, MICHAEL	St. of Haw H72037	2	USAG-HI-PTA-ENV
7/28/2010	MAHUKA, BRADDEN	St. of Haw H72054	2	USAG-HI-PTA-ENV
7/28/2010	MORALES, ROSS	St. of Haw H72055	2	USAG-HI-PTA-ENV
4/23/2011	MONTGOMERY, MARK	St. of Haw H72101D	2	USAG-HI-PTA-ENV
11/5/2011	JABOBS, JEFFERSON	St. of Haw H72098	2	USAG-HI-PTA-ENV
11/5/2011	SUDDUTH, TIANA	St. of Haw H72099	2	USAG-HI-PTA-ENV
11/5/2011	FOLEY, ERIN	St. of Haw H72100	2	USAG-HI-PTA-ENV
12/10/2011	RANDALL, JENNIFER	St. of Haw H72102	2	USAG-HI-PTA-ENV
12/10/2011	KNOX, SARAH	St. of Haw H72103	2	USAG-HI-PTA-ENV
10/31/2008	KALANI, LOUIS	A-112-96-1005	3,5,6,7	USAG-HI-DPW-SCIB
10/31/2008	CHANG, NORMAN	A-150-88-1005	3,5,6,7,8	USAG-HI-DPW-SCIB
10/31/2008	CHING, PATRICK	A-155-91-1005	3,5,6	USAG-HI-DPW-TSB
10/31/2008	UFANO, PEDRO	A-126-96-1005	3,5,6	USAG-HI-DCA
10/31/2008	TAKASHIGE, STEPHEN	A-185-91-1005	3,5,6	USAG-HI-DCA
10/31/2009	KAAL, ALFRED	A-091-94-1006	3,5,6	USAG-HI-DCA
10/31/2009	LILLIE, ROBERT	A-190-94-1006	3,5,6	USAG-HI-DCA
10/31/2009	MILLS, JIMMY K.	NB-022-98-1006	3,5,6	USAG-HI-DPTMSEC
10/31/2007	GERONIMO, CRISPULO	NB-025-02-1004	3.5.6	USAG-HI-DPTMSEC
10/31/2007	IMAOKA, GLENN T.	NB-026-02-1004	3.5.6	USAG-HI-DPTMSEC
10/31/2007	KALAI, EDWIN S.	NB-027-02-1004	3.5.6	USAG-HI-DPTMSEC

APPENDIX S. PEST CONTROL SHOPS VEHICLE AND EQUIPMENT INVENTORY

## PEST CONTROL SHOPS VEHICLE AND EQUIPMENT INVENTORY

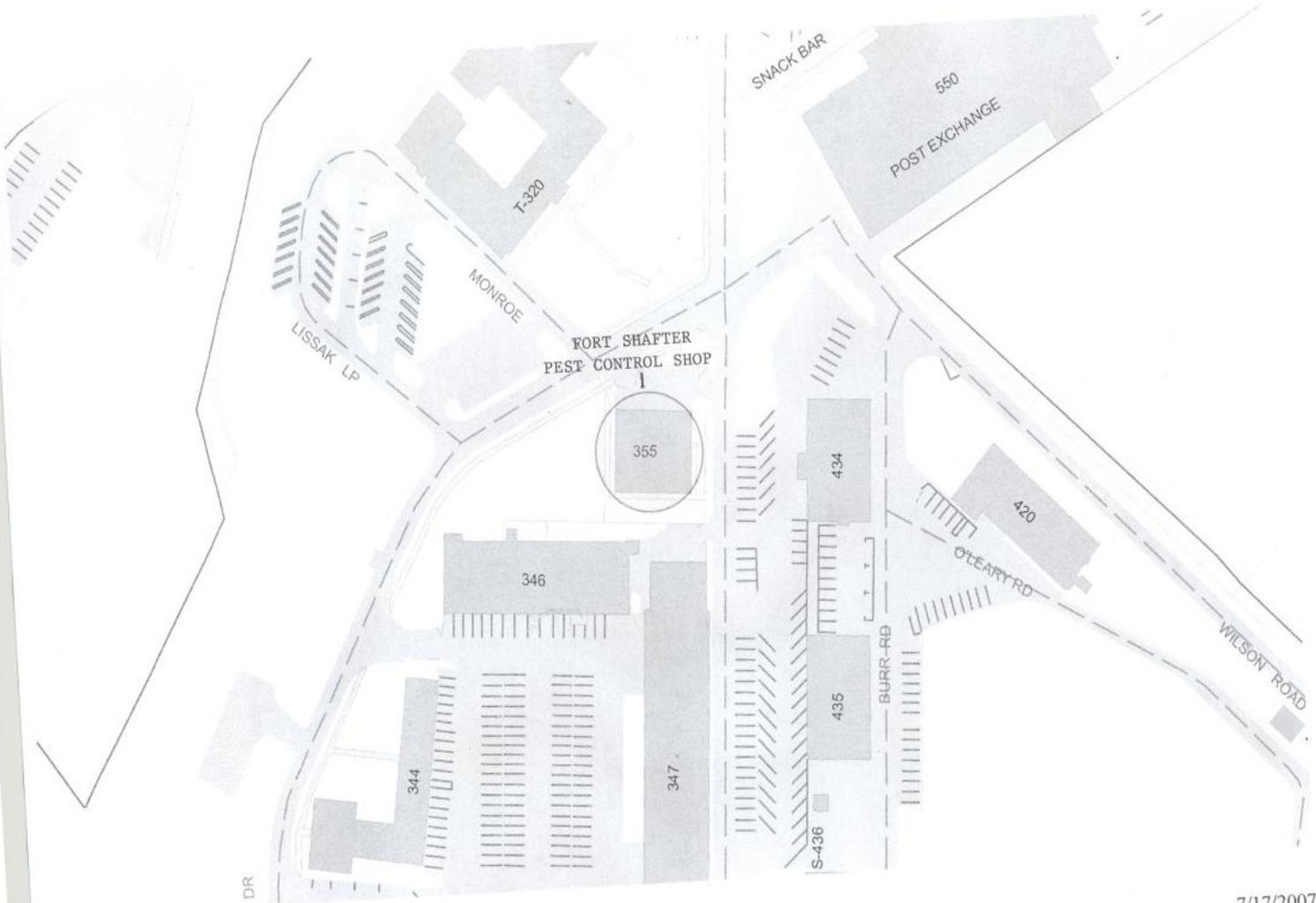
### Schofield Barracks

Truck, 3/4 Ton (Dodge)	6 ea.
Truck, 4x4 Ton (Chevy)	1 ea.
ULV Fog Generator, Hand held	2 ea.
ULV Fog Generator, Hand held (Thermo)	2 ea.
ULV Fog Generator, Cart mtd	1 ea.
Sprayer, 200 gal	2 ea.
Sprayer, 100 gal	4 ea.
Sprayer, 2 gal, Hand held	2 ea.
Sprayer, 1 gal, Hand held	8 ea.
Sprayer, 2 gal, Hand held (plastic)	4 ea.
Hammer Drill, 1-1/2" (Skil Macho)	7 ea.
Drill, Hand held (cordless)	1 ea.

### Fort Shafter

Truck, 3/4 Ton	3 ea.
ULV For Generator, Hand held	3 ea.
Sprayer, 100 gal, Skd mtd	2 ea.
Sprayer, 150 gal, Trailer mtd	1 ea.
Sprayer, 2 gal, Hand held	6 ea.
Sprayer, 1 gal, Hand held	6 ea.
Chemical Injector, Sub-slab	7 ea.
Hammer Drill, Black & Decker (Macho II)	2 ea.
Drill, Hand held	1 ea.
Ladder, 12' Extension	1 ea.
Ladder, 12' Step	1 ea.
Ladder, 8' Step	2 ea.
Ladder, 6' Step	4 ea.
Gas Mask	6 ea.
Grd Fault Circuit Breaker	2 ea.
Grinder	1 ea.
Vise	1 ea.
Flowmeter	2 ea.
Aneomometer	1 ea.

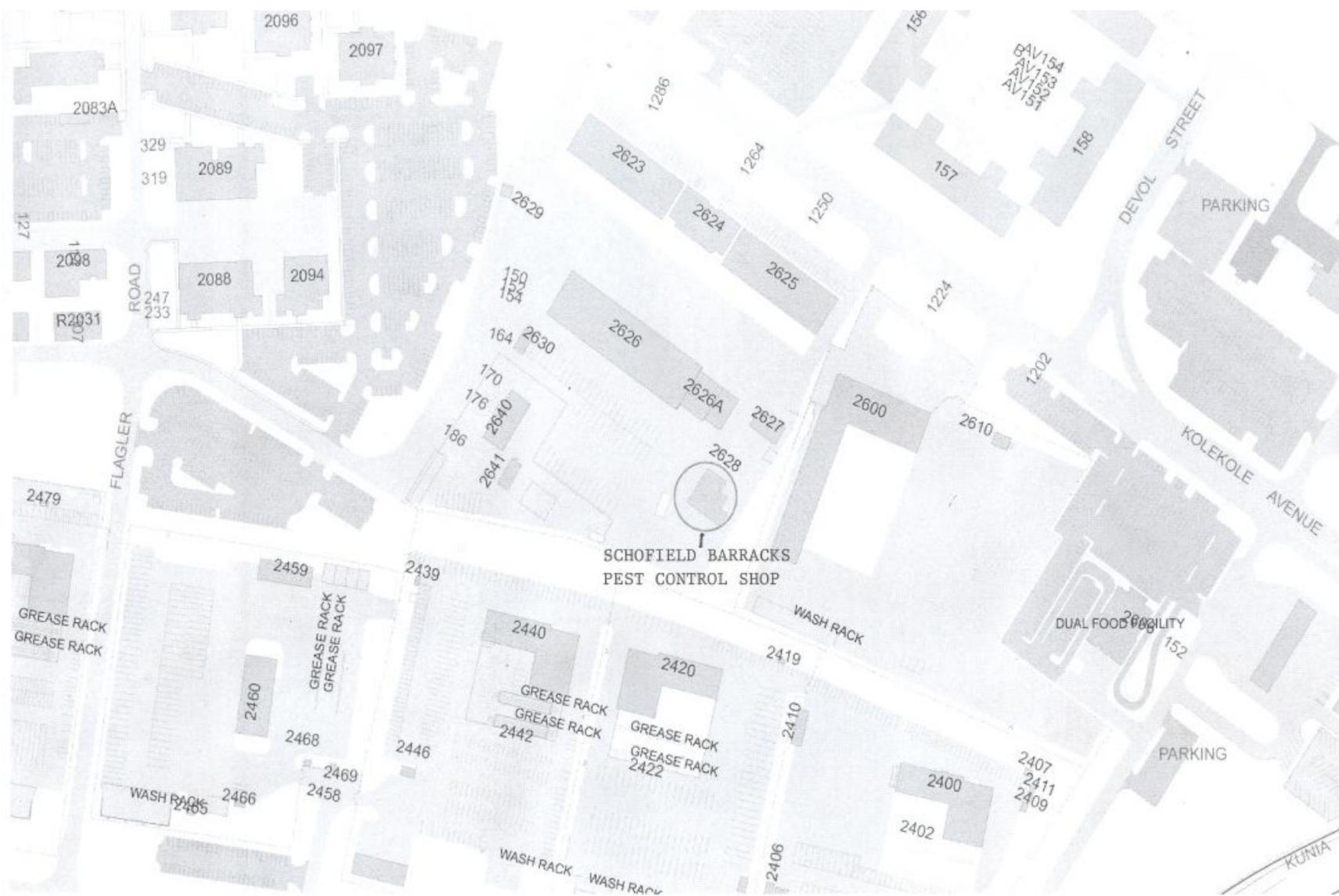
APPENDIX T. PESTICIDE STORAGE LOCATIONS

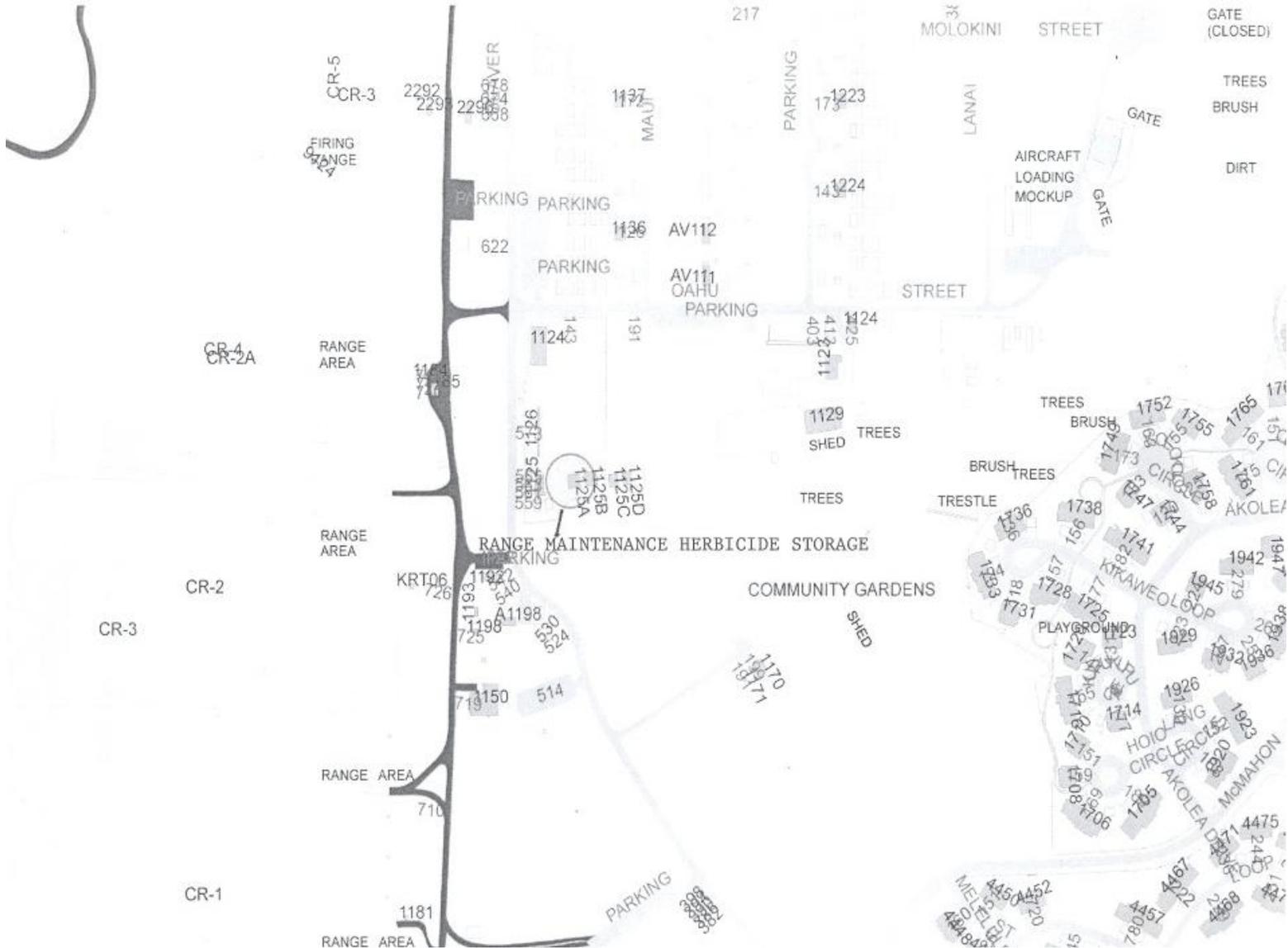


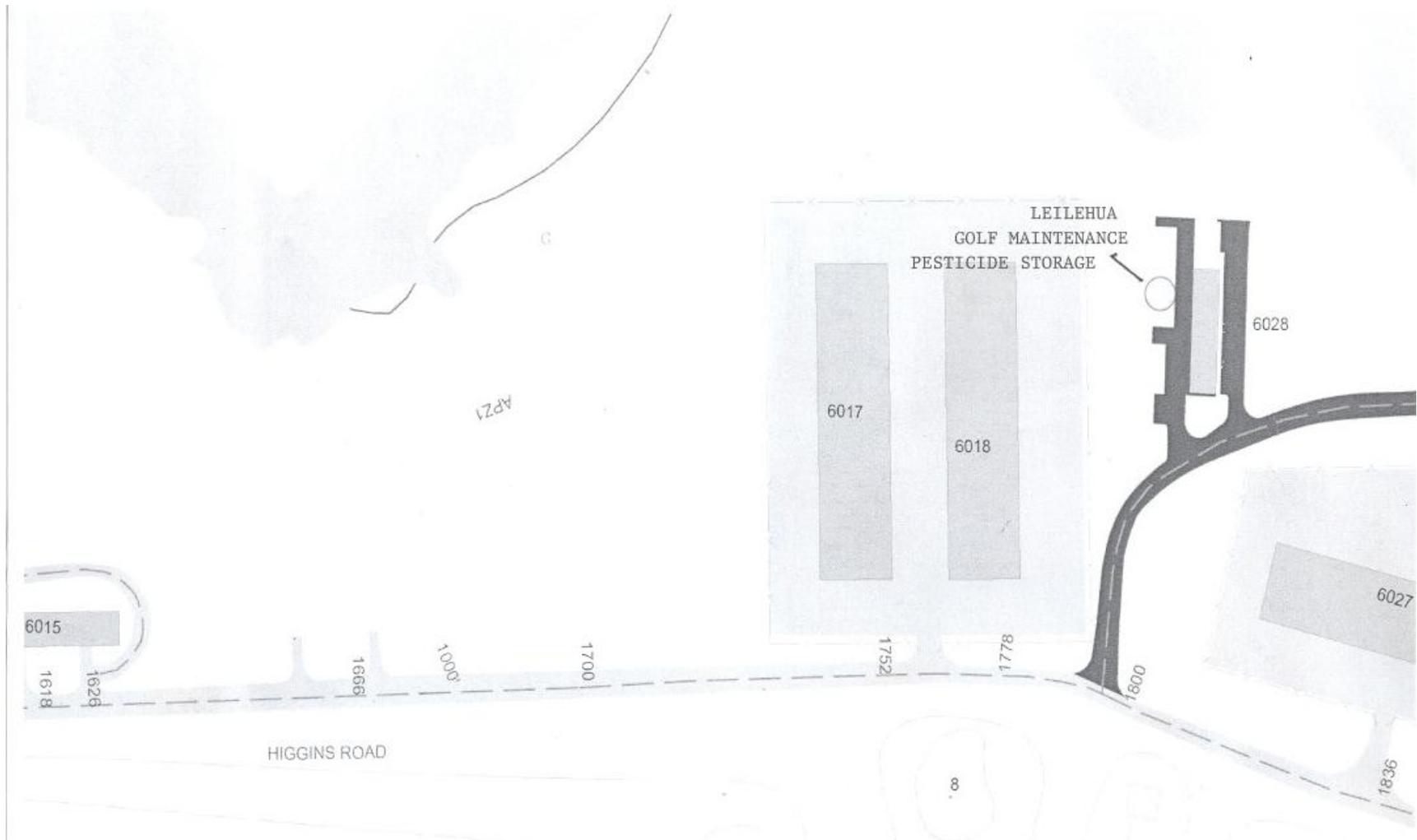
7/17/2007

<https://usaghi-gis.hi.pac.army.mil/ArmyDPWebMap/FS/system/loadmap.asp>









APPENDIX U. FAMILY HOUSING PEST MANAGEMENT CONTRACT



*ResidentsFirst™*

**Army Hawaii Family Housing**

**SERVICE AGREEMENT**

**SUBJECT:** **PEST CONTROL**

**PRINCIPAL:** Army Hawaii Family Housing LLC  
215 Duck Road, Bldg. 950  
Schofield Barracks, Hawaii 96857

**CONTACT:** Mark Crabtree, Director of Maintenance

**PHONE NUMBER:** (808) 275-3189

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**SERVICE PROVIDER:** ECOLAB, Inc.

**ADDRESS:** 1600 Kapiolani Blvd, #524  
Honolulu, HI 96814

**CONTACT:** David Lau, District Manager

**PHONE NUMBER:** (808) 325-1671

**E-MAIL:** [david.lau@ecolab.com](mailto:david.lau@ecolab.com)

This agreement is made and entered into on the 1<sup>st</sup> day of March, 2007 by and between Army Hawaii Family Housing hereinafter referred to as "AHFH" and Ecolab, Inc., herein after referred to as "Service Provider" doing business at 1600 Kapiolani Blvd #524, Honolulu, HI 96814. Army Hawaii Family Housing and Service Provider do hereby agree as follows:

NOW, THEREFORE, in consideration of the covenants, representations and warranties contained herein and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

- 1. Scope of Services:** Service Provider agrees to perform all of the services required by AHFH for the Premises (hereafter defined in Paragraph 2) as such services are described and incorporated herein by this reference (the "Services" and the Statement of Work). Service Provider shall diligently perform the Services in a first class manner, to the satisfaction of AHFH, and in compliance with all applicable rules, regulations, ordinances, codes, laws, and court orders or hereafter in effect. Service Provider shall obtain and furnish, as appropriate, all permits applicable, standards of care, licenses, equipment, tools, materials, labor and supervision to perform the Services in a careful, workmanlike, first class and lawful manner. Service Provider shall take all appropriate precautions to protect Service Provider's and AHFH's employees, contractors, agents and representatives, and tenants of the Premises, invitees, the general public, any private or public property and the environment. AHFH, may at any time, in its sole discretion, request a change in the scope of the Services. Any such change shall only be effective if both parties execute a written amendment to this Agreement.

Service Provider agrees to perform the services specified in exhibit "A" Statement of Work and those included in this agreement.

All activities other than emergencies will occur between 8:00 AM and 5:00 PM. Activities other than emergencies will not be permitted outside of these hours.

Service Provider vehicles shall be properly maintained, painted, in good working order, and in good appearance. Adequate spill kits will be available at all times for any loss of fluids. Spills are the Service Provider's responsibility to immediately clean up according to state and federal rules and guidelines.

All Service Provider employees shall be professionally uniformed with appropriate company and personal identification.

- 2. Description of the Premises:** Service Provider agrees to perform the Services for the following communities: AMR East, AMR Rim, AMR West, Canby, Ft. Shafter, Helemano (HMR), Hamilton, Kalakaua, Leader Field, Lyman, Red Hill, Santa Fe, Solomon, Tripler, and Wheeler, part of Army Hawaii Family Housing, (the "Premises").
- 3. Term:** The term of this Agreement shall consist of one base year with two option years.

Base period:	March 1, 2007 through June 30, 2007
Option 1 period:	July 1, 2007 though June 30, 2008
Option 2 period:	July 1, 2008 though June 30, 2009

This Service Agreement shall commence on 1 January 2007 and terminate on 30 June 2007, at 5:00 p.m., HST, unless earlier terminated as set forth herein. This Agreement may be terminated by either party at any time during the term of this Agreement upon the delivery to the other party of thirty (30) calendar day's written notice. Notwithstanding the foregoing, if Service Provider shall persistently fail to perform the Services in a manner satisfactory to AHFH, this Agreement may, at AHFH's option, be terminated upon AHFH's delivery to

Service Provider written notice of termination (the "Termination Notice"). Upon the exercise of the right of termination under this paragraph, Service Provider shall not be entitled to any sums or compensation in excess of those accrued as of the date specified in said Termination Notice (the "Termination Date"). AHFH may exercise the option to terminate under this paragraph at any time. If such Termination Notice results in a Termination Date prior to the end of a compensation period, then Service Provider shall only be entitled to its pro rata share of the compensation. In no event shall Service Provider be entitled to receive compensation for expenses incurred by Service Provider in excess of the compensation accruing in said thirty (30) day notice period. Upon the Termination Notice, this Agreement shall remain in full force and effect through and including the Termination Date; thereafter, all obligations of the parties shall cease under this Agreement.

4. **Compensation:** Total compensation for performing the Scope of Work for the term of this Service Agreement, shall be at the prices set forth below:

**Schedule Rates:**

**Interior/Exterior Rodent and Pest Control Program**

*(Includes urgent and routine service call requirements)*

<b>AMR East</b>	<b>= \$ 4,725.60 per month</b>
<b>AMR Rim</b>	<b>= \$ 3,696.00 per month</b>
<b>AMR West</b>	<b>= \$ 3,643.20 per month</b>
<b>Canby</b>	<b>= \$ 6,177.60 per month</b>
<b>Ft Shafter</b>	<b>= \$ 4,989.60 per month</b>
<b>Helemano</b>	<b>= \$ 5,649.60 per month</b>
<b>Hamilton</b>	<b>= \$ 2,824.80 per month</b>
<b>Kalakaua</b>	<b>= \$ 2,349.60 per month</b>
<b>Leader Field</b>	<b>= \$ 818.40 per month</b>
<b>Lyman</b>	<b>= \$ 2,428.80 per month</b>
<b>Red Hill</b>	<b>= \$ 2,455.20 per month</b>
<b>Santa Fe</b>	<b>= \$ 4,672.80 per month</b>
<b>Solomon</b>	<b>= \$ 3,801.60 per month</b>

**Tripler** = \$ 1,056.00 per month

**Wheeler** = \$ 6,177.60 per month

**Indefinite Quantity Work (to be ordered as necessary):**

**Whitmire Advance Termite Bait System:**

**Installation** = \$ 5.60 per linear ft  
*(Includes monitoring for 1 year from installation)*

**Monitoring of existing systems** = \$ 3.70 per linear ft

**Concrete Coring for a bait station** = \$ 10.00 per unit

**Tent Fumigation:** = \$ 45.98 per unit (1,000 cubic ft)  
*(Drywood Termites)*

**Ground Treatment:** = \$ 5.52 per linear ft  
*(Subterranean Termites)*

**Wood Infestation Inspection:** = \$ 200.00 per unit

**Carcass Disposal/Odor Abatement:** = \$ 90.00 Each

**Flea Treatment:** = \$ 98.00 per unit

**Feral Cat Control:** = \$ 136.00 Each

**Note: Rates include Hawaii State General Excise Tax.**

Payment will be made by AHFH within thirty (30) days of AHFH's receipt of an invoice for work performed during the preceding month. Service Provider shall deliver invoices to AHFH twice a month unless otherwise specified by AHFH. The invoices shall be addressed to AHFH with a detailed description of the work performed, including the date(s) of performance and service/work order number. Any additional services performed by Service Provider without the prior written consent of the AHFH Property Manager will be deemed to be basic services and Service Provider will not be entitled to any compensation for such additional services. Payment of such additional services shall not be construed as a material change to the contract as a whole.

5. **Invoicing:** Provide an invoice for work performance from the 1<sup>st</sup> day through and including the 15<sup>th</sup> day of each month and the 16<sup>th</sup> day to the last day of each month (inclusive). Service Provider shall submit its invoice within seven (7) calendar days of the period for which compensation is sought. Invoices shall be submitted as follows:

Original to:

Army Hawaii Family Housing LLC  
215 Duck Road, Bldg. 950  
Schofield Barracks, Hawaii 96857  
Attn: Mark Crabtree, Director of Maintenance

Service Provider shall invoice AHFH twice a month for the work actually performed and for authorized reimbursable(s). AHFH shall provide no compensation to Service Provider for preparation of invoices. The invoice shall state the completion of the Scope of Work (i.e. the number of units X rate);

AHFH shall retain the right to withhold all payments should any provision of this Subcontract not be completed in a satisfactory manner or in accordance with the schedule. If payment is withheld, AHFH shall notify Service Provider in writing of the reasons and what action is required before payment will be made. Service Provider shall have 30 days from the date of notification to correct the deficiencies identified by AHFH. Upon satisfactory completion of such deficiencies, AHFH shall release the previously withheld payment. Otherwise, AHFH shall make payment within 30 days of receipt of payment of AHFH's invoice for the work performed by Service Provider. Only payment for disputed services will be withheld. All undisputed amounts will be paid in accordance with this paragraph.

6. **Final invoice:** Service Provider, at the time of final payment under this contract, shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, a release discharging AHFH, its officers, agents, and employees of and from all liabilities, obligations, and claims arising out of or under this subcontract. The final invoice should not be submitted until all work is complete and all reports filed, and accepted by AHFH. Final payment may be held pending resolution of any open issues or claims.
7. **Deductions:** It is understood and agreed between the parties, that any reductions for unsatisfactory performance, or any other reason, taken by the Government from AHFH invoices, due to services required of Service Provider by virtue of this Subcontract, will likewise be reduced from Service Provider's invoices.

The Service Provider shall indemnify AHFH for any cost incurred and any payments made by AHFH resulting from false claims submitted by the Service Provider under this Subcontract or as a result of a Service Provider misrepresentation of fact or fraud relating to any claim or dispute arising under or relating to this Subcontract.

8. **Waiver of Claims:** Unless a shorter time is specified elsewhere in this Subcontract at least annually and, on or before making his/her final request for payment, Service Provider shall submit to AHFH, in writing, all claims for compensation under or arising out of this Subcontract. The acceptance by Service Provider of final payment shall constitute a waiver of all claims against AHFH under or arising out of this Subcontract except those previously made in writing and identified by Service Provider as unsettled at the time of his/her final request for payment.

9. **Wage Rates:** Service Provider will comply with all applicable provisions of the Fair Labor Standards and any State or local laws and regulations government wages and hours.
10. **Licenses:** Service Provider hereby represents, warrants and covenants that it has obtained, and will obtain at all times during the term of this Agreement, all federal, state and local licenses required under all applicable rules, regulations, ordinances, codes and laws. Upon AHFH's request, Service Provider shall deliver to AHFH a true and complete copy of all licenses maintained by Service Provider. Service Provider hereby represents and warrants that its Federal taxpayer identification number is 41-0231510, and its State Tax number is W20086976-01. Service Provider will promptly notify AHFH in writing of any changes in such licenses, including, but not limited to, the status of such licenses or additional licenses. Service Provider shall ensure that all of its employees, vendors, agents and representatives also obtain and maintain the licenses required of Service Provider hereunder. Notwithstanding anything to the contrary contained herein, if at any time Service Provider fails to maintain the licenses required anything to the contrary contained herein, AHFH may immediately terminate this Agreement upon delivery to Service Provider of written notice.
11. **Indemnity and Insurance:** See Exhibit "B" incorporated herein by reference.
12. **Independent Contractor:** Service Provider shall be an independent contractor with respect to the performance of the Services hereunder, and neither Service Provider nor anyone employed or acting on behalf of Service Provider shall be deemed for any purpose to be the employee, agent, servant or representative of AHFH or Owner in the performance of any Services. Service Provider shall be solely responsible for the compensation, benefits, contributions and taxes, if any, or its employees, vendors, agents and representatives. AHFH shall have no direction or control of Service Provider or its employees, vendors, agents and representatives except in the results to be obtained. The Services shall meet the approval of AHFH and be subject to the general right of inspection by AHFH and be subject to the general rule of inspection by AHFH to secure the satisfactory completion thereof.
13. **Schedule:** At the time of Service Provider's execution of this Agreement, Service Provider shall deliver to AHFH a written schedule (the "Schedule") specifying (a) the number of days within each month services are to be performed, (b) the actual days on which all or any portion of the Services will be performed, (c) the number of personnel anticipated for the work, and (d) the individual personnel designated to be perform each portion of the work comprising the Services. The Schedule shall also include any other detailed information as required by AHFH. Service Provider shall not materially change the Schedule without first obtaining AHFH's written consent, which shall not be unreasonably withheld.
14. **Arbitration:** All claims, disputes, and other matters in question between the parties to this Agreement arising out of or relating to this Agreement or the breach thereof, which are not disposed of by mutual agreement, shall be decided by arbitration in accordance with the Arbitration Rules of the American Arbitration Association. Service Provider expressly agrees on behalf of its employees, vendors, agents and representatives to have such parties be joined in any arbitration proceedings between AHFH and/or Owner and Service Provider (if such

joining is requested. This agreement to arbitrate shall be specifically enforceable under prevailing arbitration law. Notice of demand for arbitration shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. The demand shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen, but in no event after the date when the institution of legal or equitable proceedings would be barred by the applicable statute of limitations. The award rendered by the arbitrators shall be final, and judgment may be entered in accordance with the applicable law in any court having jurisdiction thereof.

- 15. Assignment:** Service Provider may not assign its rights and obligations hereunder without the prior written consent of AHFH. If Service Provider assigns its rights and obligations hereunder without first obtaining AHFH's written consent thereto, said assignment shall be null and void and ineffective as to AHFH. This Agreement shall be assignable to Owner or Owner's nominee, at Owner's option, upon ten days' prior written notice to Service Provider. This Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of the parties hereto.
- 16. Notices:** All notices and demands shall be given in writing by personal service, certified mail, postage prepaid and return receipt requested, by Federal Express, Express Mail or any other commercial delivery service which guarantees overnight delivery (an "Overnight Service"), or by facsimile or telecopies. Notices and payments required hereunder, shall be considered given when served, when deposited in the United States mail, when deposited with an overnight Service marked for overnight delivery or when received by facsimile or telecopier. Notices shall be addressed as appears below for the respective parties, provided that if any party gives notice of a change in name or address, notices to the giver of such notice shall thereafter be given as demanded in such notice.

**Principals:**

Army Hawaii Family Housing LLC  
215 Duck Road, Bldg. 950  
Schofield Barracks, Hawaii 96857  
Attn: Mark Crabtree, Director of Maintenance

**Service Provider:**

Ecolab, Inc.  
1600 Kapiolani Blvd, #524  
Honolulu, HI 96814  
Attn: David Lau, District Manager

- 17. Authority:** Service Provider hereby represents and warrants to AHFH that Service Provider, and the person signing this Agreement on behalf of Service Provider, has the full right and authority to enter into this Agreement, to consummate the transactions contemplated herein, that no other persons are required to sign this Agreement to effectuate the provisions of the Agreement and that this Agreement is valid, binding and enforceable.

- 18. Standard Provisions:**

- A. This Agreement is made in the State of Hawaii and its validity, construction, and all rights under it shall be governed by the laws of the State of Hawaii.
- B. This Agreement supersedes any prior agreements and contains the entire agreement of the parties on the matters covered. No other agreement, statement or promise made by any party or agent of any party that is not in writing and signed by all the parties to this Agreement shall be binding. Any amendments to this Agreement shall be in writing and signed by all parties hereto. If any inconsistency exists between this Agreement and any change order or purchase order for additional work, the term and conditions of this Agreement shall prevail.
- C. The provisions of this Agreement were negotiated by all the parties hereto and this Agreement shall be deemed to have been drafted by all the parties hereto.
- D. The paragraph headings throughout this Agreement are for convenience and reference only and the words contained herein shall not be held to expand, modify, simplify, or aid in the interpretation, construction, or meaning of this Agreement.
- E. Time is of the essence of this Agreement.
- F. If any provision of this Agreement or the application thereof to any person or in any circumstance shall be invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to other persons or in other circumstances shall not be affected thereby and shall be enforced to the greatest extent permitted by law.
- G. If either party institutes an action to enforce its rights under this Agreement, the losing party shall pay to the prevailing party the attorneys' fees and costs incurred by the prevailing party in such action.
- H. Nothing in this Agreement shall be construed to waive, limit or otherwise alter the rights or remedies available to any party, in law or equity, absent this Agreement.
- I. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but such counterparts when taken together shall constitute but one agreement.

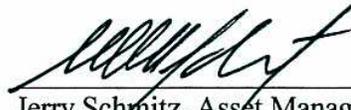
ATTACHMENTS: Exhibit A - The Statement of Work  
Exhibit B - Insurance Addendum

**19. Acceptance:** This AGREEMENT and its EXHIBITS constitute the entire understanding of the parties and supersedes any prior proposals, understandings or agreements.

Army Hawaii Family Housing, its affiliates, subsidiaries, agents, and employees, (collectively "Army Hawaii Family Housing") is solely responsible for payment of all

amounts due you under this Agreement. This notice includes and extends to both written as well as verbal contracts and/or orders given by AHFH on behalf of Army Hawaii Family Housing. By your execution of this Agreement you acknowledge the foregoing disclaimer of liability and agree to look only to Army Hawaii Family Housing for any payment under this Agreement.

Dated: 13 Feb, 07

  
\_\_\_\_\_  
Jerry Schmitz, Asset Manager  
Army Hawaii Family Housing LLC

Dated: FEBRUARY 5, 2007

  
\_\_\_\_\_  
David Lau, District Manager  
Ecolab, Inc.



## **Army Hawaii Family Housing LLC**

### **Statement of Work: Pest Control**

#### **DESCRIPTION OF SERVICES**

The service provider shall provide all management, tools, supplies, equipment, parts and labor necessary to provide termite elimination, rodent, and pest control services at Army Hawaii Family Housing Units on the Island of Oahu, Hawaii. AHFH housing areas include locations at Aliamanu Military Reservation (AMR) East, AMR Rim, AMR West, Canby, Hamilton, Kalakaua, Leader Field, Lyman, Santa Fe, Solomon, Ft. Shafter, Helemano, Red Hill, Tripler, and Wheeler. The service provider shall use industry standards and practices in the performance of services provided.

**Resident satisfaction is critical to the viability and a prerequisite of this contract.**

1. **Interior/Exterior Rodent and Pest Control Program.** Service provider shall implement a comprehensive interior/exterior rodent and pest control program. The program shall provide for scheduled proactive treatments as required to optimize effectiveness and will include responding to service calls at no additional cost. Service provider shall assign a primary point of contact for each community, collaborate to identify critical areas, and prepare a service schematic for equipment placement.

At a minimum, rodent control will consist of multi-defense methods such as frontline rodent equipment, suspended bait block in storm sewers and drains, and building of defense barriers. Equipment shall be bar coded to provide real-time on-site reporting. Service provider shall perform on-going interior and exterior inspections to determine pest presence and activity. Housing exterior 4' perimeter treatments shall be performed to treat ants, centipedes, etc.

Service provider shall work closely with AHFH staff offering training as needed for the website reporting system, barcode processes, and other topics relative to this program. The program shall include brochures, flyers, etc. to help promote resident awareness of the preventive plan.

2. **Service Calls (SCs).** SCs will be divided into two categories of priority (e.g., urgent and routine). AHFH reserves the right to change priorities placed upon the work control documents as deemed appropriate. Service provider shall obtain occupant signature, date and time upon completion of work and annotate the following information on each SC:
  - a. Date and Time the Work Started (Travel time shall not be included under manhours).
  - b. Date and Time the Work Completed.
  - c. Description of Work Performed and Detailed Breakdown of Materials, etc.
  - d. Workman Identification/Service provider's Signature.
  - e. Resident Endorsement/Signature.

**Urgent.** Urgent work takes priority over other calls and requires immediate action, including diversion of personnel from other jobs. This work is necessary for the protection of the health and safety of the residents. The service provider shall be notified of urgent SCs by AHFH via telephone. The service provider shall commence corrective action at the work site within two (2) hours after notification of the call and shall remain on the job until the urgent situation has been successfully neutralized, and the problem alleviated. If AHFH is unable to contact the Service provider for an urgent call, AHFH reserves the right to use AHFH employees or other commercial service providers. The service provider will be billed for all expenses incurred. The service provider shall submit the completed SC to AHFH the next business day after work completion. After normal duty business operating hours, the service provider shall provide, at his or her own expense, a telephone answering service or contact telephone number, which shall refer calls for urgent service to a designated individual.

**Routine.** The service provider shall respond to routine work within 1 day after receipt of an approved SC and shall complete the work within two (2) work days after response. The service provider shall submit the completed SC to AHFH no later than one (1) business day after the work has been completed. Routine calls are done Monday through Friday 8:00 am – 5:30 pm.

**Service Call Response.** The service provider shall respond to service requests within the times specified below:

<u>CATEGORY</u>	<u>RESPONSE TIME</u>	<u>COMPLETION TIME</u>
URGENT	2 Hours	Continue until complete
ROUTINE	1 day	2 days

**Hours of Operation.** Urgent and Routine service call work shall be accomplished in the following time periods:

<u>CATEGORY</u>	<u>DAYS OF WORK</u>	<u>TIMES</u>
URGENT	7 days per week*	24 hrs per day
ROUTINE	Monday through Friday**	8am- 5:00 pm

\* Including Federal Holidays

\*\* Excluding Federal Holidays

**Responsible Resident Present:** If the resident or responsible adult is not present to complete the service call, leave a courtesy tag on the door (with the time, date, address, and service call identified on it) informing the resident to call and reschedule the appointment. If the resident fails to contact the service provider within 24 hours, document the missed appointment and return the SC to AHFH.

3. **Whitmire Advance Termite Bait System.** The service provider shall be responsible for monitoring and maintaining the system in accordance with the manufacturer’s specifications to control and eliminate the presence of subterranean termites. Submission of a monthly monitoring report shall be required. Service provider shall replace existing Sentricon Colony Elimination Systems with Whitmire Advance Termite Bait Systems at no additional cost.
4. **Tent Fumigation.** Service provider shall completely enclose the building, including any addition, lean-to, and other miscellaneous structures attached to the main structure. Fumigant shall be used in accordance with manufacturer’s specifications for the control and elimination of

dry wood termites. Original copies of the Dow Fumiguide B and Y calculations and Fumiscope figures shall be submitted to AHFH upon completion.

**Reoccupation.** A detector reading must be made before any seals are broken. After expiration of the exposure period, seals or covers shall be removed and the structure, equipment, or property shall be ventilated to dissipate all of the fumigant. The area shall not be entered until aeration is complete. The service provider shall take appropriate readings in the most confined spaces where there is little or no ventilation. These readings shall be taken at the end of the aeration period after the tarpaulin is removed. Safe readings as listed by the applicable State standards shall be required before re-entry. The final determination of the reoccupation of the building will be made and authorized by the service provider Supervisor to AHFH. The security of the structure from the time of tenting until six (6) hours after breaking of the seals is the responsibility of the service provider, at which time the lock boxes will be removed from structure.

**Warranty.** The service provider shall provide a warranty on tent treatment for not less than two (2) years from the completion of work. The building shall be refumigated or spot-treated at no additional cost to AHFH.

- 5. Ground Treatment.** Service shall include drilling into concrete slab within the building structure, drilling and trenching outside the building structure and residency of 1% concentration permethrin or comparable into the drilled and trenched areas. The service provider shall provide a copy of the termiticide usage report to AHFH, stating the brand name and total amount of termiticide used, and the rate of application per linear feet. The termiticide shall be used in accordance with the manufacturer's specifications.

**Warranty.** The service provider shall provide a warranty on ground treatment for not less than three (3) years from the completion of work. The area/building shall be retreated at no additional cost to AHFH.

- 6. Wood Infestation Inspection.** The service provider shall inspect AHFH structures to identify termite infestation, wood rot, visible damage or conditions detrimental to wood structural components when requested by AHFH. All parts of the structure must be inspected. A written report shall be submitted to AHFH for each structural unit. Problem areas shall be sketched, or reported in sufficient detail to allow for follow-up chemical and/or structural correction.
- 7. Miscellaneous Health Related Pests Outdoors.** The service provider is to provide control for pests such as bees, ants, wasps, centipedes, ticks mosquitoes, fleas, spiders, and other organisms as required.
- 8. Carcass Disposal / Odor Abatement.** Remove all dead or dying rodents or other animals from the installation and dispose of in accordance with applicable State of Hawaii regulations. AHFH shall order such work via Service Call. In accessible areas, locate and remove the carcass and apply an effective deodorizer. Odors shall be treated with or without the discovery of cause. Follow-up deodorant applications shall be made by the service provider at no additional cost to AHFH and as directed by AHFH based on treatment failure.
- 9. Feral Cat Control.** Service provider shall provide a plan to address control methods for communities affected by a high feral cat population.
- 10. Miscellaneous Pest Control.** Provide standard corrective measures to pest management problems not covered under previous categories.

- 11. Clean Up.** All debris caused or related to the performance of work under this contract shall be picked-up daily and properly disposed of by the Contractor. No debris shall be left at a site overnight. Clean up shall be included as part of each task performed under this contract.
- 12. Disposal.** The Contractor shall properly dispose of waste, resulting from this contract at an approved disposal/recycling site off AHFH property at no additional cost to AHFH. The Contractor shall store, handle, transport, and dispose of the designate waste in accordance with all applicable Federal, State, and local laws and regulations
- 13. Special Qualifications.** Employees performing services under this contract shall meet all local, state and federal licensing requirements.
- 14. Employee Training.** Service provider shall provide environmental, health and safety training to employees to ensure compliance with local, state and federal laws and regulations.
- 15. Safety and Health.** The service provider shall initiate and maintain programs to comply with the provisions of the Occupational Safety and Health Standards Act concerning entry requirements in confined spaces and handling potential hazardous substances.
- 16. Installation Access.** Upon award, the service provider shall be responsible for providing AHFH with Installation Access Pass applications and a copy of a picture ID for each employee requiring base access for performance under this contract. Service Provider shall also identify a point of contact for badge requests. Background checks will be conducted before an access pass can be issued. Upon employee termination, Service Provider will be required to collect his or her badge and notify AHFH within 1 business day. Badges shall be returned to the attention of the AHFH Contract Manager at 215 Duck Rd., Bldg 950, Schofield Barracks, HI 96857 within 3 business days.
- 17. Protection of Environmental Resources.** The service provider shall accomplish the measures necessary to avoid creating environmental pollution through its activities. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical or biological elements or agents which adversely affect human health or welfare; affect other species of importance to man; or degrade the utility of the environment for aesthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land. The service provider shall make every effort to prevent contamination of persons, pets, private and AHFH property. All spills of pesticides used shall immediately be reported to AHFH. The spill shall be immediately cleaned up by the service provider to the satisfaction of AHFH at no additional cost.
- 18. Demolition & New Construction.** AHFH housing inventory is subject to change as old neighborhoods are demolished and newly developed areas become available for occupancy. Service provider can expect to revisit monthly firm-fixed pricing to coincide with significant changes to service areas within a community.
- 19. Exclusion Areas:** Ama, Bougainville, Red Hill Mauka, and Kaena. The exclusion of these neighborhoods affect services areas within AMR East, AMR West, Leader Field, and Red Hill communities.

**INSURANCE REQUIREMENTS**

Owner or its affiliates, at its sole expense, will implement a CIP to furnish certain insurance coverage(s) – General Liability, Worker’s Compensation, Employer’s Liability, and Excess Liability – for on-site activities. The CIP will be for the benefit of Owner and its affiliates, and the Enrolled Subcontractors. Such coverage applies only to work performed under the Subcontract at the Site and all Enrolled Subcontractors must provide their own insurance for “off-site activities” and during the warranty period at the policy limits. The CIP does not cover refuse operators, environmental/remediation firms, pesticide applicators, consultants, suppliers, or material dealers.

Enrollment in the CIP is not automatic. Each subcontractor, upon notice of award, must submit Enrollment Forms as outlined in the Insurance Manual, if requested to Enroll in the CIP program by the Owner or its affiliates and the insurance carrier(s). Upon acceptance, the subcontractor will receive a CIP Certificate of Insurance evidencing coverages (General Liability, Worker’s Compensation, Employer’s Liability and Excess Liability) provided by the CIP.

For subcontractors and sub tier subcontractors enrolled in the CIP, it is hereby agreed that the Subcontract Price does not include any amount or allowance for reimbursement for any premium for the insurance specified herein for on-site exposures, which insurance is being furnished by Owner or its affiliates. **Subcontractor certifies that, in the previously provided Insurance Credit Worksheet, the amount of premium has been excluded from the Subcontract Price.**

For Per Unit or Time & Materials contracts, subcontractors have the option of providing an insurance bid credit by completing the Per Unit or Time & Materials Alternative form, without separately reporting payrolls. This provides the Owner or its affiliates with the ability to deduct an insurance cost from each payment requisition based on the subcontractor’s trade.

**Subcontractor Furnished Insurance**

For any work under this agreement, and until completion and final acceptance of the work , each Subcontractor (except for those coverages stated below that are provided by the CIP, if enrolled), at its own expense, must promptly furnish to Owner or its affiliates certificates of insurance for itself and any of its sub-subcontractors of any tier, from an underwriter acceptable to Owner or its affiliates (which herein is defined as any carrier having at least an A.M. Bests rating of A-:VII), providing evidence that the following coverages are in force:

- a. **Automobile Liability Insurance** *(on-site and off-site)*

Comprehensive Automobile Liability insurance covering the use of all owned, non-owned, and hired vehicles used in connection with the project of not less than the following limits of coverage:

Per Person	\$1,000,000
Per Occurrence	\$1,000,000

Property Damage                    \$1,000,000 per occurrence  
or combined single limit of \$1,000,000

Parties referenced in d.1 shall be covered as additional insured

- b. **Workers' Compensation Insurance** *(Off-site Activities if enrolled in the CIP, and On-site and Off-site if not enrolled in the CIP)*. As required by Federal and State Workers Compensation and occupational disease statutes.
- c. **Employer's Liability Coverage**. *(Off-site Activities if enrolled in the CIP, and On-site and Off-site if not enrolled in the CIP)*. Minimum limit of \$1,000,000
- d. **Commercial General Liability Insurance** *(Off-site Activities if enrolled in the CIP, and On-site and Off-site if not enrolled in the CIP)*. Insurance for operations by the Subcontractor, or any tier of subcontractor (including products liability for any product manufactured, assembled or otherwise worked upon away from the Project Site including such manufacturing, assembly or otherwise is called for by the contract documents between the Owner or its affiliates and Subcontractor), under a form providing coverage not less than that of the Standard Commercial General Liability insurance policy form ("Occurrence Form") for operations of the party required to furnish same, including hazards of operations (including explosion, collapse and underground coverage), elevators, independent contractors, contractual liability, products and completed operations, for claims arising out of the Work hereunder for personal injury, bodily injury and property damage in policy or policies of insurance such that the per occurrence and \$2,000,000 General Aggregate including Products/Completed Operations. Coverage shall also provide and encompass at least the following:
1. Endorsement naming Actus Lend Lease LLC, Army Hawaii Family Housing LLC, AHFH Managing Member LLC, AHFH Property Management LLC, Actus Lend Lease Holdings LLC, The United States of America, by the Secretary of the Army, U.S. Bank National Association, MBIA Insurance Corporation, All Star Housing Services LLC, and any of their respective successors or assigns, and any other entity as required in the Contract as Additional Insureds. ISO Form CG 2010 10 3 (or equivalent form) shall be used to provide this coverage.
  2. Waiver of Subrogation in favor of all Additional Insureds.
  3. Policy to be primary and not excess of or contributing with any other insurance available to the Additional Insureds.
- e. Where applicable, Environmental Liability coverage for Asbestos Testing/Asbestos Abatement coverage (for contracts involving the Testing/Abatement of Asbestos) or Lead paint abatement coverage (for contracts involving the Abatement of Lead) or any other Environmental subcontractor in the amount of \$5,000,000. Such coverage will include as Additional Insureds those entities listed in d.1. Where applicable,

Environmental/Remediation Liability shall contain an endorsement for transporting hazardous material by auto and MSC-90 endorsement.

- f. Where applicable, Professional Liability (for Professional Contracts only) errors and omissions coverage with a limit of liability of \$1,000,000 per claim or per occurrence.

**Certificates of Insurance**

Except for Enrolled Contractors with respect to coverages maintained under the CIP for on-site activities, a Certificate of Insurance indicating coverages applicable to the Project and providing for 30 days written notice prior to cancellation, non-renewal or material modification in any policy must be submitted, approved, and available to Owner or its affiliates prior to commencement of work. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change will not occur until 30 days after the insurer gives written notice to the Owner or its affiliates. Certificates and insurer notices should be sent to the following offices:

Army Hawaii Family Housing  
Attn: Contracts Manager  
215 Duck Road, Bldg 950  
Schofield Barracks, HI 96857

With a copy to:

Marsh USA, Inc.  
Attn: CIP Administrator  
200 Clarendon Street  
Boston, MA 02116

**Termination/Modification of the CIP for Enrolled Subcontractors only**

While it is the intent of Owner or its affiliates to keep the CIP in force throughout the term of the Project, Owner or its affiliates reserves the right to terminate or modify the CIP or any portion thereof. To exercise this option, Owner or its affiliates shall provide 30 days advance written notice to each Enrolled Subcontractor, which is covered under the CIP. Enrolled Subcontractors shall immediately obtain replacement insurance coverage and the reasonable cost of such replacement insurance will be reimbursed by Owner or its affiliates at the rates indicated in the Insurance Premium Worksheet. Written evidence of such insurance shall be provided to Owner or its affiliates prior to the actual termination date of the CIP.

**Cooperation for Enrolled Subcontractors only**

The Subcontractor and each of its subcontractors of any tier for whom insurance is provided by the Owner or its affiliates pursuant to this Section shall:

- a. Furnish to the CIP Administrator, its designees or the insurance carriers all information and documentation which the CIP Administrator may require from time to time in connection with the issuance of any policies, pursuant to this agreement, in such form and substance as the Administrator may prescribe;
- b. Furnish to the CIP Administrator, its designees or the insurance carriers certified payroll and accident summary reports as required once a month on the forms provided by the CIP Administrator and any payroll records required to assist the carriers in any audits. The Subcontractor will be required under this subsection to segregate its respective reports relating to the Project from records relating to any other work which it may be performing and for which insurance is not provided by the Owner or its affiliates pursuant to this Agreement;
- c. Promptly comply with the recommendations of the insurance carriers so that said insurance carriers will continue to provide the coverage to be maintained by the Owner or its affiliates pursuant to this Section at a reasonable premium.
- d. The subcontractor shall assist and cooperate in every manner possible in connection with the adjustment of all claims arising out of the operations conducted under, or in connection with, the Project, and shall cooperate with the insurance carrier or carriers of the Owner and its affiliates, the subcontractors of any tier in all litigated claims and demands which arise out of said operations which the insurance carrier or carriers are called upon to adjust or resist. Any fines assessed for late claim reporting will be the responsibility of the responsible Contractor.
- e. If the Subcontractor or any of its Subcontractors of any tier should fail to comply with their respective obligations under this Addendum, the Owner or its affiliates may withhold any payments due the Subcontractor until such time as the Subcontractor and its Sub-subcontractors of any tier shall have performed their obligations to the Owner or its affiliate's reasonable satisfaction.
- f. The Subcontractor hereby warrants to the Owner or its affiliates the accuracy of the information provided on the CIP Insurance Information Form and agrees that the Owner or its affiliates, its insurance carriers and/or the CIP Administrator may audit the records of the Subcontractor and its sub-subcontractors to confirm the accuracy of all insurance information provided, including, without limitation, any affect on insurance resulting from changes in the Work. The Subcontractor further warrants and agrees that the Owner or its affiliates is entitled to all credits in CIP insurance premiums which accrue from the audit of Subcontractor's records related to the coverage.

### **Insurance Provided under the CIP**

The coverages provided under the CIP will apply to claims arising out of Project operations at the designated Site and operations necessary or incidental therein. **CIP Coverage is NOT provided for operations at the permanent location(s) of the Subcontractor.** The amount of

insurance coverage purchased by the Owner and its affiliates shall in no way serve as a limitation of the Enrolled Subcontractor's liability for claims in excess of such amounts.

**Waiver of Subrogation**

To the extent that a loss is covered by insurance in force, and recovery is made for such loss, Owner or its affiliates and Subcontractor hereby mutually release each other from liability and waive all rights of subrogation and all rights of recovery against each other for any loss insured against under their respective policies (including extended coverage), no matter how caused, it being understood that the damaged party will look solely to its insurer for reimbursement. Similarly, the Owner or its affiliates shall require Subcontractor to waive its rights of subrogation in each of their respective sub-subcontracts of any tier with respect to the work.

**No Release**

The carrying of the above-described insurance shall in no way be interpreted as relieving the Subcontractor of any other responsibility or liability under this agreement or any applicable law, statute, regulation or order.

**Other Insurance**

Any type of insurance or any increase of limits of liability not described above which a Subcontractor requires for its own protection or on account of any law or statute shall be at its own responsibility and its own expense.

**Requirements for Sub tier subcontractors**

Should the Subcontractor engage a lower tier subcontractor, the same conditions applicable to the Subcontractor under those Insurance Requirements shall apply to each lower tier subcontractor.

APPENDIX V. MEMORANDUM REGARDING INSTALLATION MANAGEMENT OF PEST  
CONTROL ACTIVITIES ON RESIDENTIAL COMMUNITIES INITIATIVE (RCI) PROPERTIES AT  
ARMY INSTALLATIONS



DEPARTMENT OF THE ARMY  
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT  
600 ARMY PENTAGON  
WASHINGTON DC 20310-0600



DAIM-ZA

OCT 03 2003

MEMORANDUM FOR DIRECTOR, INSTALLATION MANAGEMENT AGENCY, ATTN:  
SFIM-Z, 2511 JEFFERSON DAVIS HIGHWAY, ARLINGTON, VA 22202-3926

SUBJECT: Installation Management of Pest Control Activities on Residential  
Communities Initiative (RCI) Properties at Army Installations

1. References:

- a. Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Section 136r-1 (Encl 1)
- b. Title 40, Code of Federal Regulations (CFR), Part 171, "Certification of Pesticide Applicators" (Encl 2)
- c. AR 190-16, Chapter 2, Physical Security, 31 May 1991
- d. Department of Defense Armed Forces Pest Management Board (AFPMB) Technical Guide (TG) No. 7, pages 7-8 para 2,9,10, Installation Pesticide Security, March 2003 (Encl 3)

2. This memorandum provides implementation guidance for installation management pest control activities on RCI properties. AR 200-5, "Pest management", does not apply. This guidance derives from FIFRA, 40 CFR part 171, and state-mandated requirements. Installation security places additional requirements, including installation oversight, for the transport of chemical pesticides onto and across installation properties.

3. Effective 1 October, 2003, Garrison Commanders have the responsibility for ensuring RCI partners meet the requirements of the pest management portion of the RCI Community Development and Management Plan (CDMP). For those plans currently in place that do not address the following minimum requirements, the installation will work cooperatively with RCI partners to ensure compliance.

- a. The RCI partner will register pesticides scheduled for use with the Installation Pest Management Coordinator (IPMC) and/or the environmental office.

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SUBJECT: Installation Management of Pest Control Activities on Residential Communities Initiative (RCI) Properties at Army Installations

b. The RCI partners will provide the IPMC access to hard, or electronic copies of all pesticide labels and material safety data sheets, as well as records of pesticide usage. These records will include the date, time, specific pesticide application locations, and amount of active ingredient applied. The IPMC will also forward this data to the installation emergency response personnel.

c. The RCI Partners will ensure that vehicles and equipment are clearly identified and used for only pest management activities. The IPMC will provide information on such markings or company logos to the Provost Marshall's office. Vehicles will contain spill and decontamination kits, and the RCI partner will provide documentation of spill prevention and cleanup training to the environmental and safety offices. The installation will provide a copy of the installation Spill Prevention, Control and Countermeasure Plan to the RCI partner.

4. The US Army Staff POC is Mr. Joseph Tarnopol, (703) 614-3637, joseph.tarnopol@hqda.army.mil.

3 Encls



LARRY J. LUST  
Major General, GS  
Assistant Chief of Staff  
for Installation Management

DAIM-ZA

SUBJECT: Installation Management of Pest Control Activities on Residential Communities Initiative (RCI) Properties at Army Installations

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