

**REPORT TO THE  
TWENTIETH LEGISLATURE**

**STATE OF HAWAII**

**1999**

**IN COMPLIANCE WITH HAWAII REVISED STATUTES  
CHAPTERS 128D AND 128E  
ON THE ACTIVITIES OF THE DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH ADMINISTRATION  
OFFICE OF HAZARD EVALUATION AND EMERGENCY RESPONSE  
AND USE OF THE ENVIRONMENTAL RESPONSE REVOLVING FUND**

**PREPARED BY:**

**DEPARTMENT OF HEALTH**

**STATE OF HAWAII**

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## GLOSSARY

AFB	Air Force Base
AGI	Airport Group International
AOC	Area of Concern
ARARs	Applicable Relevant and Appropriate Requirements
AST	Above Ground Storage Tank
ATSDR	Strausbaugh at Agency for Toxic Substances and Disease Registry
AVGAS	Aviation Gas
BETX	Benzene, Toluene, Ethyl Benzene, Xylene
bgs	Below Ground Surface
BRAC Base	Realignment and Closure
CA	Cooperative Agreement
CAB	Clean Air Branch
CCA	Copper Chromium Arsenate
CDC	Center for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIC	Clean Islands Council
CIP	Campbell Industrial Park
CLEAN	Campbell Local Emergency Action Network
COC	Contaminant of Concern
CSM	Conceptual Site Model
CWB	Clean Water Branch
DAGS	Department of Accounting and General Services
DERP	Defense Environmental Restoration Program
DLNR	Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife
DOD	Department of Defense
DOH	Department of Health
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
DSMOA	Department of Defense/State Memorandum of Agreement
EA	Environmental Area
EE/CA	Engineering Evaluation/Cost Analysis
EGIS	Environmental Geographic Information System
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
EPO	Environmental Planning Office
ERO	Environmental Resources Office
ERRF	Environmental Response Revolving Fund
ESI	Expanded site inspection

FS	Feasibility study
FSAs	Fuel Storage Annexes
GIS	Geographic Information System
H <sub>2</sub> S	Hydrogen sulfide
HAR	Hawaii Administrative Rules
HARC	Hawaii Agriculture Research Center
HAZMAT	Hazardous Material (also a Unit in the Fire Department)
HCCPD	Hexachlorocyclopentadiene
HCDA	Hawaii Community Development Authority
HEER	Office of Hazard Evaluation and Emergency Response
HEPCRA	Hawaii Emergency Planning and Community Right-to-Know Act
HERL	Hawaii Environmental Response Law
HIARNG	Hawaii Air National Guard
HPD	Hawaii Fire Department
HRS	Hawaii Revised Statutes
HSERC	Hawaii State Emergency Response Commission
HSPA	Hawaiian Sugar Planter's Association
ICE	Crystal Methamphetamine
IRP	Installation Restoration Project
ISST	Initial Site Screening Team
IT	Industrial Technology
LEPC	Local Emergency Planning Committee's
MOA	Memorandum of Agreement
MCL	Maximum Contaminant Level
MOGAS	Motor gas
MSO	The U.S. Coast Guard Marine Safety Office
NAS	Naval Air Station
NCTAMS	Naval Computer and Telecommunications Area Master Station
NEESA	Naval Energy and Environmental Support Activity
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NPDES	National pollution discharge and elimination system
NPL	National Priority List
NRTF	Naval Radio Transmitting Facility
NRDA	Natural Resource Damage Assessment
OPA 90	The Oil Pollution Act of 1990
OSWM	Office of Solid Waste Management
OWSG	An Oiled Wildlife Steering Group
PA	Preliminary Assessment
PAHs	Polyaromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethylene also known as PERC
PCP	Pentachlorophenol

PENCO	Pacific Environmental Corporation
PGV	Puna Geothermal Venture
POL	Petroleum Oil and Lubricant
PRGs	Preliminary Remediation Goals
PRP	Potential Responsible Party
QA/QC	quality assurance/quality control
QEQC	Hawaii State Office of Environmental Quality Control
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RPM	State Remedial Project Manager
SDAR	Site Discovery Assessment and Remediation Section
SDWB	Safe Drinking Water Branch
SERC	State Emergency Response Commission
SHWB	Solid and Hazardous Waste Branch
SI	Site Investigation
SITE	Superfund Innovative Technology Evaluation
SOSC	State On Scene Coordinator
SPA	State Program Approval
SPCC	Spill Prevention Control and Countermeasures
SVOC	Semi-volatile organic compounds
SWTR	Surface Water Treatment Requirements
TAMC	Tripler Army Medical Center
TCE	Trichloroethylene
TBCs	To Be Considered Requirements
TPH	Total Petroleum Hydrocarbon
TSCA	Toxic Substance Control Act
UIC	Underground Injection Control
VOC	Volatile Organic Compound
VRP	Voluntary Response Program
WWTP	Wastewater treatment plant



**HAZARD EVALUATION AND EMERGENCY RESPONSE OFFICE**  
**FISCAL YEAR 1998 ACTIVITIES (7/1/97 - 6/30/98)**

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**EXECUTIVE SUMMARY**

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This report provides an overview of the function and activities of the Hazard Evaluation and Emergency Response (HEER) Office during Fiscal Year (FY) 1998. In addition, this report complies with Chapters 128D and 128E, HRS, that require the Department of Health (DOH) to prepare an annual report for the State Legislature.

Chapter 128D, HRS, requires the DOH to include/address the following:

1. Budget to implement remedial action plans requiring funding by the Environmental Response Revolving Fund.
2. Identify sites eligible for remedial action under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), including a statement as to any appropriation that may be necessary to pay the State's share of the plan.

These requirements are addressed in the HEER OFFICE BUDGET AND EXPENDITURES and STATE PRIORITY CLEANUP SITES, sections of this report.

Chapter 128E, HRS requires the DOH to report the amount of moneys collected for use by the local emergency planning committees (LEPC) and deposit into the Environmental Response Revolving Fund. This requirement is addressed below.

In general, the function of the HEER Office is to plan for and respond to hazardous substance, pollutant, contaminant and oil releases to the environment. The HEER Office evaluates actual or potential impacts such releases may have on the public, environment and natural resources and mitigates them as needed. The HEER Office is staffed with professionals able to assess chemical risks, evaluate the extent of chemical contamination, formulate response plans, oversee remediation, and actually conduct response activities. In addition, the HEER Office coordinates statewide planning activities to prepare for and respond to chemical and oil spills in the environment.

During FY 1998, the HEER Office responded to 296 of 530 notifications of chemical or oil spills. While spill notifications have been steadily increasing over the past five fiscal years, FY 1998 saw a 7.6% decrease from the 569 spill notifications reported in



FY 1997. It is not clear yet whether this is an anomaly or whether the notifications are finally leveling off.

During FY 1998, the HEER Office concentrated on improving its programs and enhancing its capacities in the following priority areas:

- Improve enforcement of Chapters 128D and 128E, HRS.
- Improve emergency response preparedness.
- Improve oversight and response to contaminated sites.
- Develop and implement a Voluntary Response Program.
- Improve office operations.
- Develop initial components of a chemical release prevention program.

During FY 1998, the HEER Office implemented the following legislation passed by the 1997 Legislature:

On July 7, 1997, the Governor approved Act 377 SLH 1997, the Voluntary Response Program (VRP). The purpose of the law is to encourage the voluntary clean up and economic development of contaminated properties. The law gives the DOH authority to grant prospective purchasers an exemption from future liability related to the contamination that is cleaned up under the program. The law was amended in 1998 to allow current owners to participate in the program and obtain a letter which would provide an exemption for subsequent purchasers of the property. During FY 1998, the VRP was developed and the DOH received its first two applicants to the program. These two projects are currently underway and are setting the stage for the program to expand in the future.

On June 16, 1997, the Governor approved Act 148 SLH 1997, Pipeline Safety Bill. A Pipeline Safety Committee, established within the DOH for administrative purposes, meets four times a year. The committee will participate in planning, monitoring, and overseeing of pipeline safety. It will submit a separate report to the legislature.

On June 21, 1997, the Governor approved Act 260 SLH 1997, which established funding for the local emergency planning committees (LEPC) to plan, prepare, and respond to hazardous material (HAZMAT) emergencies. The LEPC funding is generated by the Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA) annual filing fees and are deposited into the Emergency Response Revolving Fund (ERRF).

Chapter 128E, HRS, requires the DOH to report to the legislature the amount of moneys collected for the LEPC's during FY 1998, the amount collected to date for FY 1999, and the amount to be collected in FY 2000.

During FY 1998 the HEER Office collected \$80,300 in fees for the calendar year 1997 reporting period. An additional \$7,900 in fees for the calendar year 1997 reporting period were submitted to the HEER Office and deposited into the ERRF in FY 1999.

Collection for the calendar year 1998 HEPCRA fees are not due until March 1, 1999 with the bulk generally submitted during February. It is anticipated that there will be a 25 percent reduction in fees collected in the future because the EPA Office of Chemical Emergency Preparedness and Prevention is proposing to raise the reporting threshold for gasoline and diesel fuel. The HEER Office is waiting for the final notification that the reporting requirements will change before collecting payments for the 1998 calendar year.

During FY 1999, the HEER Office will continue to build its capacity to order, enforce and oversee cleanups of contaminated sites and recover costs wherever possible. In addition, it will encourage greater utilization of incentive programs such as the VRP and Brownfields programs to return contaminated properties to productive economic use. Finally, the HEER Office will work to develop and implement a comprehensive Hawaii Chemical Accident Release Prevention Program. These activities are in the following priorities of the HEER Office's fiscal years 1999/2000 Operating Plan:

- Improve enforcement of Chapters 128D and 128E, HRS.
- Improve emergency response preparedness.
- Improve oversight and response to contaminated sites.
- Improve usage of the VRP and Brownfields programs.
- Improve office operations.
- Develop a Hawaii Chemical Accident Release Prevention Program.

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## **THE HEER OFFICE**

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The HEER Office operates under various environmental authorities. The primary state enabling legislation is Chapter 128D, HRS, "Environmental Response Law" or commonly referred to as Hawaii's Environmental Response Law (HERL) and Chapter 128E, HRS, "Hawaii Emergency Planning and Community Right-to-Know Act" (HEPCRA). Chapter 128D, HRS, is modeled after the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Chapter 128E, HRS, is modeled after the federal Emergency Planning and Community Right-To-Know Act (EPCRA). Unlike CERCLA, HERL defines hazardous substances to include oil. Due to this fact, the HEER Office becomes involved in oil spill planning, preparedness and response activities under the Oil Pollution Act of 1990 (OPA 90). The following is a list of the legal authorities under which the HEER Office operates:

### **Legal Authorities**

#### State Laws/Rules (Hawaii Revised Statutes - HRS)

- Chapter 128D, HRS, "Hawaii's Environmental Response Law" (HERL)
  - Title 11, Chapter 451, Hawaii Administrative Rules (HAR), "State Contingency Plan."
- Chapter 128E, HRS, "Hawaii Emergency Planning and Community Right-to-Know Act" (HEPCRA).
- Chapter 321, HRS, "Department of Health"
  - Title 11, Chapter 5, HAR, "Environmentally-Related Illness and Injury Reporting"

#### Federal Laws

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR, Part 300, "National Contingency Plan."
- CERCLA, Title III, "Emergency Planning and Community Right-to-Know Act," 40 CFR, Part 302, "National Contingency Plan."

- The Oil Pollution Act of 1990 (OPA 90), 40 CFR, Part 300, "National Contingency Plan."

## **Program Mission and Objectives**

### **Mission**

To protect human health, public welfare and the environment, and to provide state leadership, support and partnership in preventing, planning for, responding to, eliminating, and enforcing environmental laws related to releases or threats of releases of hazardous substances, pollutants or contaminants including oil.

Specific program actions are:

1. Prepare for and respond in a timely and effective manner to releases of hazardous substances and oil into the environment.
2. Prepare and respond to all media related (air, land and water) releases during non-routine state working hours (off-hours).
3. Locate, investigate, and assist in the cleanup of lands with prior releases of hazardous substances, pollutants or contaminants.
4. Prevent harmful releases of oil and hazardous substances into the environment.
5. Evaluate the risks associated with releases of chemicals into the environment and other environmental risks to public health and the ecosystem.

### **Objectives**

The following are our objectives:

#### **Objective A: Environmental Release Response:**

- A-1: Improve the preparedness of federal, state and local entities to respond to releases of petroleum and hazardous materials into the environment utilizing risk-

based management principles and effective partnerships.

A-2: Integrate the Department of Health's response and cleanup programs utilizing risk-based management principles and effective partnerships.

A-3: Enhance and improve capabilities to identify and assess hazardous substance and petroleum contaminated sites.

A-4: Enhance and improve capabilities to clean up hazardous and petroleum waste sites.

**Objective B: Prevention of Environmental Contamination**

B-1: Implement an oil spill prevention program in Hawaii.

B-2: Implement a Pipeline Safety Program.

B-3: Implement a Clean Air Act (CAA) Section 112(r) Risk Management Program.

B-4: Implement a HEPCRA Inspection Program.

**Objective C: Statewide Risk Assessment Support**

C-1: Maintain an ongoing core of qualified environmental technical experts.

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## **FY 1998 ACTIVITY**

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### **FY 1998 HEER Office Priorities**

During FY 1998, the HEER Office concentrated on improving its various programs and began to develop a Voluntary Response Program and initial components of a chemical release prevention program. The FY 1998 Operating Plan priorities were:

- Improve enforcement of Chapters 128D and 128E, HRS.
- Improve emergency response preparedness.
- Improve oversight and response to sites.
- Develop and implement a Voluntary Response Program (VRP).
- Improve office operations.
- Develop initial components of a chemical release prevention program.

### **FY 1998 Notable Accomplishments by Priorities**

#### ***Improved enforcement of Chapters 128D and 128E, HRS***

##### Legal Support/Enforcement

The HEER Office has in previous years obtained legal support from the Office of the Attorney General. The Office now has a Deputy Attorney General keeping regular office hours within the HEER Office two days per week. During this time, consultations are scheduled and time is spent with the HEER Office staff to discuss the various cases in development. The Deputy Attorney General advises and counsels the staff with regard to subpoenas, orders, contracts, agreements, memorandums of agreement (MOAs), settlements, lawsuits, cost recovery, natural resource damage assessments and other development issues.

During FY 1998, Natural Resource Damage Assessment (NRDA) has become a major area of focus. This is particularly true because of the

negotiations that have taken place with Chevron regarding the 1996 oil spill into Pearl Harbor. Together with the Natural Resource Trustees from the State and Federal agencies, a settlement is being negotiated.

The voluntary agreement that was signed by responsible parties in the Honolulu Harbor project is another milestone in the HEER Office. The agreement was signed by the Department of Health, TESORO (formerly BHP Companies), Chevron Products Company, Hawaiian Electric Company, Shell Oil Products Company, Tosco Distribution Company, Union Oil Company of California dba UNOCAL, and Department of Transportation (DOT) - Harbors Division on February 12, 1998. As a major land owner in the project area, the State of Hawaii is a party to the investigation and cleanup, due to past activities. As a party to the agreement, the State will be able to save on the cleanup cost for the public.

### **Improve emergency response preparedness.**

#### Pollution Exercise Participation

DOH played an active role in designing, planning, and conducting a wide range of oil and hazardous materials (HAZMAT) training exercises. Two Emergency Support Function 10 (ESF10) or HAZMAT exercises were held. The EPA, CHEVRON and TESORO conducted tabletop and deployment exercises. These exercises were designed to test the formation and responding capability of the Incident Command System.

DOH, in partnership with the U.S. Coast Guard, EPA and industry, held regular training and workshops on response operations throughout the year. Many of these exercises test the agencies' capability to respond to oil spills in various situations.

#### Campbell Local Emergency Action Network (CLEAN)

CLEAN was developed in 1997 to address emergency planning issues, including public health and safety, for the James Campbell Industrial Park (CIP) and surrounding community. An Emergency Management Plan for the CIP currently in use, provides guidance and information to emergency response personnel, local residents, and businesses based on local conditions and specific CIP hazards. Community involvement has been present throughout the planning

process. A special task force has been established to improve the overall effectiveness of the warning/notification system, to achieve increased public awareness and protection in and around CIP, and to provide public education on appropriate responses to the warning/notification in the event of an emergency. An EPA Region 9 Grant was proposed in the amount of \$10,000 to present a series of seminars on the Clean Air Act 112(r) Risk Management Plans.

### **Improve oversight and response to sites.**

#### Response Contracts.

The Hawaii Environmental Response Law (HERL), Chapter 128D of the Hawaii Revised Statutes, mandates that the Department of Health (DOH) undertake response actions whenever any hazardous substances, pollutants and contaminants including oil are released or there is a substantial threat of such a release into the environment that may present a substantial threat to the public health, welfare, or to the environment. To implement the requirements of the HERL, the DOH, Hazard Evaluation and Emergency Response (HEER) Office, needs the assistance of professionals from environmental response services or firms in responding to such releases. A legal notice to providers of professional services for an environmental response contract(s) was advertised in the Honolulu Advertiser on March 29, 1998. A time-critical emergency environmental response contract was awarded to the Pacific Environmental Corporation (PENCO) and the non-emergency environmental response contract was awarded to Ogden Environmental and Emergency Services Company Incorporated.

#### Initial Site Screening Team - ISST

The Initial Site Screening Team is composed of members of the Site Discovery, Assessment and Remediation (SDAR) Section. It screens and prioritizes the contaminated sites which are reported to prioritize the HEER Office's site remediation workload. The ISST is notified of sites with actual or potential contamination primarily through two routes: (1) the State On-Scene Coordinators pass on sites to the ISST after emergency response is completed; and (2) environmental consultants submit reports to the HEER Office regarding releases of hazardous substances.

Every site that comes to the ISST is initially screened by one of the ISST members. In FY 1998, a new and more detailed standard site



screening form was developed in conjunction with EPA. The new form assists the review process by requiring more detailed questions during the first round of data gathering. The questions encompass a wide variety of parameters, such as potential targets, the site's underlying aquifer status, political and public attention, and hazards posed by the specific contaminants at the site.

Once the site has been screened by the assigned ISST member, it is presented to the full ISST at its monthly meeting. One of the priority recommendations of high, medium, low, or no further action (NFA) is submitted to SDAR Section Supervisor for final management approval.

Potentially Responsible Parties (PRPs) of the release sites are then notified by letter of the priority ranking of their sites. Sites which are eligible for further investigation under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) are assigned to personnel in the Preliminary Assessment/Site Investigation (PA/SI) section. Sites which are ineligible under CERCLA are ranked medium or high priority by the ISST and assigned to a State Remedial Project Manager (RPM). Low priority sites generally do not have site managers assigned to them at this time.

During FY 1998, the ISST completed the screening of 25 sites with the following prioritizations: three medium priority, 11 low priority, and 11 NFAs.

#### Kakaako Brownfields Project

The Kakaako Brownfields Project Site is located in the makai area of the Kakaako Redevelopment District. The Honolulu Community Development Authority received a \$90,000 grant from the Environmental Protection Agency to conduct a Brownfields investigation in the light industrial area of Honolulu. The investigation area was divided into 10 units consisting of 19 State owned parcels. Facilities operating in the investigation area included: a shipyard, City and County maintenance facilities, University of Hawaii research facilities, a marine fuel supply business, and a former tuna packing plant. Soil and groundwater sampling was completed in August 1998. A laboratory analysis for metals, petroleum, volatiles, semivolatiles, pesticides and polychlorinated biphenyls (PCBs) is being conducted by the EPA's Contract Laboratory Program. Results are expected in late 1998.

## **Develop and implement a Voluntary Response Program (VRP)**

### Voluntary Response Program

This voluntary hazardous substance cleanup program was established in July 1997 when the Hawaii Environmental Response Law (Chapter 128D, HRS) was amended by Act 377, SLH 1997. The purpose of the law is to encourage the voluntary clean up and economic development of contaminated property. The law gives the Department of Health authority to grant prospective purchasers an exemption from future liability related to the contamination that is cleaned up under the program.

During the 1998 legislative session the law was amended to allow current owners to participate in the program and obtain a letter which would provide an exemption for subsequent purchasers of the property. This change is a major improvement over the original.

During FY 1998, the infrastructure for the VRP has been developed and the Department received its first two applicants to the program. These projects are currently underway and are setting the stage for the program to expand in the future. Also during this year the Department conducted substantial outreach to help create awareness and promote use of the program. In addition to offering a number of presentations to special interest groups, the Department also sponsored its first VRP Conference for a broad audience.

Since the VRP is designed to be a self-supporting program that can offer a valuable incentive to property owners, it has a great deal of potential to promote more environmental clean up at a reduced cost to the State. The Department is working to expand the program in future years.

## **Improve office operations.**

### Office Reorganization and Management

The HEER Office was reorganized in August of 1997. Previously, all staff reported to the HEER Office Manager. The reorganization created three operational sections and a clerical support section, each with its own supervisor. The Office Manager now manages through these supervisors.

### Data Management

During FY 1998 the HEER Office identified the need for better data management. Due to an increased demand for information that the HEER Office manages and growing technologies in computer and information systems, we plan to establish a data manager position in the future.

Recently, a web page was developed for the Internet that allows Internet users to retrieve commonly requested HEER documents and database files.

### Geographic Information System (GIS)

A GIS database was initiated in March 1998 by the hydrogeologist of the HEER Office. The following statewide geographical data layers were adopted from the Hawaii State Office of Environmental Quality Control (OEQC). They were installed in the HEER Office's GIS database. Updates to several of the data layers were performed by the HEER Office's hydrogeologist.

*Aquifer Systems* - The aquifer layers were modified so that users can easily review the different types of aquifers.

*Groundwater Wells* - Drinking water wells on Oahu were updated based on log data from the Safe Drinking Water Branch. Contaminated wells on Oahu were added to the database.

*Land Use* - Agricultural land use, forest reserve boundaries and coast lines were added to the database.

*Hydraulic Data* - Rainfall distribution, streams and wetlands and a watershed and drainage basin were added to the database.

*Street Maps* - In addition to the OEQC's street map, a detailed street map on Oahu created by City and County was added to the HEER Office's GIS database. This map allows users to process geo-coding and matching addresses.

The following three new geographical data layers were created in FY 1998. Development of these three layers will continue in the coming fiscal year.

1. Gas Stations and Underground Storage Tank facilities
2. Background Concentration Map for Selected Metals
3. Department of Defense Ongoing Remedial Investigation Sites

In addition to the three new data layers above, plans are in place to add notification information to the GIS database in the coming fiscal year.

#### Emergency Planning and Community Right-to-Know Act (EPCRA)

The HEER Office collected \$80,200 in Tier II reporting fees for FY 1998. As authorized by Act 260, SLH 1997, these fees were deposited into the environmental response revolving fund. The Department of Health is submitting the budgetary request necessary to distribute the fees collected to the Local Emergency Planning Committees (LEPCs) for their use in emergency planning. During FY 1998 all files dated before 1994 were entered into our data base for tracking. In FY 1999 we will be sending out copies of each facility's reporting history for reconciliation with their files.

#### Public Inquiries

During the year, the HEER Office received 500 or more inquiries from the public regarding health concerns and exposure hazards. These calls are handled by the Hazard Evaluation Section staff who provide this service to the community.

## **Develop initial components of a chemical release prevention program.**

### Hawaii Pipeline Corrosion Control Coordinating Committee

This Committee was formalized under DOH for administrative purposes in compliance with Act 148, SLH 1997. Pipeline operators meet quarterly to promote pipeline safety. A depository for pipeline maps has been established with future placement into the Environmental Geographic Information System (EGIS) planned. The committee acts as a forum for sharing of information and technology. A database has been created to facilitate cathodic protection testing and interference mitigation of pipelines. Training for pipeline operators was provided by the State Department of Transportation's Office of Pipeline Safety.

### Four Counties Used Oil Collection Programs

The HEER Office provided \$175,000 to the DOH's Office of Solid Waste Management (OSWM) to be used by the four counties for their Residential "Do It Yourself" Used Oil collection programs. These funds cover a portion of the cost for the operation of the collection centers on the Neighbor Islands and the provision of "Oil Eater Boxes" to residents on Oahu. Technical guidance on best management practices regarding used motor oil is also provided to recreational boaters and other small generators as part of the OSWM program.

## **FY 1998 Responses**

During FY 1998, the HEER Office responded to 296 of 530 notifications. The Appendix "A" Release Notification Log, contains a listing of each of these notifications during the year. Many of these notifications were for small spills which were resolved in less than one day.

In addition, the HEER Office has a number of contaminated sites which require significant time and/or resources to resolve. Appendix "B" State Site List contains a listing of these sites along with pertinent information. Sites of particular interest which were managed by the HEER Office during FY 1998 are listed below. These sites include those at which the HEER Office provided assistance to other state programs:

## **Significant Site Summaries from the Emergency Response Section**

Grease Trap Waste/Illegal Dumping. On October 1, 1997, the HEER Office State On-Scene Coordinators (SOSCs), the Federal Bureau of Investigation and State Attorney General Investigators, and Honolulu police worked jointly to apprehend a dumper of grease trap waste. The dumper had pulled their vacuum truck up to the side of a bridge in rural Waimanalo and discharged about 350 gallons of the acidic mess into a stream bed. Samples were taken from the stream bed and the truck, and the stream bed was cleaned up by the HEER response contractor. The dumpers are being prosecuted.

Tire Pile Fire. On December 4, 1997, a shredded tire pile was intentionally set on fire in Maili, Waianae Coast. The tire pile, which is approximately 750,000 cubic yards in volume, was left by Industrial Technology (IT). HEER SOSCs brought in enclosed cab earth movers to provide access for Hawaii Fire Department and to divide up the pile. Sampling was also done to determine soil contamination levels from the fire and from alleged dumping of wastes by IT. HEER took the bankruptcy trustee to court to cause the trustee to set aside funds to contract for a thorough site characterization.

Fishing Vessel "Run Aground" Onto an Endangered Natural Resource. On September 30, 1997, the fishing vessel Corsair, one of the last Sampans, was pushed onto the Hawaiian reef off Kewalo Basin by high waves. Eight hundred (800) gallons of diesel fuel was on board and approximately 300 gallons was released into the water. The Federal pollution fund was opened up to the Coast Guard who then responded to the threat by removing the diesel fuel from the water. After the Coast Guard's response was completed, the pollution fund was closed again. Removal of the vessel itself and the debris was done by the responsible party (owner). The HEER Office SOSCs were called in to assist and spent one day monitoring and assuring that the wreck was finally removed.

Compressed-gas cylinders. In FY 1998 about 47 compressed gas cylinders washed ashore, mostly on Hawaii's windward shore. These cylinders varied in sizes and shapes. All were extensively corroded with little or no possibility of identifying the contents. These cylinders were either punctured in place or towed three miles out to sea then punctured. The majority of cylinders were found on Oahu; Kauai had the second most while Maui and Hawaii had only a few.

Lahainaluna High School. A student "logged" onto the Internet and obtained information on how to make a bomb from chemicals that can be found commonly in a chemistry laboratory. The student proceeded to make the bomb in school by mixing the necessary chemicals without the teachers approval or knowledge. During the procedure, the mixture exploded causing serious injury to the student's face and contaminated the classroom. The

HEER Office responded, identified the type of explosive, and cleaned up the classroom. Apparently, the student had made a shock-sensitive explosive which blew up in his face as he handled the final product.

Kalaupapa Settlement. The HEER Office conducted a removal action at the Kalaupapa Settlement, Molokai. The hazardous materials removed were old transformers, waste oil, water-contaminated diesel, old cold-tar patch drums, wood treating waste, lead-acid batteries, and waste paints. This removal action was logistically challenging, as everything (response equipment, heavy vehicles, supplies, etc.) had to be transported in and out on a barge.

Airport Group International (AGI) pipeline release. Aviation fuel began to bubble up in Keehi Lagoon on Oahu. During subsequent testing of the fuel facility's pipelines, AGI was found to be the responsible party. The pipeline which needed to be repaired was in 30 feet of water and approximately 20 feet buried. The pipeline was pressurized with air to locate the leak, then dredged to expose the problem area. The pipeline was repaired and put back into service within a week.

The University of Hawaii (UH), Manoa. In October 1998, a Resource Conservation and Recovery Act (RCRA) hazardous waste inspection revealed an area where many unknown chemicals had been stored for a long time. The RCRA Program requested assistance from the HEER Office on-scene coordinators to inventory the area in Bilger Hall. After an initial inspection, it was determined that an imminent and substantial endangerment to human health and the environment existed and the DOH issued a State Letter of Interest to the University.

Sizable quantities of laboratory chemical waste in all sorts of containers, residual and unused chemicals, mercury, water reactive chemicals, and shock sensitive (potentially explosive) chemicals, mixtures and unknowns, were improperly stored or abandoned within the basement confines of Bilger Hall and the Environmental Storage facility. The University of Hawaii contracted the services of Pacific Environmental Corporation to catalog and complete a hazard characterization, profile, package and stage all the chemicals for proper disposal to a permitted mainland disposal facility. The shock sensitive chemicals were detonated on the site under the direct supervision of an SOSC. The University was responsible for the response costs and subject to fines by the U.S. Environmental Protection Agency.

Stockpiled Chemical Wastes - Clandestine Laboratories. The HEER Office SOSCs and contractor, Pacific Environmental Corporation (PENCO), have responded in conjunction with the Honolulu Police Department (HPD) Narcotics Division to clandestine laboratories (Clan Labs) of various sorts.

These Clan Labs spring up sporadically in all types of locations solely for the production or conversion of Crystal methamphetamine (ICE). Throughout 1997-98 several "box" (mobile) laboratories were discovered in the trunks of stolen and/or abandoned vehicles and some during routine traffic stops. The HEER Office's role is to remove and properly characterize the chemicals, then dispose of all hazardous chemicals, chemical waste, residues, makeshift laboratory equipment, and paraphernalia. The HEER removal action occurs after the HPD Narcotics Unit has completed their case evidence collection process. In several instances where a Clan Lab is located on private property, such as an apartment, the SOSOC has made recommendations to the property owners on the proper methods and to what degree the cleanup is necessary. This past year a "Synthesis" or production laboratory was seized. This particular type of Clan Lab is of significance because the ICE "cooks" have the knowledge and all of the base materials to produce ICE from scratch. Synthesis labs, unlike conversion labs which convert previously manufactured methamphetamine to ICE, often present other dangerous situations (secondary devices, booby traps, explosive or toxic chemicals to destroy evidence or harm enforcement personnel and responders).

### **Significant Summary for Oiled Wildlife Response**

On July 22, 1997, a meeting of the natural resources trustees was held to develop a program to provide assistance for wildlife harmed by oil releases. The trustees agreed that Hawaii needed a facility to service oiled birds and marine animals from the main Hawaiian islands and the northwest chain. An Oiled Wildlife Steering Group (OWSG) was formed to develop the project and present a plan to the legislature. A permanent turn-key facility was determined to offer the best solution for response and treatment of oiled wildlife. The U.S. Coast Guard was charged with drafting a memorandum of agreement (MOA) defining the roles and responsibilities of all involved parties. It is expected this MOA will be finalized sometime during FY 1999. Major responsibility for the facility was divided among four agencies:

- (1) The Hazard Evaluation and Emergency Response (HEER) Office. The HEER Office will oversee funding of the facility through the Environmental Response Revolving Fund (ERRF).
- (2) The Department of Land and Natural Resources Division of Forestry and Wildlife (DLNR/DOFAW). The DLNR/DOFAW will provide a plan to staff the facility.



- (3) The Clean Islands Council (CIC). The CIC will produce a maintenance and inspection schedule/procedure.
- (4) The U.S. Coast Guard Marine Safety Office (MSO). The MSO will develop an operations plan for the transportation of animals and equipment.

### **Significant Site Summaries from the Hazard Evaluation Section**

The Hazard Evaluation Section provides public-health advice and technical support to DOH, other government agencies, and the general public, both residents and tourists. Television interviews with DOH toxicologists demonstrated the useful advice provided to the public on high-profile health concerns. From the many inquiries received by the toxicologist in 1998, the following details some of the most time-consuming health-hazard projects and illustrates a wide range of issues and problems addressed by the Hazard Evaluation Section.

James Campbell Industrial Park (CIP). A toxicologist from the HEER Office served as team leader of the Incident Assessment and Notification Team, and provided the Campbell Local Emergency Action Network (CLEAN) Committee with a set of recommendations based on the team's work on the project including:

- 1) Suggested approaches and specific means to assess hazards of airborne toxicant in incidents of unplanned areal releases in the vicinity of CIP and nearby communities.
- 2) Suggested pathways to notify the Incident Commander of incident hazard status.

The HEER Office toxicologist submitted a write-up to the Clean Air Branch after receiving a request for a toxicology/hazard evaluation write-up detailing criteria and non-criteria pollutants measured at CIP.

Maalaea and Other Landfill Fires. During a Maalaea Site visit, extensive sampling, analysis, and hazard evaluation was performed. A report on the Maalaea Landfill Fire was distributed as no public hazard was found. However, the legal case remains unresolved. During an Initial investigation of the Nanakuli landfill fire and site visit to the Olawala landfill fire the HEER toxicologist provided consultation to the Solid and Hazardous Waste Branch (SHWB).

Center for Disease Control (CDC) Funded Vog Project. After a request from the Environmental Planning Office (EPO), a toxicologist from the HEER Office helped to review a draft of the Clean Air Branch report on Year-1 of the

CDC funded Vog project. A write-up was submitted to the Clean Air Branch discussing HEER's role in the Year-1 Vog grant along with an explanation of scientific concerns of the Year-1 project. A proposal to perform a study on the possible acute health effects of Vog on children was submitted to the Region IX Environmental Protection Agency (EPA). We are currently awaiting EPA's review and decision.

Oil Spill Response Plans/In-Situ Burning. The HEER Office toxicologist revised and updated an In-Situ Burning Plan Draft document. Smoke monitoring equipment (nephelometers) were acquired and purchased. The toxicologist organized and held HEER nephelometer training sessions and completed on-water and tabletop exercises with U.S. Coast Guard, BHP, Chevron, Marine Spill Response Corporation, Clean Islands Council, and Civil Defense.

General Air Quality at Campbell Industrial Park. An SOSOC from the HEER Office in consultation with U.S. EPA, performed grab sampling (Summa & Tedlar) at upwind, downwind and cross wind locations in the James Campbell Industrial Park (CIP). The samples were analyzed in California by Performance Analytical Inc. The HEER Office Geologist, provided data analysis, and a written report with input from other professional staff from the HEER Office. The report has been completed and distributed.

Kapolei Middle School, Oahu. The Kapolei Middle School is now under construction; however, before construction was authorized on this site, the land was evaluated for any environmental-health hazards. Up to five years ago, this land was formerly under sugar cane cultivation. In November 1997, soil samples were collected by a toxicologist from the HEER Office, who took them to a laboratory to be analyzed for four herbicides (atrazine, ametryn, dalapon, diuron) which were typically used on sugar cane and which tended to persist in the soil for more than six months. The toxicologist then evaluated the laboratory results, assessed the possible health risk to future students and faculty, and wrote a memorandum which reassured the Department of Education (DOE) and the Department of Accounting and General Services (DAGS) that there was no public-health objection to the construction of the school.

Keaau High School and Keaau Elementary School, Island of Hawaii. Keaau High School is now under construction and Keaau Elementary School will soon commence construction. They are across the highway from each other. Before construction was authorized on these sites, the land was evaluated for any environmental-health hazards. Up to seven years ago, the Keaau High School's land was under sugar cane cultivation. Up to one year ago,

the Keaau Elementary School land was occupied by a macadamia nut orchard and is still bordered by what remains of the orchard.

In August 1997, both sites were evaluated by a toxicologist from the HEER Office, who found out which pesticides had been used on the sites, researched how long each pesticide would be expected to persist in Hawaii's soil and climate, decided what to test for in the soil, personally collected soil samples, and took them to a laboratory to be analyzed for four herbicides used on sugar cane (ametryn, atrazine, dalapon, diuron) and one herbicide (paraquat) used in macadamia-nut orchards. The toxicologist then evaluated the laboratory results, assessed the possible health risk to future students and faculty -- especially the very young, sensitive children expected at the elementary school -- and wrote a memorandum which reassured the DOE and DAGS that there was no public-health objection to the construction of the schools.

Kawaiahao School, Honolulu. Kawaiahao School accepts students from preschool age to third grade (age range 3-8 years old). Its playground has a high jungle-gym type of structure which is popular among the children and which requires a soft padding around its base to protect children if they fall. The soft padding was made of recycled rubber chunks from tires. Over the years, the rubber had deteriorated, so the children were going home with skin and clothes covered with black rubber dust containing low levels of chemicals (polycyclic aromatic hydrocarbons, PAH) which cause cancer in laboratory animals. The HEER Office toxicologist advised the school to dispose of the old rubber chunks and helped the school pick out a non-hazardous substitute.

Library of Hawaii, Princeville Branch, Kauai. The State Department of Accounting and General Services (DAGS) and Department of Education (DOE) brought this project to the HEER Office toxicologist for evaluation of health hazards on the site. The evaluation was to be in the same manner as what is being done for proposed schools. The land had been given to the State by the Princeville Corporation, who had accepted it and begun construction on the site before it was brought to the attention of the HEER Office.

The land had been under sugar-cane cultivation ten years ago, and had been part of a golf course up to two years ago. Unfortunately, by November 1997, when the HEER Office was informed of this project, the soil had already been bulldozed and disturbed and could not be evaluated reliably for pesticides. Furthermore, the library was being built downwind, southwest, of a golf course, and the building's air intakes were pointed to the northeast, in the direction of the golf course, which uses a greater variety and quantity of

pesticides than sugar-cane cultivation does. A memorandum was sent informing the Library of Hawaii of the potential for future pesticide exposure to the library branch's staff. The issue was later discussed between the toxicologist, the librarians, and the Attorney General's Office.

Kamehameha School, Honolulu. Kamehameha School's kindergarten building has a central courtyard which is used as a playground and is almost completely surrounded by the kindergarten building. During one weekend in January 1998, the courtyard was resurfaced with a shock-absorbing mat of rubber chunks encased in thick layers of polyurethane. The following Monday, the resurfacing work was allowed to proceed during normal school hours, and a teacher and a few children complained of the chemical odors. The teacher called the HEER Office. Toxicologists and other technical personnel inspected the project and had air samples analyzed for chemical contaminants (methylene diisocyanate and carbon disulfide). The laboratory results were evaluated by the toxicologists, who estimated a minimal health risk with no lingering effects. This verdict is still disputed by the teacher and one child's parents.

Skeet Club Beach, Kailua, Oahu. The Skeet Club Beach is a jagged-lava shoreline with a minimum of sandy beach area. Twenty years ago, a skeet club existed on the site, and lead-arsenate pellets were fired over the land and into the waters of Kailua Bay. A suburb was subsequently built on and around the site. The pellets continue to wash up on shore, though they are mostly found in pockets of the lava bed, which is so jagged that it threatens bare feet and shins. In April 1998, a toxicologist from the HEER Office determined that the lead-arsenate pellets were not a public-health risk, since they were all coated with a protective layer of hard-water minerals from contact with salt water. Neither lead nor arsenic is released into Kailua Bay and children will not be swallowing the pellets because of the hostile lava field. In June 1998, the site was reviewed by personnel from the U.S. Public Health Service's Agency for Toxic Substances and Disease Registry, in response to a public request. Their written report eventually coincided with our viewpoint.

Kalihi and Palolo Valley Watersheds, Oahu. Power lines of the Hawaiian Electric Company are strung through the forests of Kalihi Valley and Palolo Valley. The vegetation must be kept clear of the power lines, either by manual cutting, the limited application of herbicides, or a combination of the two. The Neighborhood Boards of those two districts are objecting to the use of herbicides in the watersheds, and the Honolulu Board of Water Supply is also concerned about the possibility of groundwater contamination. Surveillance of the choice of herbicides, their persistence in the environment,

and their application procedures is still in progress by HEER Office toxicologists.

Waipio Gentry, Waipahu, Oahu. Waipio Gentry is a suburban development which first opened in 1977. At the time, it was situated on former pineapple-field land and was completely surrounded by actively cultivated pineapple fields. A small cluster of lung cancer cases was investigated -- an unusual cluster involving several nonsmoking, married couples who had been living on one street since 1977. This request came from one of the affected persons. An SOSC and a toxicologist from the HEER Office collected soil samples which were analyzed for the pesticide DDT and heptachlor and their environmental breakdown products. The residues in the soil proved to be insignificant. However, there were three other cancer-causing pesticides which were injected into the soil of pineapple fields in 1977-1983, which would have evaporated out of the ground and drifted downwind to residences. A similar exploration for lung-cancer clusters is planned for Whitmore Village in Wahiawa, which is similarly surrounded by pineapple fields.

Waimanalo Orchid Farm, Oahu. Hawaii State laws grant every landowner the right to farm. This accounts for flower farms and horticulture businesses existing adjacently to and upwind of residential districts in Kaimuki and Waimanalo. An orchid farm in Waimanalo was investigated jointly by a toxicologist from the HEER Office and someone from the Department of Agriculture's Pesticides Branch, in response to a complaint from a family residing next door. The Pesticides Branch monitored the family's property before and after pesticides were sprayed. The spraying produced levels of Dursban (chlorpyrifos), an insecticide used in the treatment against white flies, in the family's living room and on their fruit trees and ti leaves. The Dursban levels were calculated to be non-hazardous to human health, even if breathed or eaten by small children. The orchid farm's use of fungicides will be evaluated.

Fiberglass Work in Residential Areas, All Islands. Many residents work on fiberglass surfboards or boats at home. The work intermittently generates acrid-smelling vapors of styrene, and the neighbors complain to the DOH. The air in and around the home of a professional surfer living in Waialua, Oahu, was measured for styrene by a toxicologist from the HEER Office, as requested by the landlord. The levels were not hazardous even while standing next to a dripping surfboard, as well as to the babies living next door, 60 feet away. The human nose can detect styrene at one one-thousandth of the level which can cause eye or nose irritation. This result will be checked against other measurements of fiberglass work, whenever complaints are received.

H-POWER Incinerator, Oahu. To conserve landfill space, H-POWER municipal waste incinerator is conducting pilot projects to explore other possible uses of their incinerator ash. However, the ash is contaminated with lead, cadmium, chromium, and other toxic metals, so that the possible uses of ash must not contaminate the environment and cause public-health hazards. By request of the DOH Office of Solid Waste, a toxicologist from the HEER Office provided oversight for the two projects. Using contaminated ash to cover dumped garbage at the end of each day was found to be sufficiently non-hazardous if certain procedures were followed. A road at the H-POWER plant has been paved with a mixture of asphalt and incinerator ash, and its deterioration will be closely studied for the next few years.

## **Significant Site Summaries from the Department of Defense State Memorandum of Agreement**

### **Army Installations**

Aliamanu Military Reservation. The Aliamanu Military Reservation is located in the Aliamanu Crater. The installation has 2,597 housing units and 154 ammunition storage bunkers/tunnels along the crater rim. The bunkers are 200 feet long, 12 feet wide and 12 feet high with concrete floors and gunite-lined walls. The bunkers were used to store munitions placed on wooden pallets. In the 1960s, the pesticide Paris Green (copper acetoarsenite) was used to combat dry wood termite infestation of the wooden pallets and crates in the bunkers. Paris Green was dusted over crates and pallets and applied in the wall floor interface. The tunnels were not decontaminated before abandonment in the mid 1970s. In a site evaluation in June 1994, sampling results showed arsenic contamination levels up to 34.1 mg/kg and copper contamination up to 2,270 mg/kg in soil. The evaluation conducted was not a comprehensive sampling program as it concentrated on contamination of the air and surfaces in the bunkers. The Army has completed its remedial investigation (RI) which involved an extensive number of surface and subsurface soil samples to investigate the extent of arsenic contamination on the site. The RI report identified some arsenic and contaminated areas, but the contamination levels were not high enough to require any remediation.

Camp H. M. Smith. A transformer containing PCB was stolen and stripped in a remote area of the base and the PCB transformer oil was discarded on the ground. An initial cleanup of the PCB contaminated soil was conducted in 1981. Further studies conducted by Naval Energy and Environmental Support Activity (NEESA) in 1990 indicated that a further cleanup was necessary. Cleanup removal action of the PCB contaminated soil has been completed.

Kahuku training area. A PA/SI final report was completed for the former transformer sites associated with the former Nike Launch sites at the Kahuku Training Area in February 1996. Polychlorinated biphenyls were detected above the EPA Region IX Preliminary Remedial Goals. Further investigation of the site was performed during FY 1998. However, the nature and extent of contamination have not been confirmed. Additional remediation is planned possibly for FY 1999.

Kilauea Military Reservation. A PA/SI final report was completed for Kilauea Military Camp in May of 1995. Remediation continued over the past three years. A final closure report was submitted to the HEER Office for the Tank 86-1 in late FY 1998.

Kipapa Ammo Storage Tunnels. A PA/SI report was completed for the Kipapa Ammunition Storage tunnel in February 1996. Onsite releases of hazardous substances were not observed during this preliminary assessment (PA) nor were records of such releases found in the documents reviewed. Tunnel interiors were not included as part of this investigation and, therefore, site characterization has not been completed. In addition, a monitoring well at the Air Force's Kipapa Fuel Storage Annex adjacent to the Kipapa Ammo Storage Tunnel had trichloroethylene (TCE), a solvent, in the basal groundwater. The source of the TCE and the extent of contamination by TCE is not known at this time. The HEER Office has met with both the Air Force and the Army to encourage their cooperation in the investigation of TCE in the basal groundwater.

Pohakuloa Training Area. A site inspection report was reviewed for a vehicle refueling area and the Department of Health concurred with the Army that future remedial activity

does not appear to be necessary for this site. The site inspection reports were reviewed for a pesticide storage area, two landfills and a former fire training area and recommended additional characterization of the fire training area for polychlorinated biphenyls (PCBs) and dioxin, testing at Landfill 1 and Landfill 2 for soil gas and methane, and characterization of the soil cover at Landfill 1.

Schofield Barracks. Trichloroethylene (TCE) has been detected in the drinking water wells at Schofield Barracks. The Army has been aerating the water to volatilize the solvent out of the water to protect public health. Additionally, the Army has been investigating the vicinity in order to find the source of the contamination and to eliminate a future threat. To date, no source has been found; therefore, the Army is proposing to treat all the groundwater that is contaminated as the final remedy. Regular monitoring of the wells in the area will continue. Individual Record of Decisions (RODs) have been signed for the remaining sites. Work has been completed in repairing the cracks on the landfill cap. The Army has sent a request to the EPA to have the site de-listed from the National Priorities List (NPL).

Tripler Army Medical Center Landfill. The Tripler Army Medical Center (TAMC) Landfill is located on the west side of the TAMC installation. The landfill covers about two acres and is about 160 to 200 feet above mean sea level. The landfill was active from 1947 through 1974. Early landfill use was restricted to construction debris from the construction of TAMC. Later, the landfill was used to dispose of incinerated medical waste, laboratory wastes, maintenance waste, food waste, and construction and landscaping debris. Unspecified waste from Fort Shafter was also disposed in the landfill.

The Army conducted a Preliminary Field Screening Investigation to determine the presence or absence of hazardous substance contamination from the landfill operation. The investigation found polynuclear aromatic hydrocarbons, pesticides, lead and dioxin chemicals in the surface and subsurface soils in the interior of the landfill. Monitoring wells were installed down to the basal groundwater aquifer and analysis results of the water found no chemical contamination.



The Army conducted a remedial investigation (RI) with soil and groundwater sampling. The remedial investigation confirmed the levels of dioxin, PCB and pesticides in the surface soil, subsurface soil and sediment. To address any human health risk posed by the contaminants, the Army will be installing a cap over the landfill and a concrete drainage channel to handle the rain water runoff from the landfill.

### **Navy Installations**

#### Defense Reutilization and Marketing Office (DRMO) - Manana.

The DRMO Manana storage area is a 51-acre parcel of land in Pearl City which is off Waimano Home Road. The DRMO storage area was used for the collection and temporary storage of hazardous waste generated by the Department of Defense, Pacific Rim military facilities. It was also used to store excess equipment and supplies that were turned in for disposal handling. The site investigation found arsenic contamination in the subsurface soil down to four feet. In May 1996, the Navy completed a cleanup action with the removal of the arsenic contaminated soil. The DRMO Manana storage area parcel was transferred to the City and County of Honolulu in June 1996. In FY 1997 the Navy completed plans to install ground water monitoring wells at the site. These wells were then installed in FY 1998.

Ewa Junction Fuel Drumming Facility. This Navy facility was constructed in 1943 as a fuel drumming and transportation terminal and is currently inactive. According to a 1972 Navy report, approximately 315,000 gallons of motor gas (MOGAS) from an underground storage tank was released onto the surface of the ground in March 1971. MOGAS was found in soil and ground water samples obtained from beneath the site. A Phase II Remedial Investigation sampling action is planned for 1998. Sampling of subsurface soil and groundwater in the off-site area to the south has been completed to determine if any MOGAS contamination traveled off of the site. Analytical results are forthcoming.

Naval Computer and Telecommunications Area Master Station (NCTAMS). The NCTAMS facility was placed on the National Priorities List (NPL) in May 1994. NCTAMS is composed of two sites, a Naval Radio Transmitting Facility (NRTF) at

Lualualei and the main station and a receiver site in Wahiawa. NCTAMS Wahiawa is located on the eastern side of the highest part of the Schofield Plateau and about one mile east of Whitmore Village. The Lualualei Naval Radio Transmitting Facility is located in Lualualei Valley and is contiguous with Naval Magazine Lualualei. Earlier site investigations done at the sites found PCB contamination in the soil around electrical transformers. It was learned that maintenance technicians checking the transformer oil, which contained polychlorinated biphenyls (PCBs), were discarding the oil samples onto the ground around the transformers.

In 1991, the Navy conducted a removal action by excavating the PCB contaminated soil around several of the transformers and sending it to the mainland for proper disposal. This site investigation identified 15 sites which require further investigation at NRTF Lualualei and NCTAMS Wahiawa. The Navy has completed the remedial investigation at the Old Wahiawa Landfill and the Building 6 Disposal Area. The Navy has also completed plans for removal action at the transformer sites at both NCTAMS facilities to excavate PCB contaminated soil and store it for treatments. Field work has been started.

Naval Station Pearl Harbor - Aiea Laundry. The Aiea Laundry is a laundry facility owned and operated by the Navy which has done dry cleaning since the early 1950's. The facility is located on the corner of Moanalua Road and Kaimakani Street in Aiea. St. Elizabeth Church and School is on the west side of the laundry with Aiea Elementary School to the east. Site investigations have found releases of dry-cleaning solvent (perchloroethylene) and Stoddard solvent from several underground storage tanks and from a drainage swale outside the facility. Solvent and solvent vapors remain in the soil beneath the site. The contaminants include perchloroethylene, trichloroethylene and vinyl chloride, which is a known carcinogen.

A soil vapor extraction system which was operating onsite and removing contaminant vapors, especially vinyl chloride, from the soil has been turned off to pulse the system as the level of contaminant removal has declined significantly. Ground water sampling from recently installed monitoring wells have found

diesel fuel in one well and perchloroethylene in three wells on the south side of the site. Diesel fuel is being removed.

The Navy has completed a Field Sampling Plan to install four ground water monitoring wells to see if contamination in the ground water has migrated off the site. The plan also calls for soil sampling under the concrete floor of the dry-cleaning facility.

This is one of a few sites slated for transfer to the Department of Hawaiian Home Lands (DHHL) from the federal government. The HEER Office is working with the DHHL to ensure that all remedial activities are completed to the satisfaction of the State before acceptance.

Pearl City Fuel Annex. The Pearl City Fuel Annex is located on the Pearl City Peninsula and is operated by the Navy's Fleet Industrial Supply Center. The facility consists of five above ground storage tanks for the storage and pumping of bulk aviation fuels. Records indicate that tank and pipeline leaks have occurred in the past with a 10,000-gallon JP-4 (a jet petroleum fuel), release recorded in December 1980. Soil and groundwater sampling have uncovered arsenic, lead and petroleum hydrocarbon contamination in the soils and petroleum hydrocarbon contamination in the groundwater on the site. The Navy completed, the Removal Site Evaluation Report and will determine if a response action needs to be conducted.

Pearl City Peninsula Landfill. The landfill is located on the north shore of Middle Loch and operated from 1965 until 1976. The site is currently capped with a two-foot thick layer of crushed basalt. An Investigation indicated the presence of dioxin, polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), trichloroethylene (TCE), and fuel products. The Navy is planning a removal action and has developed the Engineering Evaluation/Cost Analysis (EE/CA). The removal action involves repairing the present cover on the landfill and excavating the dioxin contaminated ash layers from City and County property and placing the contaminated ash on the Navy's burn disposal area and covering the ash with clean soil.

#### Pearl Harbor Naval Shipyard - Battery Shop Building 394.

The Battery Shop is an open air facility that was used prior to 1990 to clean, disassemble and restore lead-sulfuric acid batteries. An estimated 60,000 gallons of battery acid fluid was discharged into an unlined disposal pit on the site. Lead residues from battery disassembly operations were also disposed in the pit. Site investigations have found high lead contamination in the former pit area and in the surface soil around the battery disassembly area. Lead contamination in the soil was as high as 214,000 parts per million (mg/kg). The Navy conducted further site investigations to determine the extent and concentration of the lead contamination on the site. The Navy is now proposing to conduct removal action by using an in-situ electrokinetic process which is supposed to remove the lead from the contaminated soil. A bench test has been completed on the lead contaminated soil for the electrokinetic process. Further bench testing is continuing.

Pearl Harbor Naval Shipyard - Building 8. Building 8 is located in the Naval Shipyard Industrial Area on the East Loch of Pearl Harbor. It served as a power plant, an equipment test facility and a pipe-fitting shop. Site investigations revealed that subsurface oil is accumulating within Building 8 sumps and other subsurface structures adjacent to the building. During heavy rainfall events, oil sheens in Pearl Harbor around Dry Dock No. 1 are believed to be caused by oil migrating along the conduits of the Building 8 storm drain system and into Pearl Harbor. An oil plume up to several feet thick has been identified in the ground around Building 8. The Navy has installed an active extraction system to contain and extract the oil from the plume under the site. The system is working well and more than 9,000 gallons of oil recovered since July 1997.

Pearl Harbor Naval Shipyard Building 68. Building 68 is an electrical repair shop located in the northeast section of the naval shipyard. From approximately 1950 through 1979, the shop serviced electrical transformers containing PCB dielectric fluid. During this period, PCB dielectric fluid was reportedly disposed into catch basins located adjacent to Building 68. Approximately 50 to 55 gallons of PCB transformer fluid were discharged to these catch basins per year. These catch basins drain into Pearl Harbor. A sampling of sediments in the catch basins found polychlorinated biphenyl (PCB) contamination ranging from 21 mg/kg to 1,130 mg/kg.

The Navy conducted a time critical removal action in the catch basin where PCB contaminated sediments were removed and a coating was applied to the interior surface of the catch basin.

The Navy is regularly sampling the catch basin sediments to determine if more PCB contamination is entering the catch basin.

Pearl Harbor Naval Shipyard Oscar 2 Pier. The Oscar 2 Pier is located on the western corner of the naval shipyard. The site is adjacent to Building No. 177, a power plant which is no longer in service. Black oil was noted on the northwest shore off of the Oscar 2 Pier. The oil appears to be old residual fuel oil with a tar like viscosity much like the Navy Special Fuel Oil. Two permanent oil extraction wells, installed in the past to collect oil in the ground and prevent it from going into Pearl Harbor, are located near the site. To stop the release of oil presently going into Pearl Harbor, the Navy has decided to install a passive trench recovery system about 150 feet long along the shoreline at the site. The passive trench recovery system has been installed and is working well.

Pearl Harbor Naval Station Ford Island Landfill. The Ford Island Landfill is located on the southwestern end of Ford Island. This site was used for burning and disposal of solid wastes from the 1930's through the 1980's. The wastes came from the Naval Air Station on Ford Island and are made up of waste parts and metal scraps. A site investigation revealed contaminant concentrations in the groundwater under the landfill below levels that would pose a threat to Pearl Harbor; however, debris on the surface of the landfill would pose a potential threat to people who may use the landfill in the future for recreation. As a result, a cap was placed over the landfill and was completed in December 1996. Ground water monitoring is being performed quarterly.

Pearl Harbor sediment's study. The Navy is conducting a study of the sediments in the Pearl Harbor basin to determine what effect the Navy's operation at Pearl Harbor has had on the harbor itself. The site encompasses the entrance channel to the estuary, West Loch, Middle Loch, East Loch and Southeast Loch. Naval operations conducted adjacent to the site have included fuel storage, handling, transfer and recycling facilities as well as operation, maintenance and support facilities and military landfills.

Past waste handling and disposal methods, although acceptable at the time, may have caused unexpected long-term problems at some locations through the release of toxic and hazardous substances into the soil and ground water at sites surrounding the estuary as well as the estuary itself.

The Navy has developed a sampling and analysis plan for the remedial investigation (RI) of the harbor sediments. The sampling of the sediment and the fish in the harbor was completed in November 1996. Analytical results of sediment and fish and crab tissue have been received. The evaluation of the analytical results of fish and crab tissue showed PCB and pesticide contamination. As a result, the Department of Health issued a fish advisory against eating fish caught in Pearl Harbor.

Pearl Harbor subsurface fuel investigation. The subsurface fuel investigation site encompasses three areas: Area 1 consists of abandoned underground tanks; Area 2 includes the Public Works Center gas station, the fuel reclamation facility and the diesel purification plant; and Area 3 consists of scattered underground storage tanks and fuel lines in the Halawa Service Station and Hotel Pier area. The types of fuel that are present on the site are diesel, gasoline, JP-5 (a jet petroleum fuel), kerosene, Navy Special Fuel Oil, Bunker C and lubricating oil. Free product plumes have been found in all three areas.

The Navy recently completed a Phase II sampling effort in the RI to better assess the nature and extent of soil and ground water contamination with petroleum fuel. Based on the results of the RI, the Navy is looking toward a removal action of free product plumes to the extent possible. The Navy has completed plans for a Removal Site Evaluation. The EPA Superfund Innovative Technology Evaluation (SITE) program is testing three technologies to remove the free product fuel oil. The test programs presently being conducted are using the vacuum, surfactant and thermal processes to enhance oil extraction.

PWC transformer sites. Nine transformer sites are located within the Pearl Harbor area. Previous environmental investigations identified these sites as potential health and/or environmental concerns on the basis of detection of

polychlorinated biphenyls (PCBs) in the soil and/or on the concrete pads surrounding the transformers. The Navy has completed removal action plans to excavate the PCB contaminated soil and store it for treatment.

Red Hill Oily Waste Disposal Pit. This site was constructed in the early 1940's and is located within the Red Hill fuel tank farm area. An unlined pit located in the central portion of the site was used for the disposal of oily residues generated during periodic fuel tank cleaning operations and oily waste generated by leaks and drips from fuel piping systems associated with the Red Hill fuel storage tanks. The unlined pit was replaced with a stilling basin made of gunite and asphaltic-concrete in 1972.

The Navy conducted a remedial investigation of the site and found petroleum hydrocarbon and polynuclear aromatic hydrocarbon contamination in the subsurface soils where the old unlined pit was located and under the stilling basin. Petroleum hydrocarbon contamination was also found in the shallow ground water system located under the stilling basin. Based on these results, the Navy conducted removal action which involved removing the stilling basin and the petroleum contaminated soils under the stilling basin and where the old unlined pit was located.

To determine whether the petroleum hydrocarbon contamination did infiltrate into the basal groundwater aquifer, the Navy has installed monitoring wells into the basal aquifer and sampled the basal groundwater. Analytical results are forthcoming.

Naval Air Station (NAS) Barbers Point. In 1993, the Base Closure and Realignment Commission placed NAS Barbers Point on the Base Realignment and Closure (BRAC) list. The base is scheduled to close on July 2, 1999. The Barbers Point BRAC Cleanup Team (BCT), made up of Navy, EPA, and State of Hawaii representatives was formed to make decisions on closure-related environmental efforts to be performed by the Navy. The Governor signed the Community Redevelopment Plan providing an overall reuse strategy for the conversion of the base to civilian use after its closure in 1999. A Restoration Advisory Board (RAB) was established in 1994 to allow for community involvement in the environmental

decision-making process. A cleanup of the sites has been initiated to meet reuse strategy and transfer dates.

### **Marine Corps Installation**

Kaneohe Marine Corps Base. Five areas of concern have been identified on the base and these include a fuel farm sludge disposal area, two landfills, a fire fighting training area, and one old maintenance area. A variety of hazardous substances are present in the five areas of concern. Geographically, the Kaneohe Marine Corps Base is ecologically sensitive because it is surrounded on all sides by water (Kaneohe Bay is to the west, the Pacific Ocean to the north, Kailua Bay to the east, and Nuupia Ponds to the south). Nuupia Ponds is a wildlife refuge where five endangered species reside. One endangered species, the green sea turtle, also uses the Kaneohe Bay. Kaneohe Bay is a popular recreation area for boating, snorkeling, scuba diving, and other water sports.

Quarterly monitoring of groundwater wells are being conducted at the Fire Fighting Training Area. Bio-slurping in the area of the Fuel Farm Sludge Disposal Area began in FY 1997. An Expanded Site Inspection (ESI) was submitted to EPA for review. EPA determined that conditions currently do not warrant placing the site on the National Priorities List (NPL).

However, activation and expansion of the existing bio-slurping system was performed in 1998. Funding was made possible as part of the BRAC Barbers Point construction associated with the Navy's move to Kaneohe Marine Corps Base. Additional information is being gathered to complete the evaluation of the site.

### **Air Force Installations**

Bellows Air Force Station (AFS). Site investigation, sampling and remediation at Bellows AFS is ongoing. Multiple areas of concern are currently being investigated.

*Bellows' World War II 50,000 Gallon Above Ground Storage Tanks Closure* - The Air Force closed in place six inactive,



World War II, 50,000 gallons aviation gasoline aboveground storage tanks (ASTs) located in a horizontal tunnel. The wastewater from these tanks containing elevated levels of benzene was removed, treated and used to irrigate revegetated areas in Bellows. The 1,920 linear feet of associated pipelines were removed. A steel-reinforced concrete masonry unit wall will be installed at the tunnel entrance to seal off the ASTs. A closure document for this project is currently awaiting the Department of Health's (DOH's) signature.

*Bellows Underground Storage Tank Project* - Under this project four underground storage tanks (USTs), 3,362 linear feet of pipeline, and six dispensing stands with associated appurtenances, were removed. The HEER Office reviewed the results of the confirmatory soil and groundwater sampling and determined that there were no contamination levels above the DOH's Tier 1 action levels.

*The Bellows Excess Land* - Several acres of land in Bellows were declared excess and will be deeded to the State of Hawaii and the Navy. These areas are being prioritized for site investigation and remediation.

Geophysical surveys were conducted to locate USTs on 41 potential UST sites on the excess land. The project is expected to be completed during the next fiscal year. Currently, final closure reports for nine USTs on the excess land were submitted and signed by the Department of Health.

One UST removal site by Inoaole Stream needed further investigation due to the high levels of petroleum hydrocarbon contamination in the soil. The HEER Office recommended determining the extent of contamination. Soil sampling indicated a limited petroleum hydrocarbon contamination and there was no evidence of the contamination reaching the groundwater. The closure document for this site is still being reviewed.

Further investigation of two former wash rack areas on the excess land for semi-volatile organics in soil was recommended by the HEER Office. Results of the resampling and risk evaluation are currently under review.

*Landfills/Dump Sites* - Preliminary work, including a geophysical survey, was completed for an engineering evaluation/cost analysis (EE/CA) of four landfill and dump sites. A HEER Office Remedial Project Officer reviewed Draft Work plans and is currently waiting for the Air Force's response to comments.

The HEER Office is currently reviewing the report of a site investigation (SI) of a former dump site near the Old Pier. Work included trenching and collection of soil and groundwater samples.

A limited remedial investigation (RI) was conducted at a former tar and asphalt pit. These included the removal of the asphalt-enriched soil, removal of drums/remnants, sampling the soil and groundwater, and a limited ecological risk assessment around the site including Waimanalo Stream. The RI concluded that there were no chemicals of concern (COC) above the DOH Tier 1 action levels in all media sampled and recommended the site for no further action (NFA). The RI report is still being revised by the Air Force because the DOH still has some concerns.

*Areas of Concern* - Site inspections were completed for the following five areas of concern (AOCs): (1) a transformer site; (2) a medical waste dump; (3) a tank with unknown contents; (4) a bomb dispersal area; and (5) the Community Dump site. Reports for these five sites were reviewed by the HEER Office and four of the five were recommended for no further action (NFA). The medical waste dump needs further investigated.

*Multiple Drum Removals*- A total of 101 drums/remnants were removed from Bellows. Only two drums in the former sub-depot area were found to contain hazardous materials and were transported to the mainland for disposal. These drum sites are still being investigated because of elevated polyaromatic hydrocarbons (PAHs), heavy metals and pesticides. The final report for multi-drum removals at Bellows was submitted to the HEER Office.

Hickam Air Force Base (AFB). Site investigation, sampling and remediation at Hickam AFB is an ongoing process. Multiple areas of concern are currently being investigated.

*Runway 8L Site* - The sites related to the transfer of Runway 8L and adjacent lands to the State of Hawaii Department of Transportation, have been characterized. The characterization is intended to support either a no further action decision (NFA) or further evaluation. The Runway 8L site has been divided into subsites for remediation purposes. These subsites consist of two major drainage canals, two fuel spill sites, four landfills, a fuel distribution pipeline, a leach field, and one area previously containing abandoned drums. Sampling results were reviewed by the HEER Office in coordination with the Air Force and follow-up investigations were recommended.

*Underground Storage Tank and Fuel Distribution and Storage System Components* - A comprehensive Remediation Management Plan was developed by the Air Force to address contamination from previously-closed USTs and fuel distribution and storage system components at Hickam. The plan develops a multi-year strategy to locate, characterize, remove and cleanup approximately 590 existing components. Under the project, 18 underground storage tanks (USTs) were closed and eight UST locations were characterized. The HEER Office reviewed all site closure and site characterization reports and coordinated with the Air Force to resolve comments.

*Subsurface Fuel Plume Investigation* - A subsurface fuel plume delineation and recovery for three large fuel spill sites were continued from the previous year. The project conducted an air monitoring study in an area of the fuel plume with heavy residential and commercial activities and demonstrated that there was no excessive risk to residents and workers in the area. The Bioslurper pilot test was expanded in coordination with the HEER Office. The project will produce a comprehensive plan to cleanup one of the largest fuel plume sites on Hickam AFB.

*Other Areas of Concern* - A Site Inspection was completed to characterize other areas of concern at Hickam AFB to determine if they pose a risk and if they qualify for additional action under the Installation Restoration Program (IRP). The project collected chemicals at 13 areas on Hickam AFB, including potential flight line spill sites and an area identified by the HEER Office as a potential fire training area. The reports are currently being reviewed by the HEER Office.

Fort Kamehameha. Data was collected at areas of concern to support the development of an Air Force Relative Risk Evaluation Ranking for nine locations on Fort Kamehameha. This project is being paid for by the Army and managed by the Air Force. The draft report from this effort is currently under review by the HEER Office. A draft work plan was reviewed by the HEER Office for an Engineering Evaluation/Cost Analysis Work at a large landfill underneath the Mamala Bay Golf Course, on former Fort Kamehameha land. A comprehensive multi year underground storage tank removal program was initiated for Fort Kamehameha to verify and remove underground storage tanks associated with Army activities at Fort Kamehameha.

Hickam Petroleum, Oil & Lubricant (POL) Pipeline and Fuel Storage Annexes (FSAs). A remedial investigation (RI) and installation restoration assessment continued during FY 1998 at the Waikakalaua Fuel Storage Annex (FSA), the Kipapa FSA and a Valve Pit area.

*Waikakalaua Fuel Storage Annex* - At the Waikakalaua FSA RI fieldwork is focused on installing monitoring wells to the Pearl Harbor basal aquifer. The monitoring wells are near two open-bottom disposal basins and installed off-site. Also, there is a Pearl Harbor basal aquifer monitoring well approximately one-eighth mile south of the FSA boundary. As monitoring wells previously drilled in these areas have shown, petroleum contamination is evident in discrete zones (preferential pathways) in the saprolite and solid basalt. Moderate levels of the total petroleum hydrocarbon (TPH) as well as benzene, toluene, ethyl benzene and xylene (BTEX) contamination has been detected.

A pilot-scale bioventing system has been expanded and will be used to remediate subsurface contamination at the open-bottom disposal basins in the near future. The newly-installed Pearl Harbor basal aquifer monitoring wells will provide information necessary to refine the Vadose zone numerical model (SESOIL) and the groundwater numerical model (Bioplume II) being used to support the presumptive remedy of natural attenuation for petroleum contaminants found in the Pearl Harbor basal aquifer.

*Kipapa Fuel Storage Annex* - At Kipapa FSA soil borings were installed on the plateau above the Kipapa underground storage tanks (USTs). The borings above the middle of the Kipapa USTs showed little to no contamination while the borings above the front of the Kipapa USTs detected intervals of significant petroleum related contamination which will be addressed by a pilot-scale, solid basalt bioventing system.

Pearl Harbor basal aquifer monitoring is being conducted on the plateau currently occupied by Noholoa Park, Hanalani Schools and Hokualii Hale Townhouse development. The area between the front of the Kipapa USTs and Kipapa Stream is an area where past waste disposal has occurred and is impacting the shallow groundwater associated with Kipapa Stream. The analytical results for soil and groundwater have confirmed previous findings that significant levels of petroleum contaminants exist in the Vadose zone and shallow groundwater which extends to Kipapa Stream. No contaminants were found in Kipapa Stream surface water samples that exceeded either the applicable, relevant and appropriate requirements (ARARs) or the to-be-considered (TBC) requirements.

Laboratory problems have made much of the subsurface volatile organic compound (VOC) data unusable for risk analysis and this data will be resampled in FY 1999. When electrical power is available, an expansion of the existing bioventing system to remediate the Vadose zone along with implementation of a pilot-scale air sparging system to remediate the shallow groundwater, will begin. Surface soil sampling for lead contamination in a small area was completed with some samples detecting elevated lead levels, leading to uncertainty that the total extent of the problem has been defined.

Due to delays caused by the unusable, Kipapa FSA VOC data and the anticipated FY 1999 resampling effort, the draft final RI report is now expected in March 1999.

*Valve Pit #17 (VP17)* - At VP17 three shallow groundwater monitoring wells and a Pearl Harbor basal aquifer monitoring well were installed around the valve pit. Data from one shallow groundwater monitoring well showed significant levels of benzene, toluene, ethyl benzene and xylene (BTEX)

contamination and a thin layer of petroleum floating in the water, while the other two shallow groundwater monitoring wells were free of contamination. Only low levels of THP-diesel range organics were detected in the Pearl Harbor basal aquifer monitoring well below VP17. Expansion of the pilot-scale bioventing system was completed and is awaiting approval for startup.

A quarterly groundwater monitoring program to gather additional RI level data was initiated in FY 1998 and will extend into FY 1999. This data will be crucial to the understanding of contaminant transport.

Kaala AFS. The final report for a multi drum removal project was submitted. The drums and drum remnants were successfully removed and the contents as well as the soil beneath the drums were characterized. No contaminants of concern (COC) were identified above the regulatory action levels.

Punamano AFS. This site was divided in three subsites for remediation purposes consisting of the Motor Pool Drain Outfall Site (SS01), the Environmental Area 4 (EA04) and the Suspected Sunken Tank Area. At the Motor Pool Drain Outfall Site, 40 cubic yards of soil contaminated with petroleum hydrocarbons were taken for thermal desorption treatment. After investigation the Environmental Area 4 turned out to be a non-site as there were no tanks or any appurtenances discovered upon investigation. No tanks were discovered at the Suspected Sunken Tank Area either. During FY 1998 the three subsites were closed out, closing documents were signed and no further action is planned.

Satellite Stations (Kokee Air Force Station, Palehua Solar Observatory, Kaena Point Satellite Tracking Station). Site inspection was completed for the three Air Force satellite installations. No contaminants of concern were identified above the regulatory levels and the Air Force is recommending no further remedial action for the sites. A 6,000-gallon diesel underground storage tank was removed at Palehua Solar Observatory and confirmation soil samples beneath the tanks indicated that contaminant concentrations were below Department of Health Tier 1 action levels. No further action was recommended for the site.



## Significant Site Summaries from the Site Discovery, Assessment, and Remediation Section (SDAR)

### Preliminary Assessment/Site Investigation Sites

Hamakua Sugar Company, Haina Mill. The former Haina Mill, located about a mile north of Honokaa, is the location of a proposed power plant facility by Enserch Development Corporation. Phase I and Phase II assessments of the entire mill area brought up several concerns, primarily involving petroleum hydrocarbon contamination, which were addressed by the potentially responsible party (PRP). Arsenic was found in the soil at natural background levels. The proposed power plant will encompass only a portion of the assessed property. The HEER Office is currently reviewing a final report which addresses the environmental concerns in that specific portion where the proposed power plant will be constructed and is documenting removal actions taken at the site. The site has received attention from the public and EPA.

Ewa - Ewa Sugar Mill/Oahu Sugar Co. This site consists of five subunits: (1) the coral waste pit, (2) the pesticide mixing/loading area in Ewa, (3) the former fumigation equipment and storage area, (4) the pesticide mixing/loading and cane seed fungicide dipping site on Waipio Peninsula, and (5) the pesticide staging area in Kunia. Samplings have been performed by the HEER Office at all subunits except the mixing/loading area in Kunia, which is scheduled for sampling in November 1998.

*Coral Wastepit* - A mixture of waste oil and water was disposed of at the coral wastepit adjacent to NAS Barber's Point. This site is inaccessible to the public and is scheduled to be part of the Ewa Marina golf course. The current owner of the wastepit property is planning another round of sampling in this area, in accordance with EPA assessment sampling guidelines. EPA is providing direct guidance and may send staff to Hawaii to conduct sampling if necessary. If sample results indicate that no contamination is present, the HEER Office will recommend that no further action be conducted under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).



*Pesticide Mixing/Loading Site* - Ametryn was previously detected at levels above action limits by the Department of Agriculture in the soil at the pesticide mixing/loading site in Ewa. Sampling conducted by the HEER Office indicated the presence of pentachlorophenol (PCP) and arsenic above regulatory action levels and indicated the presence of dioxins. Confirmatory analyses of these samples were negotiated with EPA, and the results confirmed the presence of high concentrations of dioxins. The site has been fenced and locked, and warning signs have been posted. Due to the elevated dioxin concentrations, the HEER Office has issued an Order to Oahu Sugar Company to fully characterize the concentration at the site, as a next step.

*Fumigant Storage Area* - The former fumigation storage area is located within a residential area. It was previously suspected that chemicals used for fumigating plantation homes may have spilled at the site. The initial sampling results indicated the presence of only trace amounts of various chemicals, all of which are below regulatory action levels. Recent interviews and site visits with former sugar company employees and residents of the area have identified two additional areas with potential contamination: a PCB transformer oil dumping area and a chemical mixing area. In addition, a different area was identified as the location of the former fumigant shed, or "poison house." Therefore, a second soil and groundwater SI sampling event is scheduled for November 1988.

*Waipio Peninsula* - The pesticide mixing/loading and seed cane fungicide dipping site on Waipio Peninsula is owned by the U.S. Navy and is located within a restricted area. Soil sampling at this site indicated the presence of dioxins and concentrations of DDE, DDT, arsenic, and PCP above regulatory action levels. Confirmation or confirmatory analyses of these samples were negotiated with EPA, and the results confirmed the presence of high concentrations of dioxins. As a result, the HEER Office issued an Order to Oahu Sugar Company to fully characterize the contamination at the site as a next step. The site has been fenced and locked, and warning signs have been posted. Oahu Sugar Company is currently working with the HEER Office and the U.S. Navy to fulfill the requirements of the Order.

*Kunia Staging Area* - Ametryn, Obtrusion, and arsenic were previously detected in the soil at the Kunia pesticide mixing/loading site at levels above regulatory action levels. This site lies within an area which is planned to be a residential subdivision. A soil and groundwater SI sampling event is scheduled for this site in November 1998.

Kanaha Pond East and Kanaha Pond West. Kanaha Pond consists of two (2) sites: Kanaha Pond East and Kanaha Pond West.

*Kanaha Pond East* - This site consists of five (5) parcels owned by the State of Hawaii and managed by the Hawaii Department of Land and Natural Resources (DLNR). These lots are located on approximately 2.69 acres along the north border of the Kanaha Pond Wildlife Refuge. All of the businesses were vacated in 1993, removing all structures and leaving the site vacant. The area is going to be used as a buffer area for Kanaha Pond Wildlife Refuge.

*Kanaha Pond West* - This site is located along Amala Place, across from the Wildlife Refuge and adjacent to the drainage ditch going from the Refuge to the Pacific Ocean. The site consists of seven (7) parcels, also owned by the State of Hawaii and managed by the Hawaii Department of Land and Natural Resources (DLNR). These parcels are located on approximately 2.65 acres of land in an industrial area. Substantial amounts of solid wastes and hazardous material are presently on the five parcels in the south portion of the Site. The DLNR intends to remove the solid wastes and hazardous materials, however, at present there is no prospective date for the intended cleanup.

Land in this area was condemned in 1945 by the United States Government for the formation of a Naval Air Station. It is unknown what kind of activity took place on the site during this period. The land was then transferred to the Hawaii State Department of Transportation, Airports Division (DOT Airports) in 1953/54. The land was rented out to businesses in the early 80's. Finally, the land was put under the control of the DLNR in the late 1980's and is currently managed by the DLNR.

Business rented these lots on a month-to-month basis as early as 1980. The businesses were served notices of eviction in 1983. Businesses stored construction materials and equipment on the lots. 55-gallon drums were observed on some lots. Some of the drums were marked waste oil, while others were unmarked. Old cars, boats, used engines, batteries, metal parts, roofing materials, and tires were also seen on the lots.

Presently, CERCLA Preliminary Assessments (PA's) have been conducted for parcels of the Sites that were considered areas of concern. A CERCLA Site Investigation (SI) of the Sites is in its preliminary stages. Consequently, a definitive sampling plan is not available at this time. However, we anticipate collection of a large number of soil and groundwater samples for analyses for total petroleum hydrocarbon-oil (TPH-O), polyaromatic hydrocarbons (PAHs), hydrogenated volatile organic compounds (HVOCs), and metals. The sampling scheme will be developed to determine if there have been impacts on the Wildlife Refuge from the industrial sites.

Kapaa Landfill. The Kapaa Landfill comprises three (3) distinct landfill areas: an active landfill area located adjacent to an abandoned basalt quarry; an active landfill located adjacent to Kawainui Marsh; and an inactive landfill located adjacent to Kawainui Marsh. Kawainui Marsh is made up of more than 300 hectares (~800 acres) and is considered the largest freshwater marsh in Hawaii. There are four (4) federally listed endangered species found in Kawainui Marsh. Groundwater depth ranges from 0.3 meters - 30 meters below ground surface (bgs) and flows in an east to northeast direction, discharging from the landfill areas into Kawainui Marsh. It is not known if hazardous materials were deposited at the landfills. Available data for the site indicate levels of copper and zinc above their respective ambient water quality criteria (AWQC).

A CERCLA PA has been completed and a CERCLA SI is in development. The associated Field Sampling Plan will need to determine if leachate from the landfill is adversely impacting the marsh. Investigation actions will include the determination of possible leachate infiltration locations, the possible installation of leachate collection systems at the infiltration locations, soil and sediment sampling, the installation of

groundwater monitoring wells, and surface water sampling. The entire scope and range of the sampling phase have not yet been fully determined. The sampling phase may possibly include 5 - 8 monitoring wells, 15 - 30 soil and sediment samples, and 3 - 5 leachate sample collectors.

Kunia - Hawaii Agriculture Research Center (HARC). HARC, formerly known as Hawaiian Sugar Planter's Association (HSPA), disposed of unknown quantities of a variety of laboratory wastes, experimental fertilizers and pesticides from their Makiki facility into disposal pits at their Kunia facility. Analyses of samples from these pits showed pentachlorophenol to be present. The HEER Office has requested sampling for PCP, pesticides and total metals from the disposal pits to determine if all hazardous materials have been removed.

Maili Kai Emergency Access Road – Polychlorinated biphenyls (PCBs) were released from abandoned capacitors and mixed in soil during construction of an emergency access road in December 1996. The extent of contamination and removal options are being evaluated.

Mapunapuna - Pukoloa Wood Treating Site. PCP, arsenic, and chromium have been detected in the soil and groundwater at a Servco Pacific, Inc. facility on Pukoloa Street. The contamination appears to have resulted from past practices of a wood treating company formerly located at the site. Copper chromium arsenate (CCA) and pentachlorophenol (PCP) are chemicals commonly used to treat lumber. Servco has conducted several sampling events, involving the drilling of numerous soil borings and the installation of monitoring wells. Servco has also removed a CCA tank and two contaminated concrete drip pads. Thorough site history was performed by both Servco and the HEER Office, and other potential responsible parties (PRPs) for the site were identified.

In an effort to resolve the question of financial responsibility for characterization and cleanup of contamination at the site, the HEER Office hosted a potential responsible party (PRP) meeting in April 1998. Numerous PRPs and/or their representatives attended and discussed the issue of responsibility with Servco as the lead PRP. The issue is currently being addressed by the PRPs insurance companies.

Servco's next sampling event is scheduled for October 1998; it is anticipated that the resulting analytical data will be incorporated into the SI report.

Waiawa Gulch. This site began as a federal facility Site Investigation (SI) Review conducted by the HEER Office. The Hawaii Army National Guard (HIARNG) provided the EPA with a preliminary assessment (PA) and SI, and the HEER Office was later asked to further evaluate the site by performing a federal facility SI review using EPA's Hazard Ranking System (HRS) criteria. Lead was detected at a concentration of 4,371 mg/kg in a soil sample collected from the bank of Waiawa Stream at a 6-inch diameter pipe drainage outfall which is connected to a wash rack at the HIARNG facility. Possible sources of contamination to the stream include the HIARNG facility, a junkyard/recycling facility across the stream, and other small industrial operations in the area. An Ecologist/Microbiologist with EPA Region IX conducted a site visit and stream walk in Waiawa Gulch in July 1998. Observations made during the stream walk indicated a reduction in aquatic macro fauna biodiversity as the stream flows through the light industrial area, the recycling area, and the HIARNG property. Further sampling of water, sediment and habitat was recommended for this site. It is anticipated that sampling will be conducted in early 1999.

Laehala Street Dump Site. The Laehala Street Dump Site is located in Hilo, near the Onekahakaha Beach Park. The site is a vacant 16,000 square feet lot overgrown with vegetation. Abandoned drums were discovered in two areas at the site. Drum Site 1 contained three 55-gallon metal drums, and Drum Site 2 contained an assortment of 55, 30 and 5 gallon containers. The containers contained petroleum, paint-like sludges and liquids. The drum contents and surrounding soil were sampled. The soil samples indicated releases of arsenic (330 ppm), lead (750 ppm) and acetone (0.4 ppm ) above the guidelines set by the Environmental Protection Agency. Contaminated soil was removed and confirmation samples reported levels of contaminants below cleanup guidelines. The site is currently being recommended for a No Further Action status.

## **Hawaii State Remediation Sites**

Maui Petroleum - Maui Petroleum reported a release of approximately 12,500 gallons of unleaded gasoline in March 1990. Petroleum floating in the water (free product) is encountered over approximately half of the property and is being removed via recovery wells and an interceptor trench. Soil and groundwater contamination is above Department of Health Tier I Action Levels, and is presumed to extend offsite. Groundwater monitoring is being conducted, and further plume delineation is planned.

Honolulu Harbor - An agreement was signed on February 12, 1998 by BHP Companies, Chevron Products Company, Hawaiian Electric Company, Shell Oil Products Company, Tosco Distribution Company/Union Oil Company of California dba UNOCAL, and DOT - Harbors Division (collectively, "the Technical Work Group") and the Department of Health (DOH). While there have been recent sales and mergers involving several of the oil companies (i.e., UNOCAL, BHP, and Shell), DOH has received commitments from these parties, and participation in the investigation and cleanup of the harbor is not expected to be substantially affected.

Under the agreement, the Technical Work Group will pay for the investigation, and will be given a two for one credit against DOH oversight costs. The investigative work and subsequent cleanup will be done in a phased approach over the next 5 to 10 years. The Technical Work Group is meeting regularly to move the investigation forward with DOH guidance.

The agreement covers Phase 1 of the investigation. The purpose of Phase I is to evaluate and integrate existing data regarding the nature and extent of petroleum contamination; and develop a preliminary Conceptual Site Model (CSM), including an assessment of probable complete exposure pathways, that is consistent with U.S. Environmental Protection Agency (EPA) guidelines. The report is expected to be submitted to DOH by the end of December 1998. Results of the Phase I work will be used by DOH to determine the level of effort required for further investigations, locate data gaps, and identify and pursue uncooperative responsible parties.

*Piers 1 and 2.* DOH and the U.S. Coast Guard have completed a response action at Piers 1 and 2. An abandoned

pipeline released petroleum product after a 3-inch diameter hole developed where the piping exited the pier wall. Booms and sorbents collected oil from the harbor waters. The responsible pipeline was evacuated and grouted. Oiled pier areas were pressure-washed.

*Piers 29 and 36.* The Technical Work Group is currently working to address the seepages into Honolulu Harbor at Piers 29 and 36. An environmental firm has been selected, and work to stop the seepages, has begun. To date, a protruding 8-inch PVC pipe from Pier 29 (which may have been a conduit for petroleum) has been broken out of the Pier, and the hole in the bulkhead has been sealed with appropriate water- and oil-tight materials. Sheen monitoring is being conducted to determine if this has resolved the problem at this location. A manual and remote video camera survey inside the storm drainage system is planned at both piers to determine if petroleum is entering the storm drain system through joints or cracks.

*Piers 37 and 38.* Ground breaking for the “fishing village” planned for this area has begun. Petroleum-contaminated soil and groundwater will need to be properly managed.

*Pier 51.* Petroleum releases at Pier 51 (Sand Island) are being investigated by Airport Group International (AGI). Continual seepages into the harbor at this location are apparently due to fuel line breaks. AGI has hired an environmental contractor (DAI) to recover the petroleum floating on the water (free product) and conduct a preliminary assessment of the nature and extent of contamination.

*Proposed Home Depot Property.* The proposed Home Depot site is part of a larger holding by Castle and Cooke upon which the former Dole Cannery was operated. Home Depot wishes to build a retail store and has been accepted into the Voluntary Response Program (VRP). The site has undergone characterization and risk assessment, and indications are that remediation/risk management of petroleum-contaminated soil and groundwater is necessary at the site. Home Depot is currently evaluating remedial alternatives. Upon satisfactory completion of the program, Home Depot will receive certain liability exemptions allowed by its participation in the Voluntary Response Program (VRP).

*Tosco/Unocal Property.* Soil and groundwater investigations are being conducted at the Tosco terminal on Pacific Street. The results will be included as part of the Phase I report being prepared for Honolulu Harbor by the Technical Work Group.

Waiau Marsh - The site is impacted by residual contamination resulting from a May 1996 Chevron pipeline release of bunker fuel product. Site characterization and an ecological/human health risk assessment has been conducted by Chevron to determine if the residual fuel poses a risk. The risk assessment is currently under review by DOH.

Kaka'ako - Kaka'ako Redevelopment. The HEER Office coordinated discussions with the EPA Region IX and the Hawaii Community Development Authority (HCDA) to initiate a "Brownfields" Project in the State of Hawaii. During 1998 EPA, Region IX awarded an additional \$15,000 for the Brownfields Grant to conduct a site assessment of the makai area of the Kaka'ako Redevelopment Project. This brought the total award for the project up to \$90,000. The assessment is being overseen by the HEER Office. The study is focusing on petroleum and heavy metal contamination from the businesses, maintenance areas and landfill areas.

Kunia - Del Monte Kunia. Since being placed on the National Priority List (NPL), Del Monte Fresh Produce (Hawaii) has entered into a consent agreement with the EPA and DOH to conduct the RI and feasibility study (FS). All past costs and any future state oversight costs will be reimbursed by Del Monte. The Work Plan, Field Sampling Plan, and Health and Safety Plans were reviewed and approved by EPA and DOH. Work conducted in 1997, as part of the RI, included installment of boring holes, shallow monitoring wells, and a basal aquifer well. Sampling of the basal well and four existing basal wells in the region was scheduled for October 1997; however, results are still unavailable. The FS and Ecological and Human Health Risk Assessment are also to be conducted by Del Monte. Addressing remediation alternatives, Del Monte has submitted a Treatability Investigation Work Plan to evaluate phytoremediation methods to treat volatile organic compounds in excavated, contaminated soils. Commencement of the workplan's activities is pending EPA's approval.



## **STATE PRIORITY CLEANUP SITES**

The State Site List (Appendix B), contains all of the sites through FY 1998 which have been determined by the HEER Office to need further assessment and possible removal or remedial action. These sites have gone through the Initial Site Screening Team (ISST) prioritization process based upon the criteria in the Hawaii State Contingency Plan, Chapter 11-451 Hawaii Administrative Rules. These sites have been determined to be of either high, medium, or low priority and are either actively being worked on by a project manager from the HEER Office or they will be addressed in the future.

The majority of cleanup sites are identified through the spill/release "notification system" required by the State Contingency Plan. The Release Notification Log (Appendix A) contains the FY 1998 notifications. All spills and releases, both Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and non-CERCLA eligible. (i.e. petroleum product contaminated), are reported to the DOH. The remainder of sites identified are from deferrals by other programs and the HEER Office's site discovery process.

Chapter 128D, HRS, requires that the department publish a list of those facilities undergoing action where a formal agreement has been established or a "responsible party" is not conducting the appropriate action. Although the program currently provides oversight to a number of sites, the following sites are the only ones officially listed on the State Priority List. All of these facilities voluntarily entered into agreements to conduct the appropriate action.

Pearl Harbor\*  
Waikakalaua/Kipapa Fuel Pipeline  
Schofield Barracks\*  
Del Monte Kunia\*  
Honolulu Harbor - Iwilei

There are four sites in Hawaii listed on EPA's National Priority List (NPL) for cleanup. Three of the sites are listed above and are marked with an asterisk (\*). The fourth site listed is the Naval Computer and Telecommunication Area Master Station.

The following sites are currently going through the process to determine if they are eligible for remediation under CERCLA. Once a site is determined to be a CERCLA site, it may be added to the National Priority List and the cleanup will be managed by the EPA and generally, will require no additional State funding.

1. Hilo Arsenic Site, Site Investigation (SI).
2. Ewa/Oahu Sugar Multiple Source Site, SI-1.
3. Ewa/Oahu Sugar Multiple Source Site, SI-2.

4. Ewa/Oahu Sugar Multiple Source Site, SI-3.
5. Ewa/Oahu Sugar Multiple Source Site, SI-4.
6. Ewa/Oahu Sugar Multiple Source Site, SI-5.
7. Hawaii Pest Control Site, Preliminary Assessment (PA).
8. Pukoloa Wood Treating Site, PA/SI.
9. Kanaha Pond Industrial sites, SI.
10. Kapalama Incinerator, PA.
11. Maili Kai Emergency Access Road, PA.
12. Scott's Plating, SI.
13. Kawainui Marsh/Kapaa Landfill, SI.

The HEER Office continues to provide oversight to all military site cleanups through the Department of Defense/State Memorandum of Agreement (DSMOA) grant. The "Top Military Sites" were identified for the purpose of setting goals for the Year 2000. These sites are listed below with no preference to priority order:

Naval Computer and Telecommunication Area Master Station - Pacific  
Barber's Point Naval Air Station  
Naval Station Pearl Harbor - Aiea Laundry  
Waikakalaua/Kipapa Fuel Storage Area - Hickam Air Force Base  
Pearl Harbor Naval Base - Subsurface Oil  
Pearl Harbor Naval Shipyard - Battery Shop, Building 394  
Ewa Junction Gasoline Spill - Pearl Harbor  
Hickam Air Force Base  
Bellows Air Force Base

The military sites listed above are considered to be the highest priority military sites for consideration of oversight and compliance in accordance with the State Contingency Plan.

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## **HEER OFFICE BUDGET AND EXPENDITURES**

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### **FY 1998 Budget Summary**

The combined total operating budget for both State and Federal funds was \$2,469,690 during Fiscal Year (FY) 1998. The time span for the State FY 1998 goes from July 1, 1997 to June 30, 1998 while the Federal FY 1998 goes from October 1, 1997 to September 30, 1998. The federal fund amounts are adjusted to coincide with the State fiscal year.

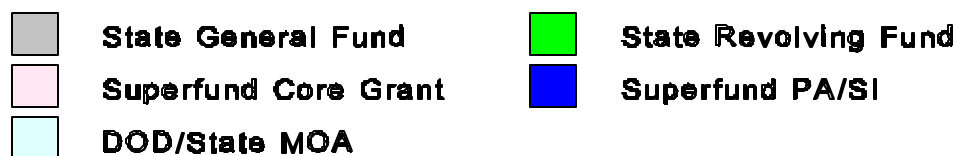
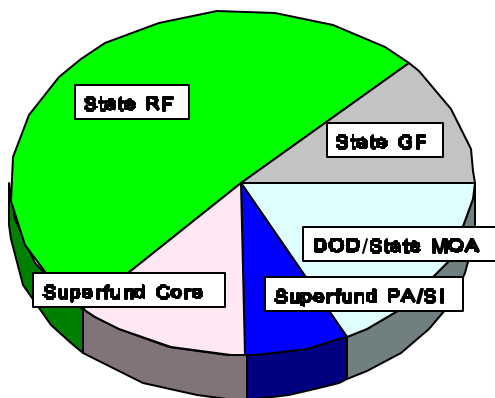
State general funds (July 1, 1997-June 30, 1998) appropriated amounted to \$307,225 (down 3% from the \$316,841 budgeted in State FY 1997) and was basically used to operate the Emergency Preparedness and Response and the Hazard Evaluation sections of the HEER Office. These functions are vitally important in protecting Hawaii's environment as these sections are concerned with hazardous materials, emergency responses and the assessment of chemical exposures on human health. These functions cannot be funded with the federal grant dollars currently received by the office.

The HEER Office also had an operating budget of \$1,253,182 from the State Environmental Response Revolving Fund (ERRF) during State FY 1998. The ERRF was utilized by the HEER Office for two primary purposes: operations and response. The operations budget of \$753,182 was used to conduct oil spill cleanups; enforce Chapter 128D, HRS; and fund the counties used oil recycling programs. Funding for the recycling programs is in the HEER Office budget. However, management and oversight of the programs is provided by the Solid and Hazardous Waste Branch, Office of Solid Waste Management. The HEER Office also budgeted \$500,000 for both emergency response and remedial contract services which it needs to supplement its response capacity.

Two other branches receive funding from the ERRF. The Solid and Hazardous Waste Branch had a budget of \$345,249 and the Safe Drinking Water Branch had a budget of \$607,081. A total of \$2,205,512 was budgeted from the ERRF for these programs.

The HEER Office received three federal grants totaling \$909,283. Two of the grants were from the U.S. Environmental Protection Agency and one from the U.S. Department of Defense. These grants were very specific as to their designated usage and wherever possible, we utilized federal grant funds in lieu of state funds.

# HEER Office Funding



## HEER Office Funding Source and Budget for FY 1998:

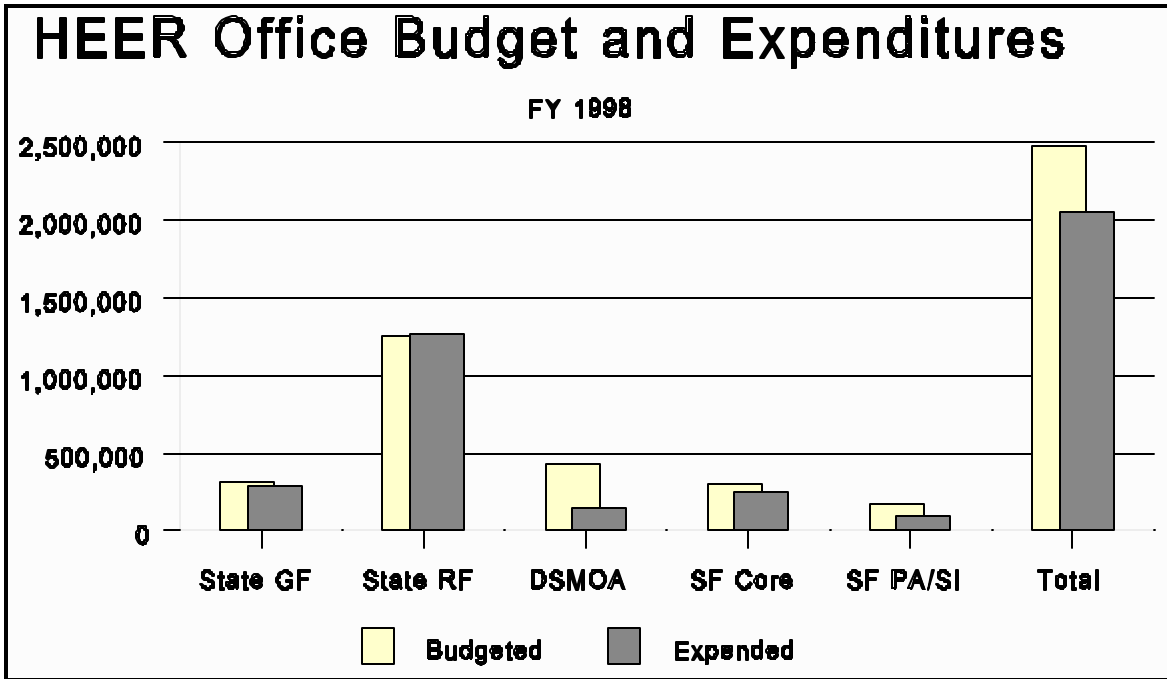
State General Funds	\$ 307,225
State Revolving Funds	
Operations	\$ 753,182
Responses	\$ 500,000
The Department of Defense/State (Federal) Memorandum of Agreement October 1997 grant budgeted allotment	\$ 429,877
EPA Superfund Core Grant (Federal) Amended 1997 grant budgeted allotment Includes ERO & EPO support costs	\$ 302,185
Superfund PA/SI Cooperative Agreement (Federal) October 1997 grant budgeted allotment	\$ 177,221
<b>TOTAL STATE &amp; FEDERAL BUDGET FOR FY 1998</b>	<b>\$2,469,690</b>

## **FY 1998 Expenditure Summary**

The HEER Office spent a total of \$2,051,256 of the state and federal budgeted amount of \$2,469,690 during FY 1998. State general funds of \$287,692 was expended between July 1, 1997 and June 30, 1998 and as mentioned previously, was basically used to operate the Emergency Preparedness and Response and the Hazard Evaluation sections of the HEER Office. These functions are concerned with hazardous materials, emergency responses, and the assessment of chemical exposures on human health. These functions cannot be funded with the federal grant dollars currently received by the office.

The HEER Office also expended \$1,268,757 from the State Environmental Response Revolving Funds (ERRF) during State FY 1998, \$15,575 more than the budgeted \$1,253,182. The ERRF was utilized by the HEER Office for two primary purposes: operations and response. The operations expenditure of \$797,755 was used to conduct oil spill cleanups; enforce Chapter 128D, HRS; and fund the counties used oil recycling programs. The response expenditure of \$471,002 was used to conduct responses to releases or threats of releases of hazardous substance. In addition to the HEER Office budget, the Solid and Hazardous Waste Branch expended \$298,080 and the Safe Drinking Water Branch expended \$451,183 from the ERRF. A total of \$2,018,020 was expended by all programs from the ERRF.

The HEER Office expended \$494,807 from the three federal grants for FY 1998. Two of the grants were from the U.S. Environmental Protection Agency and one from the U.S. Department of Defense. These grants were very specific as to their designated usage; however, wherever appropriate, we have attempted to use federal grant funds in lieu of state funding.



**HEER Office Funding Source and Expenditures for State FY 1998:**

	<b><u>Expended As of 6/30/98</u></b>
State General Funds	\$ 287,692
State Revolving Funds	\$1,268,757*
The Department of Defense/State (Federal) Memorandum of Agreement	\$ 149,462
Superfund Core Grant (Federal)	\$ 252,238
Superfund PA/SI Cooperative Agreement (Federal)	\$ 93,107
<b>TOTAL STATE &amp; FEDERAL EXPENDITURES FOR FY 1998</b>	<b>\$2,051,256</b>

\* **Note:** This amount reflects only the HEER Office expenditures/encumbrances in FY98 and does not include expenditures from other environmental programs which also participate in revolving fund activities.

## **General Funds**

General funds support the Hazard Evaluation Section, as well as the Emergency Response and Preparedness Section. One activity of this section is to administer the requirements of Chapter 128E, HRS. Under this statute, facilities which store specific chemicals above a certain threshold must report to the department and submit a \$100.00 filing fee. The fee is due in March of every year. Last year, this section collected \$80,300 for deposit into the General Fund.

**Table 1 - HEER Office General Funds**

	<b><u>Budget FY 1998</u></b>	<b><u>Expended As of 6/30/98</u></b>
A. Funds		
1 Epidemiologist IV, SR 22		
4 Env. Health Spc. IV, SR 22		
1 Env. Health Spc. III, SR 20		
1 Clerk Typist, SR 8		
Subtotal	<u>255,707</u>	258,182
B. Funds	51,518	29,510
C. Funds	-0-	-0-
<b>TOTAL HEER GENERAL FUNDS</b>	<u><b>307,225</b></u>	<b>287,692</b>



## **Environmental Response Revolving Fund**

The Environmental Response Revolving Fund (ERRF), established in Chapter 128D, HRS, is supported by a tax of five cents per barrel on petroleum, fines and penalties for environmental violation, grants, legislative appropriations, and costs recovered from response actions. The fund may be used to conduct removal or remedial actions consistent with Chapter 128D; however, the oil tax:

- 1) Shall also be used:
  - a) For oil spill planning, prevention, preparedness, education, research, training, removal, and remediation; and
  - b) For direct support for county used oil recycling programs; and
- 2) May also be used to address concerns related to drinking water, underground storage tanks, including support for the underground storage tank program of the department and funding for the acquisition by the State of a soil remediation site and facility.

Currently, three programs within DOH have budgeted accounts for access to the ERRF: The Hazard Evaluation and Emergency Response Office (HEER), Solid and Hazardous Waste Branch (SHWB), and the Safe Drinking Water Branch (SDWB).

*Please note that this report is intended to provide a complete overview of the HEER Office activities; however, to meet the requirements of ACT 300/93, SLH, this section of the report provides a complete overview of all budgeted activities in the ERRF.*

Find the specific activities and expenditures under each program in the following pages.

## Table 2 - HEER Office Revolving Funds

	<u>Budget</u> <u>FY 1998</u>	<u>Expended</u>
A. Funds		
1 Toxicologist I, SR 26		
1 Epidemiologist III, SR 20		
2 Env. Health Spc. V, SR 24		
1 Clerk Typist II, SR 08		
4 Env. Health Spc. IV, SR 22		
Subtotal	378,269	313,360
B. Funds		
Used Oil Recycling & Related	175,000	175,000
Contract Support (DLNR)	80,000	76,081
AG Support	100,000	66,102
Other Expenses	19,913	115,124
Removals	500,000	471,002
Subtotal	874,913	903,309
C. Costs	-0-	52,088
Subtotal	-0-	52,088
Total B & C Costs	874,913	955,397
 <b>GRAND TOTAL</b>	 <b>1,253,182</b>	 <b>1,268,757</b>

The HEER Office is focusing on collecting costs expended in responding to site specific activities. This effort is a result of a maturing program and promulgation of rules under Title 11, Chapter 451, HAR. Furthermore, we have changed our internal accounting system to allow General funded positions to charge to the ERRF when conducting site specific response actions.

Chapter 128D, HRS, authorizes cost recovery from money spent from the fund (ERRF), it does not provide for cost recovery from general funded activities. As such, we need to charge the ERRF in order to pursue cost recovery. During FY 1998, we recovered \$88,459, up 13% from \$67,952 in FY 1997.

**Table 3 - Solid and Hazardous Waste Branch  
Revolving Funds**

A. Funds	<u>Budget FY 1998</u>	<u>Expended</u>
1 Env. Engineer IV, SR 24		
3 Env. Health Spc. III, SR 20C		
2 Env. Health Spc. IV, SR 20D		
1 Geologist I, SR 24		
1 Clerk Typist II, SR 08		
Subtotal	345,249	298,080
B. Funds	-0-	-0-
C. Funds	-0-	-0-
<b>TOTAL</b>	<u><b>345,249</b></u>	<b>298,080</b>

The Environmental Response Revolving Fund provides support for the following program activities within the Solid and Hazardous Waste Branch (SHWB):

Used oil management and recycling

The Special Waste permitting engineer is responsible for permitting and enforcement activities over a wide range of special waste management facilities. The largest number by far, included Used Oil and Petroleum Contaminated Soil (PCS) recyclers and transporters. Another major focus is the permitting and oversight of Auto Salvage facilities where a primary concern is the proper

management of gasoline, oil and other automotive fluids removed from the vehicles. Currently the Engineer has responsibility for more than 75 permitted facilities (50 of which deals directly or indirectly with oil related issues). In addition, the Engineer is responsible for the implementation of Federal rules (40 CFR 279) relating to used motor oil recycling.

#### Groundwater assessments and cleanup of contaminated sites

The EHS IV, Hazardous Waste Permit Writer worked on numerous ongoing closures and cleanups of contaminated sites in FY 1998. A notable achievement was the voluntary corrective action that was negotiated and recently completed by Chevron Refinery. The clean up of contaminated units and the recovery of free-product at the refinery were major milestones which emphasized the cooperative efforts of the State, EPA and the Refinery. Using a more prescriptive regulatory clean up process could have easily taken 5-10 years to complete, but with the cooperation and teamwork of everyone involved, the process only took two years. This process has set a national trend for clean up of refineries. Nationwide other EPA regions, states, and refineries are looking at the Hawaii experience.

Another project requiring extensive time of the EHS IV was the cleanup of Precision Wood, a company located adjacent to Chemwood Treatment Company, which has been undergoing corrective action for many years. High levels of dioxin were found within the Precision Wood site and required an expedient solution by covering over the various pathways that could have exposed the workers. This involved a proactive outreach to the workers to inform them of the potential problems and how to ensure their safety; and negotiating the corrective measures to contain the contamination with all parties involved.

Closure was initiated at Unitek Environmental Services, which for many years, was the only permitted commercial hazardous waste storage facility in Hawaii. The closure plan was public noticed in November of 1997 and closure activities commenced thereafter. Other ongoing closures included Maui Wood Treating, Chevron Refinery Land Treatment Unit, and Honolulu Wood Treating.

Continued monitoring of facilities that have already closed but are required to do groundwater monitoring include: Tesoro Refinery (formerly BHP) and Hawaiian Western Steel Wastepile.

#### Management of Leaking Underground Storage Tank sites

The EHS III, LUST staff, has an assigned caseload of 176 cases involving releases of petroleum from UST systems in Hawaii. The LUST staff provided timely review of release response documentation and actions, which included meetings not only with owners and operators of UST systems, but also with consultants and contractors.

Thirteen cleanups were initiated by owners and operators and 14 cases received no further action (NFA) letters. The LUST staff ensured compliance with federal UST regulations. As of June 30, 1998, 832 cleanups had been initiated, and 471 cleanups had been completed at 1,341 confirmed release sites in Hawaii.

The EHS III, LUST staff, also performed a semiannual update of the DOH's UST database. Updating the UST database is a service provided to consultants and contractors. The real estate, banking, and petroleum industry benefit from timely access to the information in the UST database. For example, consultants use the UST database to obtain information for environmental assessments (i.e., to determine if petroleum releases occurred at facilities and adjacent properties).

The EHS III, LUST staff, was the lead-person for two data management projects: the updating of UST release information in the DOH's UST Access software database, and the successful development of a database to track compliance of owners and operators with release response reporting requirements.

The EHS III, LUST staff, gave presentations regarding leaking underground storage tank regulations and release cleanup requirements to various groups, including a presentation to the Natural Resources Section of the Hawaii State Bar Association.

#### Inspection of Underground Storage Tank facilities

The two EHS IIIs, UST staff, conducted 197 compliance inspections at petroleum facilities in Hawaii to ensure that release prevention and release detection equipment were properly installed, maintained and operated. The goal of the compliance inspections is to prevent releases of petroleum from UST systems and to minimize the volume of a release if one does occur. One staff conducted 137 inspections. The other staff's time was equally divided between the UST and LUST programs: she conducted 60 inspections and provided regulatory oversight of 83 cases involving releases of petroleum.

During the compliance inspections, the UST staff also provided information to the owners and operators of USTs about the federal December 22, 1998 deadline. By December 22, 1998, all UST systems must meet corrosion protection standards and have spill and overfill prevention equipment installed.

The two EHS IIIs, UST staff, provided assistance to consultants and contractors who requested and reviewed approximately 1,500 facility records. Timely review of facility records assists the banking, real estate and petroleum industry to complete transactions involving the sale or return of properties that were affected by petroleum releases. The two EHS IIIs, UST staff helped the UST Unit process approximately 500 requests for public records.

The EHS IV, UST staff, tracked and reviewed the daily work activities of three EHS IIIs. Also, the EHS IV is the Safety Coordinator for the Solid and Hazardous Waste Branch and ensured that staff had proper equipment for field inspections. In addition, the EHS IV coordinated direct mailouts in July 1997 and January 1998 to owners and operators of USTs, and consultants and contractors, advising them about the December 22, 1998, UST deadline.

The EHS IV, UST staff and the EHS III, LUST staff helped to develop draft state UST rules that have been reviewed by U.S. EPA. The DOH will submit the proposed UST rules to the governor and will request approval for public hearings during FY 99.

In March, all UST program staff participated in a UST Compliance presentation about the federal UST deadline and response to leaking USTs. Representatives from nine state government agencies attended the one-day presentation at the DOH.

The UST and LUST staff also assisted with the DOH's objective to obtain state program approval (SPA) from U.S. Environmental Protection Agency for the UST program. Staff wrote several sections of documents required for SPA: the UST/LUST Inspector's Manual and the UST Enforcement Manual.

**Table 4 - Safe Drinking Water Branch Revolving Funds**

	<b>Budget FY 1998</b>	<b>Expended</b>
<b>A. Funds</b>		
3 Env. Engineer IV, SR-24		
1 Env. Hlth Spec. III, SR-20		
1 Clerk-Steno II, SR-09		
1 UIC Clerk-Steno II, SR-09		
1 Clerk-Typist II, SR-08		
3 UIC Geologist 1, SR-24		
Subtotal	<u>457,088</u>	369,918
<b>B. Funds</b>		
Travel	12,150	27,421
Supplies	20,500	4,713
Contractual	50,000	300
Advertising	2,500	
Air Freight	2,000	
Dues	1,500	3,291
Insurance	-0-	1,125
Interest	-0-	15
Laboratory		300
Maintenance of Motor Vehicle	1,500	
Motor vehicle gas and oil	1,500	
Phone	2,900	3,065
Postage	2,600	4,531
Registration Fee		9,495
Rental of Training Space	2,000	-0-
Rental of Office Space	37,097	17,676
Rental of Office Equipment		3,227
Rental of Equipment Other		622
Rental Other		75
R&M Office Furn. and Equip.		1,903
Reproduction costs	5,800	3,173
Subscriptions'	1,500	
Utilities	6,446	
Other Misc. Current Exp.		333
Subtotal	<u>149,993</u>	81,265
<b>C. Funds</b>	-0-	-0-
<b>TOTAL SDWB</b>	<u><b>607,081</b></u>	<b>451,183</b>

The Environmental Response Revolving Fund has enabled the strengthening of drinking water quality protection in Hawaii in many areas. High quality drinking water is vital to the protection of public health. The use of the ERRF has had the following benefits to public health and environmental protection.

#### Increased Water System Reviews

Water system reviews known as sanitary surveys, are, when taken with water quality monitoring data for the system, the best means of identifying existing and potential problems of water systems. They consist of an on-site review of the water system, its facilities, operation and maintenance procedures, and records.

Recommendations are made to correct existing problems or prevent future problems. The knowledge of each system is also valuable in the event of emergency conditions to assist the water system and explore alternatives to normal system operation. The Safe Drinking Water Branch is now involved in a program to conduct sanitary surveys of all public water systems in the State within a three-year period, starting with small systems which are usually the systems with the most deficiencies.

#### Expansion of Lead and Copper Rule Administration

The Lead and Copper Rule attempts to identify the worst case lead and copper problems in a water system. Worst cases involve new single family homes (less than 5 years old) with lead or copper in the home distribution system. Systems that are found to have a lead problem (based on required monitoring) are required to change the quality of the water to make it less aggressive to the pipes. In addition, the water system is required to provide public information on its system, the health effects of lead, and recommend interim measures to reduce any consumer's lead exposure. Given the known adverse health effects of lead, this program has substantial public health protection benefits.

#### Strengthening Review of Surface Water Treatment Plants

The Surface Water Treatment Rule (SWTR) requires the identification of all sources serving water to public water systems which are directly supplied, or directly affected by surface water. It imposes stringent filtration requirements on these types of sources. More effective filtration capability means that more contaminants will be removed from source waters. This is accomplished through the requirement of specific filtration technologies selected to address several microbial contaminants including: total coliform, Giardia Lamblia, legionella, and viruses. The ERRF provides one staff member to oversee the identification of surface or surface influenced sources as well as review plans, specifications, and construction and operation of plants designed to meet SWTR criteria.



Some more recently recognized microorganisms are smaller than traditionally recognized organisms and more resistant to conventional forms of disinfection. The surface water treatment rule requirements will be further strengthened to address some of the newer contaminants of concern such as Cryptosporidium and others which have recently been found in treated drinking water supplies through the Enhanced Surface Water Treatment Rule.

#### Increased Capability to Monitor Drinking Water

The monitoring of drinking water quality is changing substantially with the advent of new analytical techniques, new contaminants, and new research in the area of health effects. Further, the maintenance of existing equipment is a necessary challenge faced by all laboratories. The purchase of laboratory equipment has enabled the State Laboratories Division additional capability to perform drinking water analyses, confirm results, and to answer emergency needs to analyze for specific contaminants. It has also enabled the Monitoring Section of the Safe Drinking Water Branch to keep up with the increasing number and frequency of required monitoring to assure public health continues to be protected.

#### Improving Management of the Data

Data generation in SDWB is extremely intensive. Resources dedicated to the management of the data were badly needed. These included the creation of data management systems as well as outright entry of the data to create an electronic record of chemical and microbiological results. The ability to call up summary information will enable the tracking of long-term water system performance as well as tracking contamination trends. This information will help the program in efforts to protect drinking water quality by identifying problem sources and monitoring or reporting violations.

#### Protection of Existing and Potential Sources of Drinking Water

The Underground Injection Control (UIC) program is vested with the responsibility of protecting existing and potential sources of drinking water from contamination by wells allowed to inject wastes into the ground. This vital function both protects drinking water quality while enabling the proper disposal of wastes. The provision of underground injection as a means of disposal offers an alternative (potentially less expensive) means of waste disposal.

#### Certification of Operators of Drinking Water Treatment Plants

This program works to assure that operators of drinking water treatment plants are fully qualified to operate the treatment plant under their responsibility. This assurance has direct public health benefit by assuring that the personnel

responsible for drinking water treatment know what to remove, and how to remove drinking water contaminants of concern. In addition, they must know the consequences and emergency response actions in case of many forms of water system failure. This program, originally addressed only surface water treatment plants will soon include all forms of drinking water treatment and distribution.

#### Assistance to Owners/Users of Rain-Water Catchment Systems

This program is a significant step toward providing the kind of information needed by those who depend on rainwater catchment as their source of water and a significant public health protection initiative. It was authorized by the 1997 Hawaii Legislature to help owners/users of rainwater catchment systems determine the lead or copper status of their system's water. As designed, the owner/user of a rainwater catchment system pays the first \$ 25 of the analytical cost, and postage, with the State paying the remainder of the analytical cost.

Although not extensively used, this program has assisted those who have tested their rainwater catchment systems to know if they are subjected to lead or copper contamination of their water and the level of that contamination. Again, a substantial public health protection activity. The analytical contract will be moving into its second year in December 1998.

**Table 5 - Environmental Response Revolving Fund  
Summary by Program**

<b><u>HEER-HTH 849-FD</u></b>	<b><u>Budget FY 1998</u></b>	<b><u>Expended</u></b>
A. FUNDS	378,269	313,360
B. FUNDS	874,913	903,309
C. FUNDS	-0-	52,088
Subtotal HEER Operating Funds	<u>1,253,182</u>	1,268,757
<b><u>SHWB-HTH 840-FJ</u></b>		
A. FUNDS	345,249	298,080
B. FUNDS	-0-	-0-
C. FUNDS	-0-	-0-
Subtotal SHWB Funds	<u>345,249</u>	298,080
<b><u>SDWB-HTH 840-FH</u></b>		
A. FUNDS	457,088	369,918
B. FUNDS	149,993	81,265
C. FUNDS	-0-	-0-
Subtotal SDWB Funds	<u>607,081</u>	451,183
<b><u>TOTAL FUNDS</u></b>	<b><u>2,205,512</u></b>	<b>2,018,020</b>

## **Federal Funds**

The budgets listed in this section are adjusted to coincide with the State fiscal year. Since federal grants are received in Hawaii based upon the federal fiscal year (October through September), these numbers do not match the federal grant amounts. Expenditures are also based upon the State fiscal year.

## **Core Grant**

The Core Grant is provided to the state by the U.S. Environmental Protection Agency (EPA) to develop our state "Superfund" program. This grant provides the state with funding for program development, training, and administrative projects. It cannot be used to conduct any site specific activity. The Core funds consist of \$302,185, down from \$380,000 budgeted in FY 1997).

**Table 6 - HEER Office Core Grant Funds**

	<b><u>Budget</u></b> <b><u>FY 1998</u></b>	<b><u>Expended</u></b> <b><u>As of 6/30/98</u></b>
A. Funds		
1 Planner V, SR-24		
1 EHS IV, SR-22		
1 Secretary, SR-14		
EPO Support		
ERO Support		
Subtotal	<hr/> 117,739	106,149
B. Funds	148,344	106,237
C. Funds	36,102	39,852
<b>TOTAL</b>	<hr/> <b>302,185</b>	<b>252,238</b>

**PA/SI Cooperative Agreement**

Since October 1989, Hawaii has entered into a PA/SI Cooperative Agreement (CA) with the EPA. The scope of this agreement is specific: can only be used for costs associated with continuing the federal PA/SI program in the State. PA/SI funds consist of \$177,211, down from \$282,500 budgeted in FY 1997.

**Table 7 - HEER Office PA/SI Cooperative Agreement Funds**

	<b><u>Budget FY 1998</u></b>	<b><u>Expended As of 6/30/98</u></b>
A. Funds		
1 Env. Health Spc. IV, SR-22		
2 Env. Health Spc. III, SR-20		
.5 Clerk Typist II, SR-08		
Subtotal	<u>132,260</u>	55,096
B. Funds	40,961	34,015
C. Funds	4,000	3,996
<b>TOTAL</b>	<b><u>177,221</u></b>	<b>93,107</b>

## **Federal Facilities Cleanup Grant**

The Department of Defense/State Memorandum of Agreement (DSMOA) program was established by the federal government to cover reimbursement of costs incurred by the state in providing oversight services to the Department of Defense (DOD) installations conducting environmental cleanup activities funded under the Defense Environmental Restoration Program (DERP). The program allows a funding limit of up to 1 percent of the funding allocation given to DOD installations in Hawaii under the DERP to accomplish environmental activities. Also, allowed is a funding limit of one and one-half percent (1.5%) of the funding allocation given to DOD installations which are closing under Base Realignment and Closure (BRAC).

A Cooperative Agreement (CA) application was submitted in September 1996 to obtain reimbursement funding to cover FY 1997 and FY 1998 costs incurred by Hawaii in the DSMOA Program. We have received approval for these costs: \$304,640 for FY 1997 and \$429,877 for FY 1998.

The DSMOA funds are allocated to the State based on analysis and projection of expenditures and given to the State in predetermined allotments. There is no carry over of funds unspent. Should the funds requested for a particular fiscal year remain unspent the predetermined allotment may be deducted prior to allocation or not awarded at all until previous allotment is near exhaustion. However, if there is need for additional funding the CA allows for the renegotiation of increased funding.

**Table 8 - HEER Office Fed Facilities Funds**

	<b><u>Budget FY 1998</u></b>	<b><u>Expended As of 6/30/98</u></b>
A. Funds		
1 Geologist, SR 24		
3 EHS IV, SR 22		
.5 Clerk Typist, SR 8		
Subtotal	173,877	116,092
B. Funds	253,000	31,016
C. Funds	3,000	2,354
<b>TOTAL</b>	<b>429,877</b>	<b>149,462</b>

# APPENDICES

# **APPENDIX A**

**1998**

**DEPARTMENT OF HEALTH  
RELEASE NOTIFICATION LOG**



# **APPENDIX B**

**1998**

**DEPARTMENT OF HEALTH  
STATE SITE LIST**