

FINAL ENVIRONMENTAL ASSESSMENT

---

**SOLID WASTE TO ENERGY  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT**

Campbell Industrial Park, Kapolei, Hawaii

Proposing Agency:

City and County of Honolulu  
Department of Environmental Services  
Refuse Division  
1000 Uluohia Street, Suite 212  
Kapolei, Hawaii 96707

June 2008

**DRAFT & FINAL ENVIRONMENTAL ASSESSMENT CHECKLIST**

**Title:** Solid Waste to Energy - Air Pollution Control System Improvements Project

**DRAFT ENVIRONMENTAL ASSESSMENT**

Document received \_\_\_\_\_ DEA placed in nearest public library? \_\_\_\_\_

Conditions which triggered the EIS Law. Check all that apply:

- Use of State or County Land or Funds
- Amendment to a County General Plan
- Use of Conservation District Lands
- Reclassification of Lands from Conservation to Urban
- Use of Shoreline Setback Area
- Construction or Modif. of Helicopter Facilities
- Use of Historic Site or District
- Use of lands in the Waikiki Special District
- Other

Comments/Recommendation/Justification:

Project necessitated to comply with Clean Air Act section 129 and newly promulgated emissions standards for large municipal waste combustors,

40CFR60 sub part Cb and the compliance schedule as established in 40CFR62

sub part FFF codified at 40CFR62.14100 et seq. / FONSI / Improves air quality

APPROVED FOR PUBLICATION: (sign) \_\_\_\_\_

DATE OF PUBLICATION: \_\_\_\_\_

DRAFT EA COMMENT DEADLINE: \_\_\_\_\_

**FINAL ENVIRONMENTAL ASSESSMENT (FONSI)**

Comments/Recommendation/Justification :

\_\_\_\_\_

APPROVED FOR PUBLICATION: (sign) \_\_\_\_\_

DATE OF PUBLICATION: \_\_\_\_\_

### DRAFT ENVIRONMENTAL ASSESSMENT

- \_\_\_ (1) Agency submittal letter and anticipated determination;
- \_\_\_ (2) Identification of applicant or proposing agency;
- \_\_\_ (3) Identification of approving agency, if applicable;
- \_\_\_ (4) Identification of agencies, citizen groups, and individuals consulted in making the assessment;
- \_\_\_ (5) General description of the action's technical, economic, social, and environmental characteristics; time frame; funding/source
- \_\_\_ (6) Summary description of the affected environment, including suitable and adequate regional, location and site maps such as Flood Insurance Rate Maps, Floodway Boundary Maps, or United States Geological Survey topographic maps;
- \_\_\_ (7) Impacts to cultural practices and resources, past and current (Act 50)
- \_\_\_ (8) Identification and summary of impacts and proposed mitigation measures;
- \_\_\_ (9) Alternatives considered;
- \_\_\_ (10) Discussion of findings and reasons supporting the agency anticipated determination;
- \_\_\_ (11) List of all required permits and approvals (State, federal, county);
- \_\_\_ (12) Written comments and responses to the comments under the early consultation provisions of sections 11-200-9(a)(1), 11-200-9(b)(1), or 11-200-15.

### FINAL ENVIRONMENTAL ASSESSMENT

- \_\_\_ (13) **Agency submittal letter;**
- \_\_\_ (14) **Agency determination;**
- \_\_\_ (15) **Discussion of findings and reasons supporting the agency determination;**
- \_\_\_ (16) **Written comments and responses to the comments under the statutorily prescribed public review periods.**

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City and County of Honolulu  
Department of Planning and Permitting  
Mr. Henry Eng, Director  
Mr. Timothy Hiu, Acting Chief  
Mr. Raymond Young, Planner  
808-768-8049

City and County of Honolulu  
Department of Planning and Permitting  
Mr. Jon Kurio, Plans Examining Engineer  
808-708-8232

- |    |                                |  |
|----|--------------------------------|--|
| 5. | <u>Tax Map Key Numbers</u>     | (1) 9-1-026-030 H-POWER<br>(1) 9-1-026-033 Laydown<br>(1) 9-1-026-034 Laydown<br>(1) 9-1-026-035 Laydown |
| 6. | <u>Property Owner</u>          | City and County of Honolulu  |
| 7. | <u>Land Use Classification</u> | 1-2<br>Intensive Industrial  |
| 8. | <u>Special Designation</u>     | Special Management Area<br>(Portion of proposed laydown)   |

**Summary Project Description**

The Solid Waste to Energy Air Pollution Systems Improvement Project (Project) is being undertaken to comply with recently promulgated regulations under the Federal Clean Air Act (40CFR60 subpart Cb). These regulations are specific to Large Municipal Waste Combustors (MWCs) constructed prior to September 1994 such as H-POWER. These regulations provide revised Emissions Guidelines relative to the control of certain pollutants including reduction in the allowable amounts of particulate matter, dioxins, furans and heavy metals including mercury.

The federal Environmental Protection Agency, (USEPA) has the responsibility for enforcing these guidelines and has established timelines for owners of existing MWC's to comply (40CFR62 subpart FFF).

To comply, the City and County of Honolulu, the owner of the H-POWER facility, has evaluated the existing air pollution control equipment and has determined the existing electro static precipitators, which filter the municipal waste combustor exhaust emissions, will need to be replaced with bag house filters. These bag house filters more efficiently capture and remove the particulate matter from the exhaust gas. Along with the particulate matter, dioxins, furans and

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heavy metals, which are absorbed by or are carried by the suspended particles, are also removed thereby demonstrating that bag house filters satisfy the Maximum Achievable Control Technology (MACT) as required by the new Emissions Guidelines as promulgated by the - USEPA.

To satisfy the higher filtering capacity of the bag houses, the capacity of the induced draft fans will be increased commensurate with the higher differential pressure as will be created by these more efficient filters.

Certain ancillary changes will be required including electrical power distribution and supply, possible reinforcement of the boilers and associated ductwork, and rerouting and reconfiguration of the ash conveying system which moves the captured particulate matter from the bag house filters to the ash conditioning and load out structure.

Despite these equipment changes, neither the through put capacity nor the electrical generation capability of the Waste to Energy facility will change. Therefore, the system and facility remains essentially as permitted with no additional or changed environmental, community, social, economic, cultural, historic, natural, scenic, coastal, energy consumptive or other adverse impacts or effects. The sole impact or effect is a positive change to air emissions thereby decreasing potential adverse effects on human health and the environment. Therefore, it is anticipated the project will be determined to be either Exempt or that a finding of No Significant Impact (FONSI) will be issued.

Chapter 343 of the Hawaii Revised Statutes (HRS) and the Hawaii Administrative Rules (HAR), Title 11, "DEPARTMENT of HEALTH" Chapter 200 section 11-200-8 specifies certain exempt classes of actions including:

"(1) Operations, repairs or maintenance of existing ...facilities...involving negligible or no expansion or change of use beyond that previously existing;

(2) Replacement .. of existing .. facilities where the new structure will be located on the same site and will have substantially the same purpose, capacity, density, height, and dimensions of the structure replaced".

For the above stated reasons, the proposed project also appears to satisfy the requirements of the Agency Comprehensive Exemption List, maintained by the Department of Environmental Services of the City and County of Honolulu as dated August 2007 (draft) under exemption class #1, item 8, "Existing public facility structures, facilities or equipment involving negligible expansion or change of use beyond that previously existing".

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However, construction of the Project will require construction office space, parking for craft workers, construction access, storage space and room for pre-assembly. To meet these needs the Project intends to utilize approximately 8 acres of space on adjacent City-owned parcels as located on Kaomi Loop and depicted on drawing SKC 001, enclosed. Predominately for the additional need of using this space, an EA is deemed appropriate.



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**Section 1-General Description**

**1.1 Technical Characteristics**

The H-POWER facility is a large Municipal Waste Combustor (MWC) wherein Municipal Solid Waste is prepared by magnetically removing metal, shredding and screening the remaining waste and thereby producing a Refuse Derived Fuel, RDF. The RDF is combusted in two large water wall type furnaces wherein steam is produced. Steam drives a turbine generator for the recovery of energy through the production of electricity. The H-POWER process is depicted on Figure 1.1-1.

The products of combustion include incinerator ash and flue gas. As originally designed, each of the two large municipal waste combustors is equipped with a dedicated air pollution control system, basically consisting of an electro static precipitator for the removal of particulate matter from the flue gas by ionizing the particles and collecting them through electro static attraction onto filter plates. Prior to initial operation, the system was upgraded through the addition of semi dry scrubbers for the chemical neutralization of acid forming gases through the addition of calcium carbonate in the form of lime to the flue gas steam.

Discharge of the flue gas is subject to environmental control and regulation under the federal Clean Air Act, CAA. The CAA is under the purview of the federal Environmental Protection Agency, USEPA. The flue gas can contain acid forming chemicals, generally in the form of chlorine and sulfur, particulate matter or fly ash, organic compounds including dioxins and furans, and heavy metals. The emissions guidelines are designed to control emissions of these Hazardous Air Pollutants, HAPs.

Under the CAA, USEPA promulgated air emissions standards for flue gas in 1995 which were implemented in 2000. In accordance with section 129 and section 111 of the CAA, these standards are reviewed at five year increments and may be amended to reflect the actual emissions standards achieved at existing facilities more commonly referred to as Maximum Achievable Control Technology, MACT, standards.

For H-POWER, the specific MACT standard emissions guidelines are incorporated in the Code of Federal Regulations, 40 CFR 60, subpart Cb, applicable to large Municipal Waste Combustors constructed prior to September 1994. These revised emissions guidelines became law on May 10, 2006 by USEPA publishing a Final Rule (71 Fed. Reg. 27,324).

Basically, these revised emissions guidelines effect the following components of the flue gas stream emissions:

Particulate Matter	reduced from 27 to 25 mg/dry standard cubic meter;
Dioxin / Furans	reduced from 60 to 30 ng/dry standard cubic meter;
Lead	reduced from 0.44 to 0.40 mg/dry standard cubic meter;
Mercury	reduced from 0.08 to 0.05 mg/dry standard cubic meter;

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Cadmium reduced from 0.040 to 0.035 mg/dry standard cubic meter (all corrected to 7• oxygen).

After diligent review, the City and County of Honolulu, owner of H-POWER, determined that compliance with these revised emissions guidelines would require modification of the existing Air Pollution Control System consisting of semi dry scrubbers for acid gas neutralization and electro static precipitators, ESPs, for removal of particulate matter along with the absorbed or attached dioxins, furans and heavy metals, by replacing the ESP filters with bag house filters.

Along with issuing the new MACT standard emissions guidelines, the USEPA established a timeline for modification of existing control technologies to comply with the revised emissions guidelines. The timeline is established under 40 CFR62, subpart FFF wherein the facility must be in compliance no later than May 2011.

### **Bag House Filters**

The Bag House filters (baghouses) are fabric type filters wherein particulate matter is captured from the flue gas stream by mechanical filtration achieved when passing the flue gas through tightly woven fiberglass filter bags. Acid forming gases are controlled by the semi dry scrubbers.

The bag house filters as selected for H-POWER are as manufactured by SPE Amerex, model RA-35-185 D12 consisting of two parallel assemblies, one for each boiler, each consisting of 10 individual filter compartments.

Each filter compartment is equipped with 180 filter bags, each 35 feet long and with a nominal diameter of 12 inches providing a total net filter cloth area of 19,080 square feet per compartment.

The design flow rate of flue gas is 323,980 actual cubic feet per minute providing a gross air to cloth ratio of 1.7:1.

The bag house assemblies are designed to operate with one compartment out of service for cleaning.

Cleaning is accomplished by isolating compartments using damper valves and reversing air flow through the isolated compartment using a reverse air fan thus collapsing the bag and forcing the collected particulate matter or fly ash to drop from the bags into a hopper located below the bag house compartment.

A dedicated air compressor assists in the cleaning operation by providing compressed air for damper operation and vibration of the collection hoppers.

The emptied bag house contents are removed from the hopper by conveyors and transported to the ash conditioning and removal equipment.

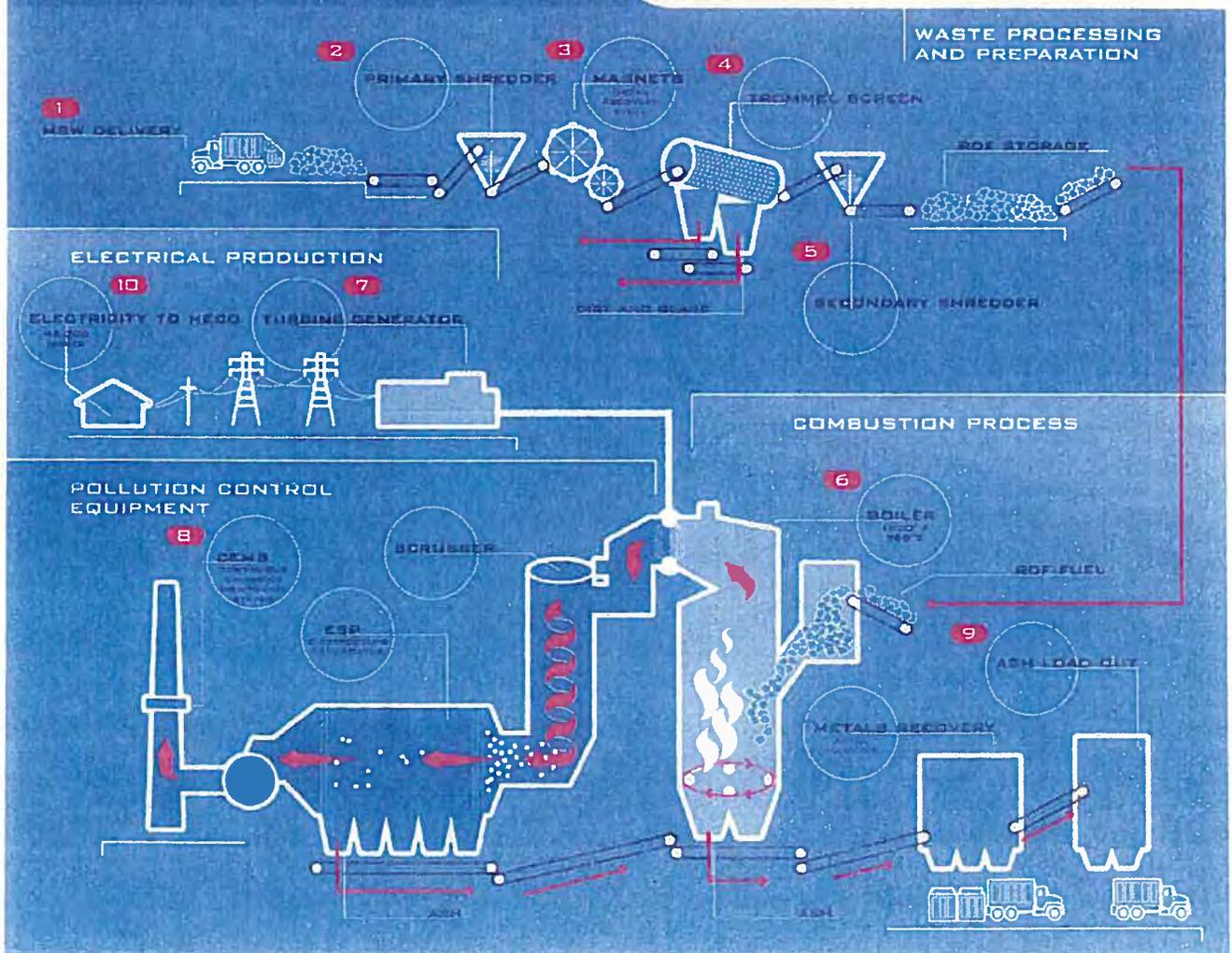
**STEP INSIDE THE HPOWER FACILITY  
AND YOU CAN FEEL THE ENERGY.**

HERE, ORDINARY HOUSEHOLD GARBAGE IS CONVERTED INTO ENVIRONMENTALLY SOUND, RENEWABLE ELECTRICITY THAT POWERS THOUSANDS OF OAHU HOUSEHOLDS. IN THE PROCESS, PRECIOUS LANDFILL SPACE IS PRESERVED. 600,000 BARRELS OF IMPORTED OIL PER YEAR ARE SAVED AND THE BEAUTY OF OUR ISLAND HOME IS PROTECTED.

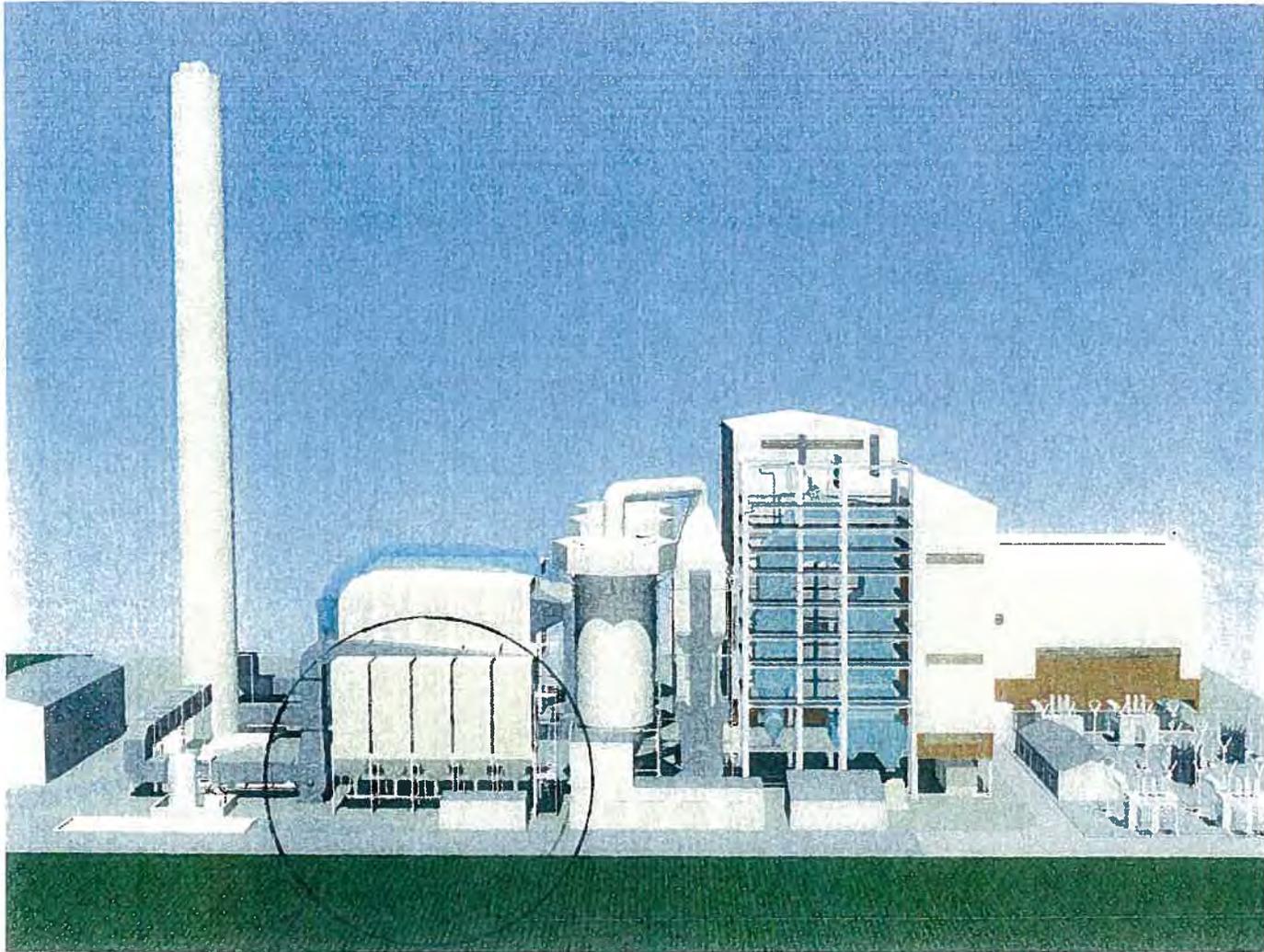
**THE HPOWER PROCESS:**

(MATCHES UP TO NUMBERS ON DIAGRAM)

- 1 TRUCKS DELIVER MUNICIPAL SOLID WASTE
- 2 PRIMARY SHREDDER OPEN AND SPREAD WASTE
- 3 ELECTROMAGNETS REMOVE METALS FOR RECYCLING
- 4 SCREENS REMOVE DIRT, SAND AND GLASS
- 5 SECONDARY SHREDDER PROCESSES REMAINING WASTE
- 6 WASTE IS COMBUSTED IN BOILER PRODUCING STEAM
- 7 STEAM DRIVES TURBINE TO GENERATE ELECTRICITY
- 8 AIR POLLUTION CONTROL EQUIPMENT CLEANS EXHAUST GAS
- 9 ASH IS HAULED TO LANDFILL FOR DISPOSAL
- 10 RENEWABLE ELECTRICITY POWERS 45,000 HAWAII HOMES



Simplified Process Flow Diagram of the Proposed Expansion



BAG HOUSE FILTER



Elevation View of the Proposed Expansion

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The bag house assemblies are designed to fit within the foot print of the existing ESPs. However, due to the length of the filter bags, the assemblies will be taller than the existing ESP filters.

The bag house assemblies will be supported by a structural steel framework in turn supported on isolated concrete footings and or piles. The bag house filter is depicted adjacent to the smokestack on Figure 1.1-2.

### **Induced Draft Fans**

The bag house assemblies offer more resistance to flue gas flow than the ESPs. Therefore it is also necessary to increase the capacity of the induced draft flue gas fans. Therefore each boiler/bag house assembly will be provided with a new induced draft fan as follows:

Robinson Industries model BC0920-31 or equal  
19x24.25 inch fan rated at 303,313 ACFM  
32 .0 inch water column static pressure @ 0.0483 111413 air density and 300 degrees of operating at 880 RPM  
Equipped with inlet vortex damper and pneumatic operator powered by 2000 HP 900 RPM totally enclosed, air cooled motor

The fans will sit on isolated concrete foundations.

### **Air Compressors**

Each boiler/bag house assembly will be equipped with a dedicated air compressor, Sullair model LS200 or equal, 100 HP air cooled rotary screw type air compressor sized to deliver 426 acfm at 125 psig.

### **Reverse Air Fans**

Each boiler/bag house assembly will be equipped with a reverse air fan for bag cleaning, Robinson Industries model BC0920-31 or equal centrifugal fan size 65x6.125 producing 28,620 ACFM at 17.5 inches of water column static pressure using air with a density of 0.0499 lb/ft<sup>3</sup> at 300 degrees F.  
Powered by a 125 hp electric motor

### **Duct Work**

To minimize impact on operations a design has been developed wherein the first new bag house assembly will be erected in space reserved for the third boiler addition thereby allowing complete construction during continued operation. During a short maintenance outage contemplated to last no longer than 23 days, the new bag house filter and induced draft fan will be connected between the existing boiler with scrubber and the existing third boiler flue within the smoke stack through modified duct work. The duct work will be constructed of ASTM A-36 plate steel, adequately stiffened and supported with structural steel shapes.

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**Boilers**

Because of the larger ID Fans it may be necessary to reinforce the existing boilers and connecting duct work with the addition of buck stays, hangers and intermittent duct work stiffeners.

**Ash Handling**

Additional drag chain type conveyors will be required to remove the higher volume of captured fly ash from the bag house filter assemblies.

**Power Distribution**

Modification to the station power distribution system will be required removing the loads from the electro static filters and adding new or increased loads for the new bag house including reverse air fans, dedicated air compressor, upgraded ID Fan and revised fly ash conveying system.

**Control System**

A new micro processor controller will be integrated into the plant control system for operation of the revised APC system.

**12 Economic Characteristics**

The project is estimated to cost between \$40 and \$50 million dollars as a capital improvement. There are no projected cost increases for operation.

During construction, which is anticipated to span 3 years, the project will generate an estimated 50 construction jobs based on a total labor cost of \$15,000,000 and an annual payroll cost (salary and benefits) of \$100,000 per worker.

It is further anticipated \$5,000,000 will be spent on construction type materials and supplies including concrete, steel and asphalt which will be locally procured.

Trickle down effects will include a minor increase in service sector economics associated with the above growth in employment and commerce.

Outside of the temporary economic effects from construction, no growth associated with a population increase including school costs is anticipated.

**1.3 Social Characteristics**

By reducing the level of air pollutants, a general improvement in health and the associated social characteristics may be anticipated.

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**14 Environmental Characteristics**

By improving the emissions from H-POWER, the environment will be impacted in a positive manner. There will however be an environmental impact associated with disturbance of the adjacent parcels which will be developed for use as a construction staging, parking and laydown area. Within these parcels are established plant sanctuaries and drainage features. Each will be adequately protected including establishment of buffer zones and an erosion and sedimentation control program.

**1.5 Schedule/Time Frame**

An implementation schedule has been established with Region 9 of the USEPA in conformance with the Increments of Progress provisions of 40 CFR 62 sub part FFF as follows:

1.	Submit Control Plan	April 20, 2007	accomplished
2.	Award Contract(s)	February 15, 2008	accomplished
3.	Initiate Construction	March 17, 2008	anticipated 6/16/2008
4.	Complete Construction	October 29, 2008	
5.	Final Compliance	April 29, 2011	

A bar chart schedule is included.

**1.6 Funding /Source**

The City and County of Honolulu has appropriated \$40,000,000 in the FY-2008 budget. An additional \$10,000,000 budget request has been submitted in the FY-2009 budget process.

A table of estimated costs and commitments is included. As originally estimated the project was valued at \$36,000,000. Due to high demand for power plants, the increased cost of energy, and the need to retro fit multiple MWC's nation wide, the cost has escalated to a current estimate of \$50,000,000.

Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish
START	0	0	16OCT07A	16OCT07A
AMEND OPERATING CONTRACT	20	0	20NOV07A	29FEB08A
AWARD ORDER FOR BAG HOUSE	10	0	27NOV07A	04FEB08A
BID/AWARD CONSTRUCTION CONTRACT	20	4	05FEB08A	02APR08
PROVIDE FOUNDATION LOADS & DETAILS	11	8	13MAR08A	08APR08
FABRICATE BAG HOUSE #2	220	200	13MAR08A	01JAN09
EPA MILESTONE #1	0	0		02APR08
DESIGN FOUNDATIONS AND UTILITY INTERCONNECTS	39	39	09APR08	02JUN08
MOBILIZE CONSTRUCTION	10	10	02JUN08*	13JUN08
SECURE BUILDING PERMIT	20	20	03JUN08	30JUN08
EPA MILESTONE #2	0	0		13JUN08
SITE WORK	60	60	16JUN08	05SEP08
FOUNDATIONS, BAG HOUSE #2	60	60	08SEP08	28NOV08
SHIP BAG HOUSE #2	20	20	02JAN09	29JAN09
FABRICATE BAG HOUSE #1	220	220	02JAN09	05NOV09
INSTALL BAG HOUSE #2	140	140	30JAN09	13AUG09
START UP, TEST, COMMISSION	30	30	14AUG09	24SEP09
DEMOLISH ESP #2	20	20	25SEP09	22OCT09
SITE WORK BAG HOUSE #1	40	40	23OCT09	17DEC09
SHIP BAG HOUSE #1	20	20	06NOV09	03DEC09
FOUNDATIONS BAG HOUSE #1	60	60	18DEC09	11MAR10
ERECT BAG HOUSE #1	120	120	12MAR10	26AUG10
DISCONNECT ESP #1	10	10	27AUG10	09SEP10
COMPLETE CONSTRUCTION	10	10	10SEP10	23SEP10
EPA MILESTONE #3	0	0		23SEP10
START UP, TEST, COMMISSION BAG HOUSE #1	30	30	24SEP10	04NOV10
CERTIFY FINAL COMPLIANCE	120	120	05NOV10	21APR11
EPA MILESTONE #4	0	0		21APR11

Start Date 16OCT07  
 Finish Date 21APR11  
 Data Date 28MAR08  
 Run Date 27MAR08 07:22



BAGH

H-POWER

Bag House

Classic Schedule Layout

Sheet 1 of 1

Date	Revision	Checked	Approved

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**H-POWER Baghouses**

Consulting/Permitting/Engineering	\$4,411,600
Equipment	\$15,506,800
Construction	
civil	\$1,413,500
demolition	\$68,000
mechanical	\$10,900,300
electrical	\$754,000
instrumentation	\$172,000
Commissioning/Start-up	\$672,400
Contingency	\$2,129,800
<hr/>	
<b>Total</b>	<b>\$36,028,400</b>

BAG HOUSE  
COST DISTRIBUTION

Task Order No.	Description	Estimate	Commitment	Construction	Design	Planning	Other	cross check
1	Bag House	\$11,370,985	\$11,370,985	\$11,370,985				\$11,370,985
2	Engineering	\$3,000,000	\$3,000,000		\$3,000,000			\$3,000,000
3	Boiler Mod	\$1,837,500	\$1,245,406	\$1,059,441	\$185,965			\$1,245,406
4	Ash Handling	\$2,100,000		\$2,000,000	\$100,000			\$2,100,000
5	Elec Equip	\$1,015,000		\$965,000	\$50,000			\$1,015,000
6a	Construction Phase I	\$12,000,000		\$12,000,000				\$12,000,000
7	System Integrator	\$498,500		\$498,500				\$498,500
8	Spare Parts	\$330,750		\$330,750				\$330,750
9	Contract Admin	\$1,330,000		\$1,080,000		\$249,000	\$1,000	\$1,330,000
10	Start Up	\$659,000		\$659,000				\$659,000
11	Ins/Shipping	\$662,000		\$662,000				\$662,000
	sub total	\$34,803,735						
	Contingency	\$3,196,265		\$2,785,265	\$411,000			\$3,196,265
	total	\$38,000,000	\$15,616,391	\$33,410,941	\$3,746,965	\$249,000	\$1,000	\$37,407,906
12	Construction Phase 2	\$14,239,500						
	Grand Total	\$52,239,500						

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**Section 2-Summary Description of Existing Environment**

**2.1 Description of the Property**

The Project is proposed to occur on the existing H-POWER parcel. That site consists of 24.635 acres (1,073,100 ft<sup>2</sup>) of industrially zoned and developed property situated within the James Campbell Industrial Park, JCIP, in Kapolei and is included in the Long Range Master Plan for the Kapolei area. Figure 2.1-1 depicts both the Master Plan and the JCIP. The parcel's Tax Map Key number is # (1)9-1-026:030. Figure 2.1-2 depicts the site location on a USGS topographic map and shows the major roadways in the vicinity of the existing H-POWER facility. Due to the site's existing industrial nature, there are no designated environmental site constraints on the parcel. Additional detailed information on the site is presented within this EA.

Also shown on Figure 2.1-2 and 2.1-3 are three parcels to be used temporarily for construction equipment laydown and construction parking. These parcels are situated immediately to the west of the H-POWER site and are also owned by the City and County of Honolulu. They are industrially zoned, previously disturbed, but currently undeveloped. The parcel Tax Map Key numbers are, from north to south, # (1)9-1-026:035, 034, and 033. Parcel 035 is 7.531 acres, Parcel 034 is 8.164 acres, and Parcel 033 is 6.041 acres, for a combined acreage of 21.736 acres. However, due to site constraints not all of that acreage is available for use. Site constraints include fenced plant sanctuaries and a designated Special Management Area (SMA). These sanctuaries and the SMA will not be utilized. They are mapped, and the measures proposed to avoid impact to them are presented within applicable sections of this EA.

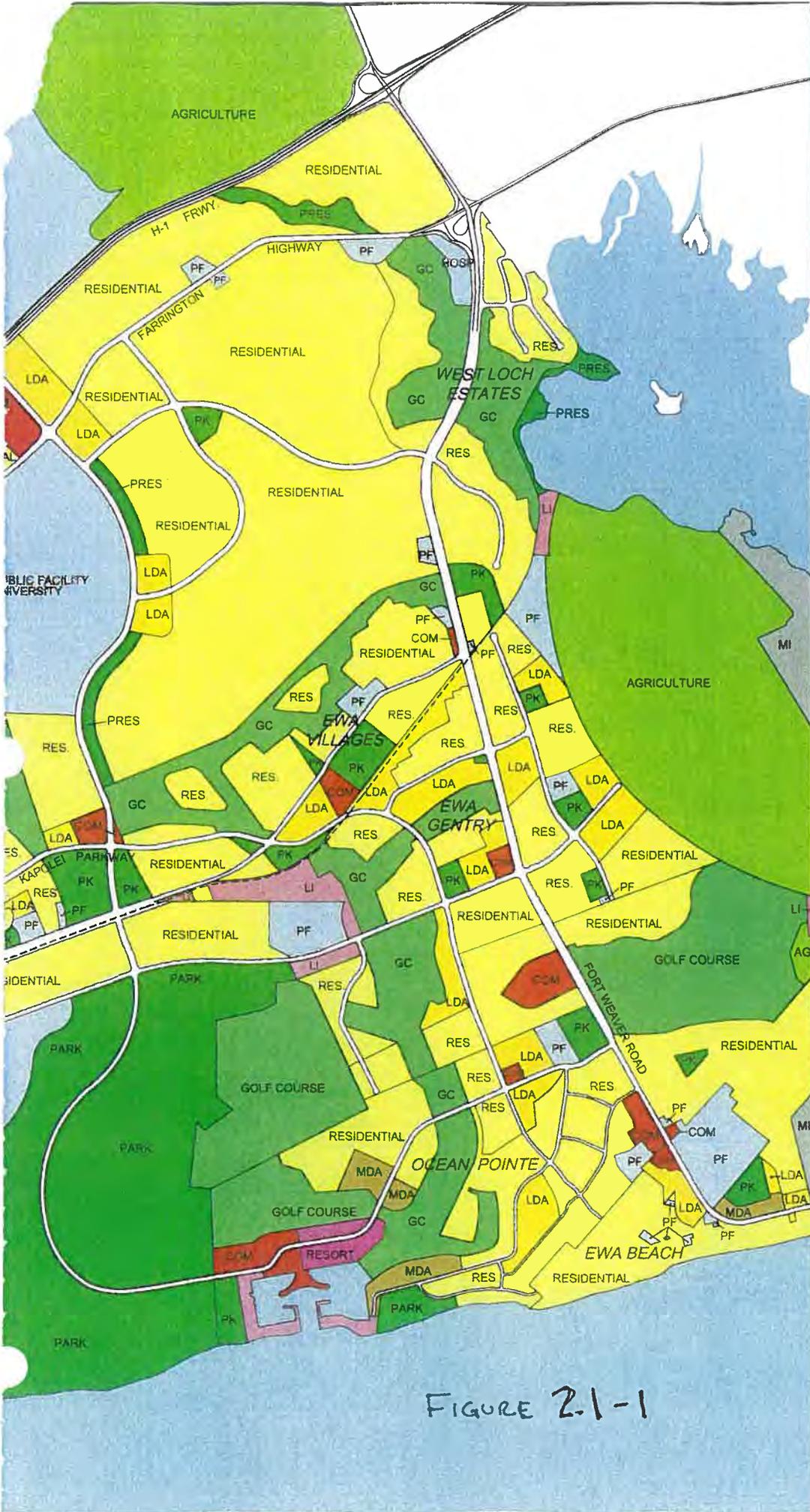
**2.2 Surrounding Land Uses and Zoning**

Figure 2.2-1 is an aerial photograph showing the existing industrial nature of the site, the three adjacent parcels to be utilized during construction, and the surroundings within 1-mile of the H-POWER site. As can be seen from the aerial photograph, the surrounding land uses are predominantly industrial in nature. To better illustrate the occupants of neighboring parcels, Figure 2.2-1 presents an overview of the occupied/leased lots within JCIP (JCIP 2003). Figure 2.2-2 depicts the neighbors and Table 2.2-2 identifies each of them and their direction relative to H-POWER.

# Kapolei Area Long Range Master Plan

Ewa, Oahu, Hawaii

The Estate of James Campbell



### LAND USE CLASSIFICATION

- RES Residential
- LDA Low Density Apartment
- MDA Medium Density Apartment
- COM Commercial/Office
- BP Business Park
- LI Light Industrial
- HI Heavy Industrial/Maritime Industrial
- RESORT Resort
- PK Park
- MI Mixed Use
- PF Public Facility/Utility
- GC Golf Course
- PRES Preservation
- AG Agriculture
- MI Military
- ✳ Palehua Telecommunications

### CIRCULATION

- Railroad
- Transit

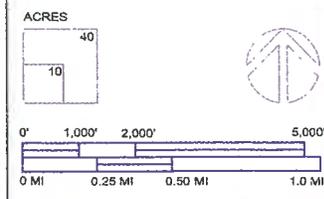
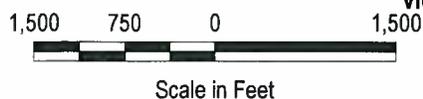
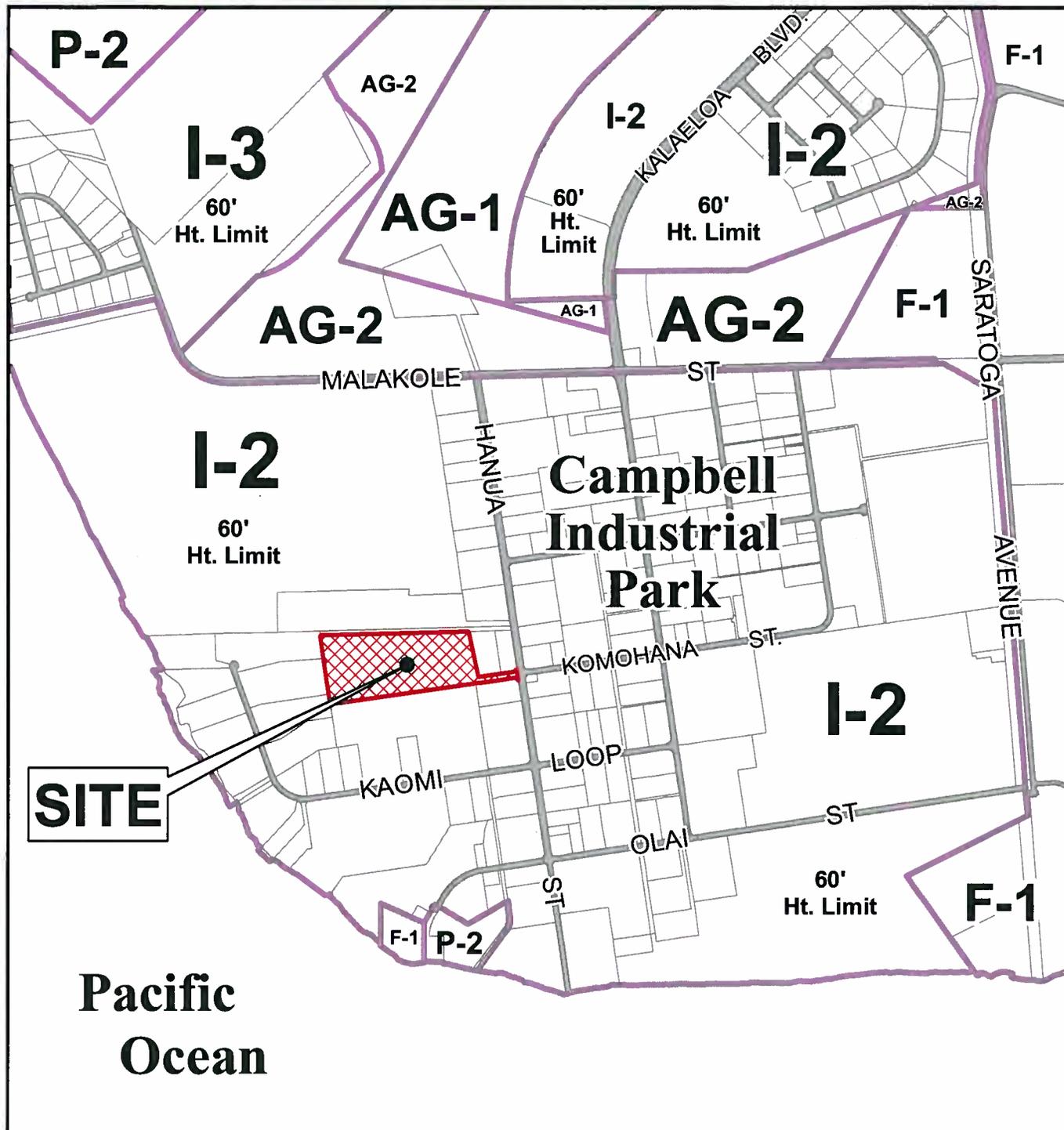
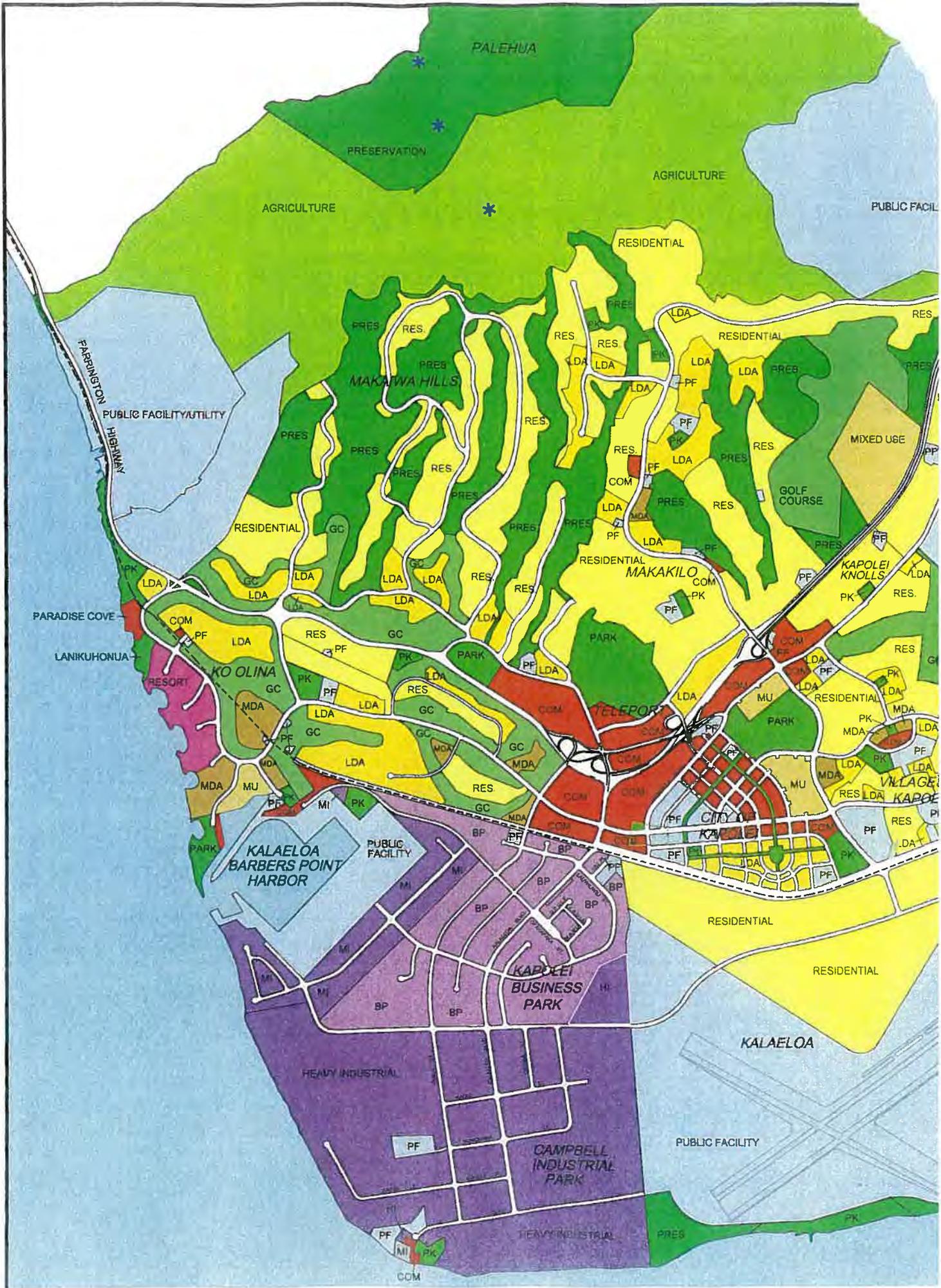


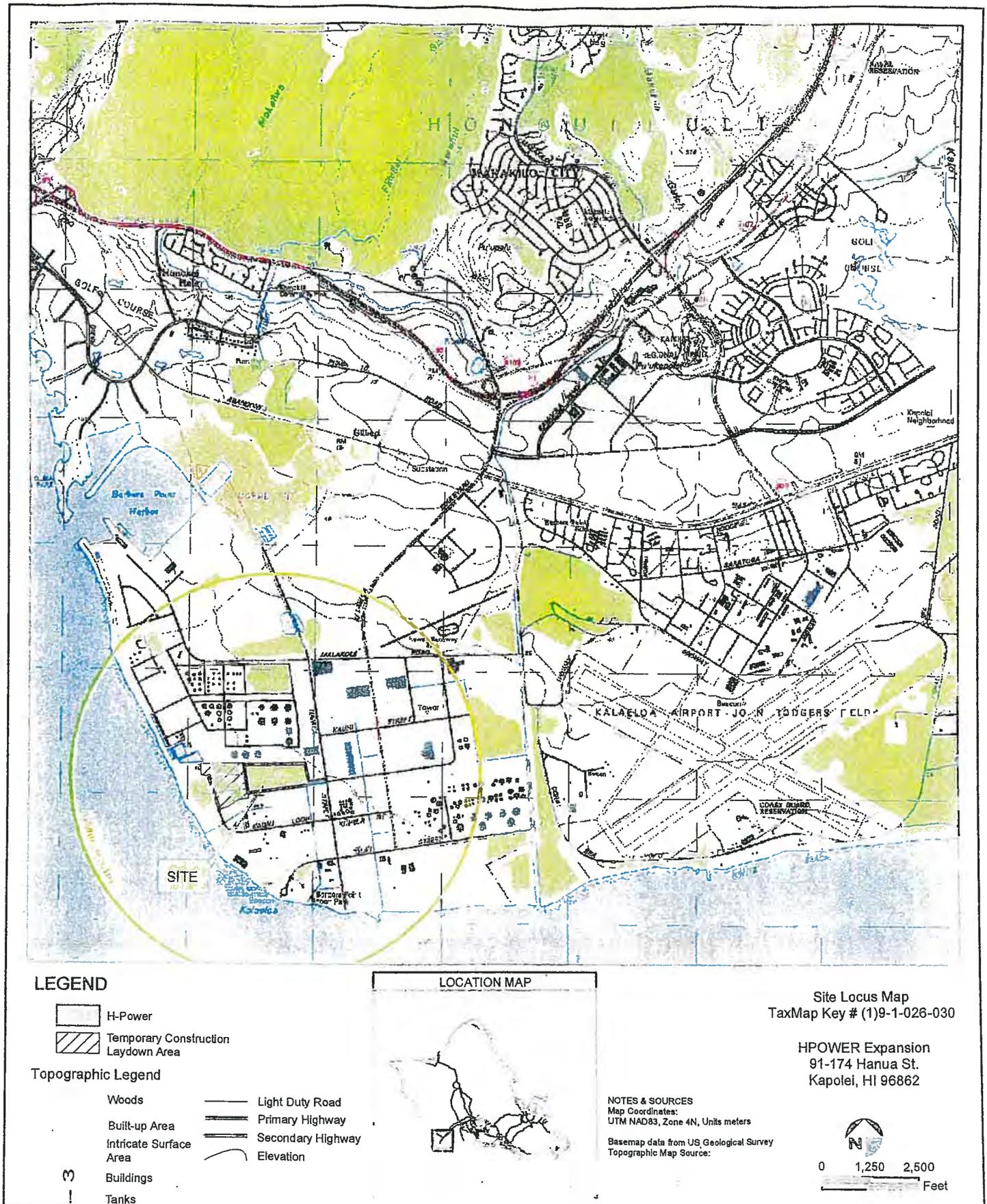
FIGURE 2.1-1



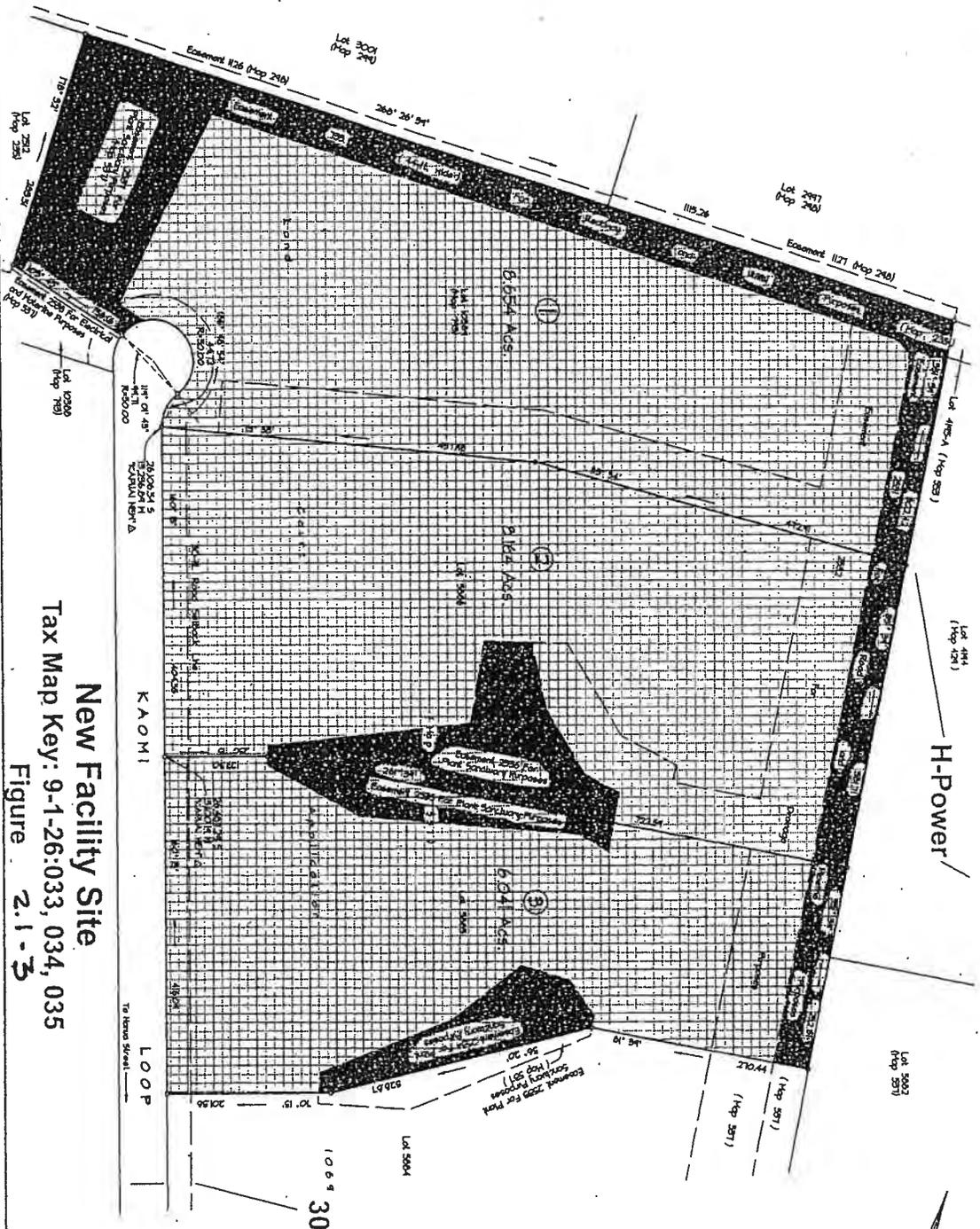
PORTION OF  
**EXISTING ZONING MAP**  
**BARBERS POINT - KAHE**  
**- NANAKULI**

TAX MAP KEY(S): **9-1-26: 30**  
 FOLDER NO.: **2008/ELOG-1005**





Work Order No. 101  
 Control No. 20230344  
 AT MAP KEY: 9-1-26-033, 034 & 035



**New Facility Site**  
 Tax Map Key: 9-1-26:033, 034, 035  
 Figure 2.1-3

**Notes:**

- \* The 22.86 acre site for this project is formed of 3 separate TMK parcels.
- \* The offeror shall be responsible for all permitting work required to combine the parcels for their proposed facility.
- \* Easement areas colored in "black" may NOT be constructed over.
- \* The facility design shall provide 50' buffers around all plant sanctuary areas.

PARCELS 1, 2 and 3  
 PARCEL MAP

DEPARTMENT OF DESIGN AND CONSTRUCTION  
 CITY AND COUNTY OF HONOLULU  
 DIVISION OF LAND SURVEY AND ADMINISTRATION

**RECYCLING TECHNOLOGY PARK**

AT HONOLULU, EWA, OAHU, HAWAII

SUBJECT: A. [unclear]  
 PROD. SIM: S. [unclear]  
 SCALE: 1" = 100' TL

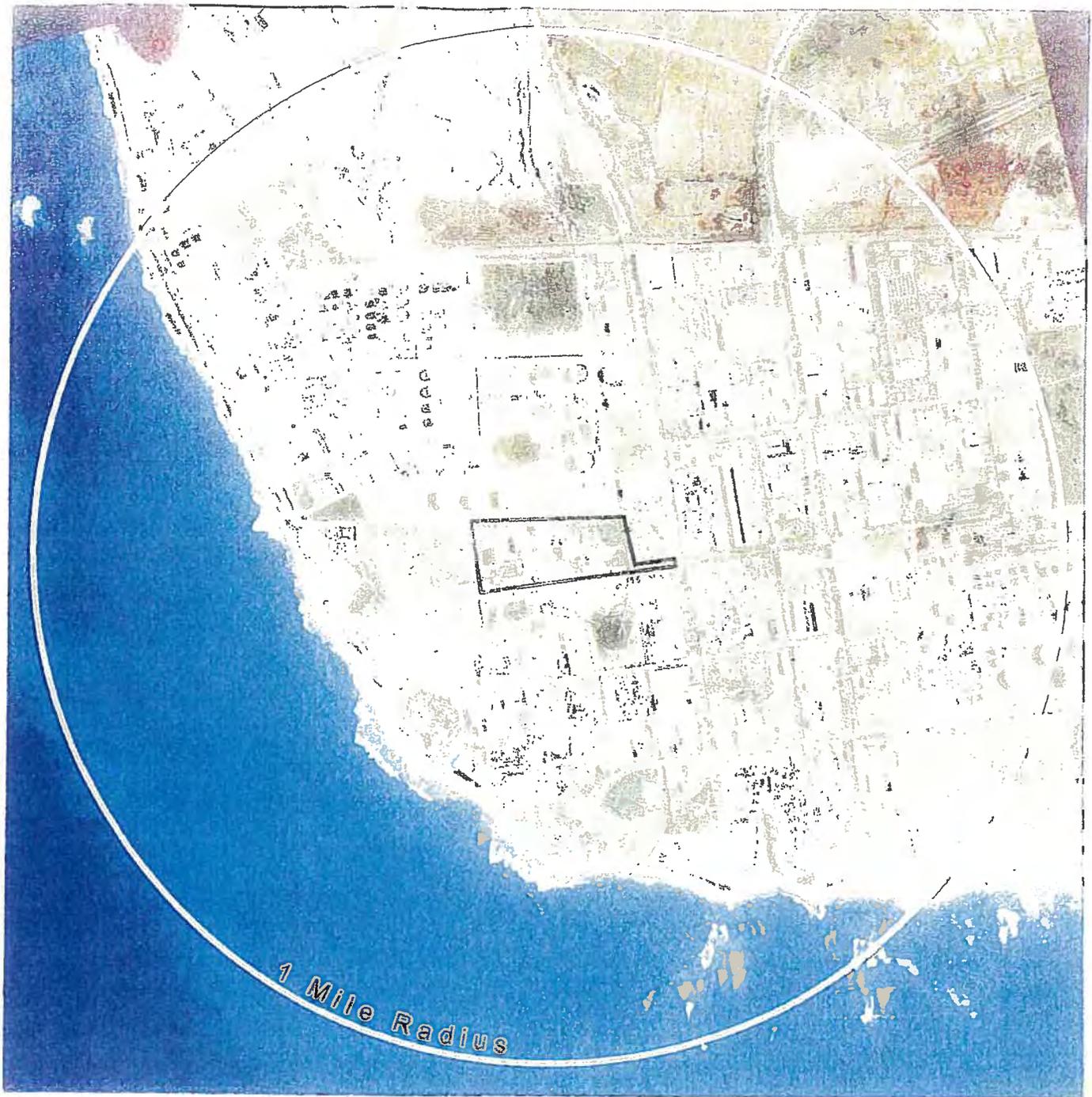
DATE: August 30, 2002  
 CHECKED BY: [unclear]  
 TRACED BY: T. [unclear]

APPROVED: [Signature]  
 DIRECTOR

APPROVED: [Signature]  
 SUPERVISOR

DATE	BY	PROJECT	STATUS
10/17	10	10	4

**FIGURE 2.1-3**



**LEGEND**

□ H Power



Site Locus Map  
TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
91-174 Hanua St.  
Kapolei, HI 96862

NOTES & SOURCES  
Map Coordinates:  
UTM NAD83, Zone 4N, Units meters

Source: Aerial Photo courtesy of NOAA: May16, 2000  
Zoning Source: DPP 10/13/2004

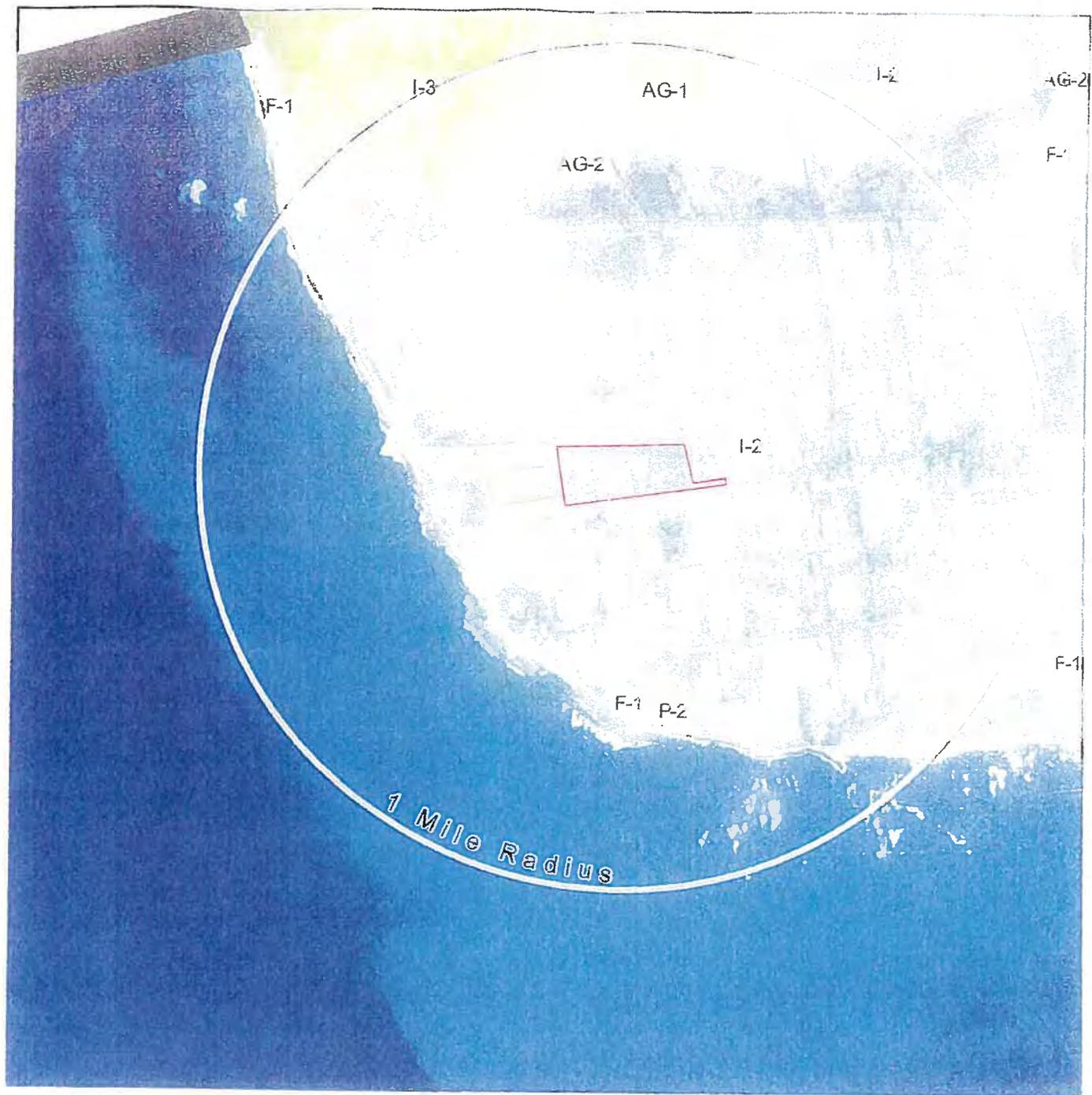


amec

Aerial Photo

FIGURE  
2.2-1





**LEGEND**

 H Power  
 Temporary Construction

**Zoning**

-  Ag-1 Restricted
-  Ag-2 General
-  F-1 Military and Federal
-  I-2 Intensive
-  I-3 Waterfront
-  P-2 General



Site Locus Map  
TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
91-174 Hanua St.  
Kapolei, HI 96862

**NOTES & SOURCES**  
 Map Coordinates:  
 UTM NAD83, Zone 4N, Units meters  
 Source: Aerial Photo courtesy of NOAA, May16, 2000  
 Zoning Source: DPP 10/13/2004



**Zoning**

**FIGURE**  
**2.2-3**

**FINAL ENVIRONMENTAL ASSESSMENT  
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**Table 2.2-1 Occupied/leased Lots within JCIP and their Direction Relative to H-POWER**

<b>Direction Relative to H-POWER</b>	<b>Neighbor</b>
South	AES coal-fired facility
East	Hawaiian Electric Company (HECO)
North (roadway parcel)	Campbell Hawaii Investor, LLC
North	HECO
North	Chevron
North	Chevron
West	Undeveloped but disturbed land owned by the City and County of Honolulu

The JCIP, and most of the area within 1 mile of the site, is zoned 1-2 Intensive, as shown on Figure 2.2-3 Zoning. Under Chapter 21 - Land Use Ordinance (LUO), waste disposal and processing are allowed under a Conditional Use Permit - minor and subject to the Specific Use Development Standards identified in Article 5 of the Ordinance.

Although the H-POWER facility is an existing use, alterations, additions, or modifications require a permit. H-POWER will comply with the requirements of the Conditional Use Permit, as well as other federal, state, and local permits and approvals. Each of the required permits and approvals is addressed in this EA.

**2.3 Existing Conditions - Geology and Soils**

The Hawaiian islands are the exposed parts of the Hawaiian Ridge, a large volcanic mountain range extending northwestward across the central Pacific Ocean (USGS 1999). The island of O'ahu is the eroded remnant of two volcanoes the older Waianae Volcano in the west and the larger Koolau Volcano in the east. Clastic sedimentary deposits, which primarily are alluvium derived from erosion of the volcanic rocks, have accumulated on the flanks of the island. In some places, the elastic sediments are interbedded with coralline limestone that formed as reef deposits in shallow marine waters. O'ahu has larger areas of sedimentary deposits than any other Hawaiian island and these deposits contain coralline limestone in coastal areas (USGS 1999).

The proposed Project, including the adjacent construction laydown and parking areas, is situated within the JCIP in Kapolei, Hawaii. This area is underlain by the Ewa Plain, which is an emerged coral-algae limestone reef formed during the Pleistocene period when the ocean level was at higher elevation (C.E. Maguire 1986). The Ewa Plain extends from sea level at the coastline to approximately 3 to 5 miles inland. Figure 2.3.1, excerpted from a 1986 geotechnical report by C.E. Maguire, presents the extent of the emerged reef deposits on the island of O'ahu and specifically in the project area. The following local and site specific information is in large measure excerpted from that 1986 final geotechnical report conducted for the original H-POWER facility.

**FINAL ENVIRONMENTAL ASSESSMENT  
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The local geology is typical of mid-Pacific volcanic islands in that the central volcanic core is surrounded and sometimes overlain by a coastal plain of interbedded marine sediments, alluvium, and coral reef formations. In the area of the H-POWER site, on the basis of a projected dip slope of 5 degrees from the volcanic formation, this overlying coastal plain is estimated to be 600 to 800 feet thick (C.E. Maguire 1986). The coral reef deposits on-site in 1986 (pre-construction of H-POWER) were typical of those found throughout the Barbers Point area. The surficial layer typically consists of corals, calcareous algae, cemented beach sand, and cemented mixtures of coralline sand, gravel and coral fragments often termed "coral rock". This coral rock often contains cavities of various sizes and at various depths. The ground surface topography is termed "shallow karst" topography marked by small sink holes generally 0.5 to 3.0 feet in diameter and from approximately 3 to 10 feet deep, which have been dissolved out of the limestone by fresh rain water (C.E. Maguire 1986).

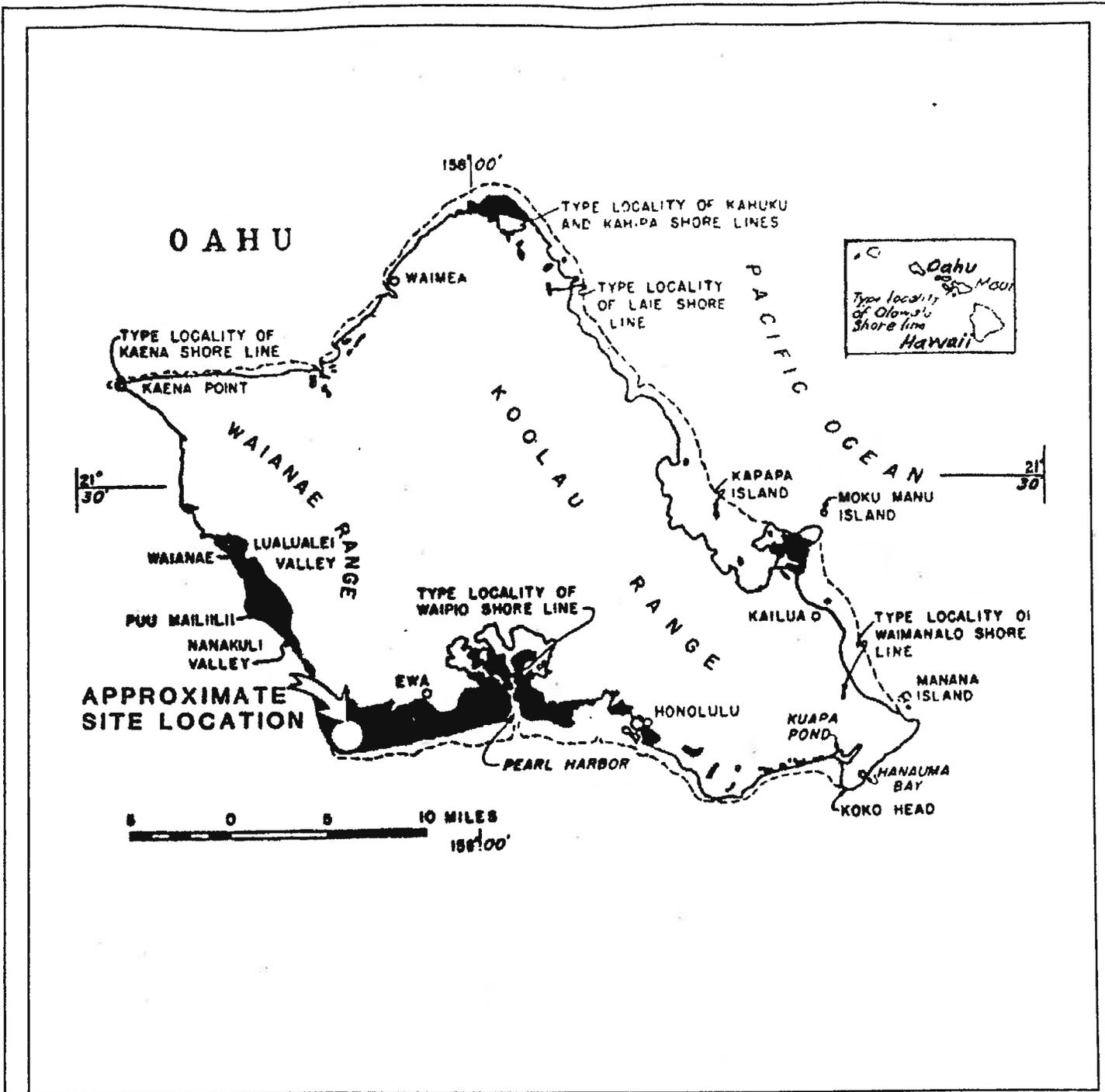
Soil throughout the area, and underlying both the H-POWER site and each of the laydown parcels, is classified as Coral Outcrop by the United States Department of Agriculture (USDA) Soil Conservation Service (USDA SCS 1965). This soils data is mapped on Figure 2.3.2.

### **H-POWER**

Prior to construction of the existing H-POWER facility, vegetation was cleared and grubbed in preparation for a proposed refinery project in 1969. Many of the site sinkholes in the area were loosely filled during the site clearing of 1969. In 1985 H-POWER was constructed in accordance with the site preparation and foundation recommendations developed by the geotechnical consultant, C.E. Maguire. Site preparation included initial site subgrade preparation, consisting of clearing, grubbing and stripping of soft silty organic topsoil from the site. Site preparation also consisted of repairing surface cavities and leveling the site. A systematic probing, breakdown and grouting of below surface voids proceeded where cavities were identified. General surface cavity repair was conducted. Proof rolling (with 100 ton vehicles) to detect cavities or weak areas was also conducted in roadways, important equipment areas and footing areas. In areas where excavation was required, heavy equipment was used, but blasting was not permitted due to possible damage to structures supporting coral rock. Thus extensive geologic excavation and the addition of structural fill and construction components have changed much of the native conditions once found on the H-POWER site and increased the site's suitability for construction.

### **Construction Laydown Area**

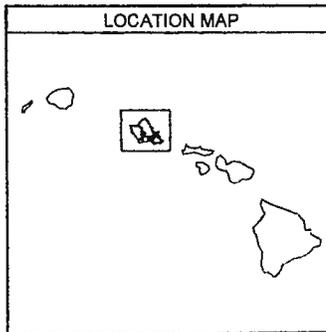
As noted above, soil throughout the area, and underlying each of the laydown parcels, is classified as Coral Outcrop by the USDA Soil Conservation Service (USDA SCS 1965). Field reconnaissance of the construction laydown parcels indicates that clearing and grubbing activities of unknown date have occurred but that the three parcels are currently undeveloped and dominated by brushland with interspersed stands of low lying herbaceous plants (Toma 2004). Where soils are exposed, in the tracks left by recreational vehicles and in cleared areas, they are comprised of a very shallow (0-6" bgs) silt with sand surface soil layer over coral outcrop bedrock. Field observations of surface soil indicated a chroma range from 3 to 4, and very little organic matter present in the soils. No mottles or gleying were observed in the soils (Toma 2004).



**LEGEND**

- Emerged Reefs <sup>1</sup>
- Fringing Reefs <sup>1</sup>

<sup>1</sup> From "Geology of the Hawaiian Islands", Stems, 1969



NOTES & SOURCES  
 Map Coordinates:  
 UTM NAD83, Zone 4N, Units meters

Map Source: Honolulu Resource Recovery Venture,  
 Campbell Industrial Park Site  
 Honolulu, HI  
 January, 1986  
 CE Maguire, Inc.



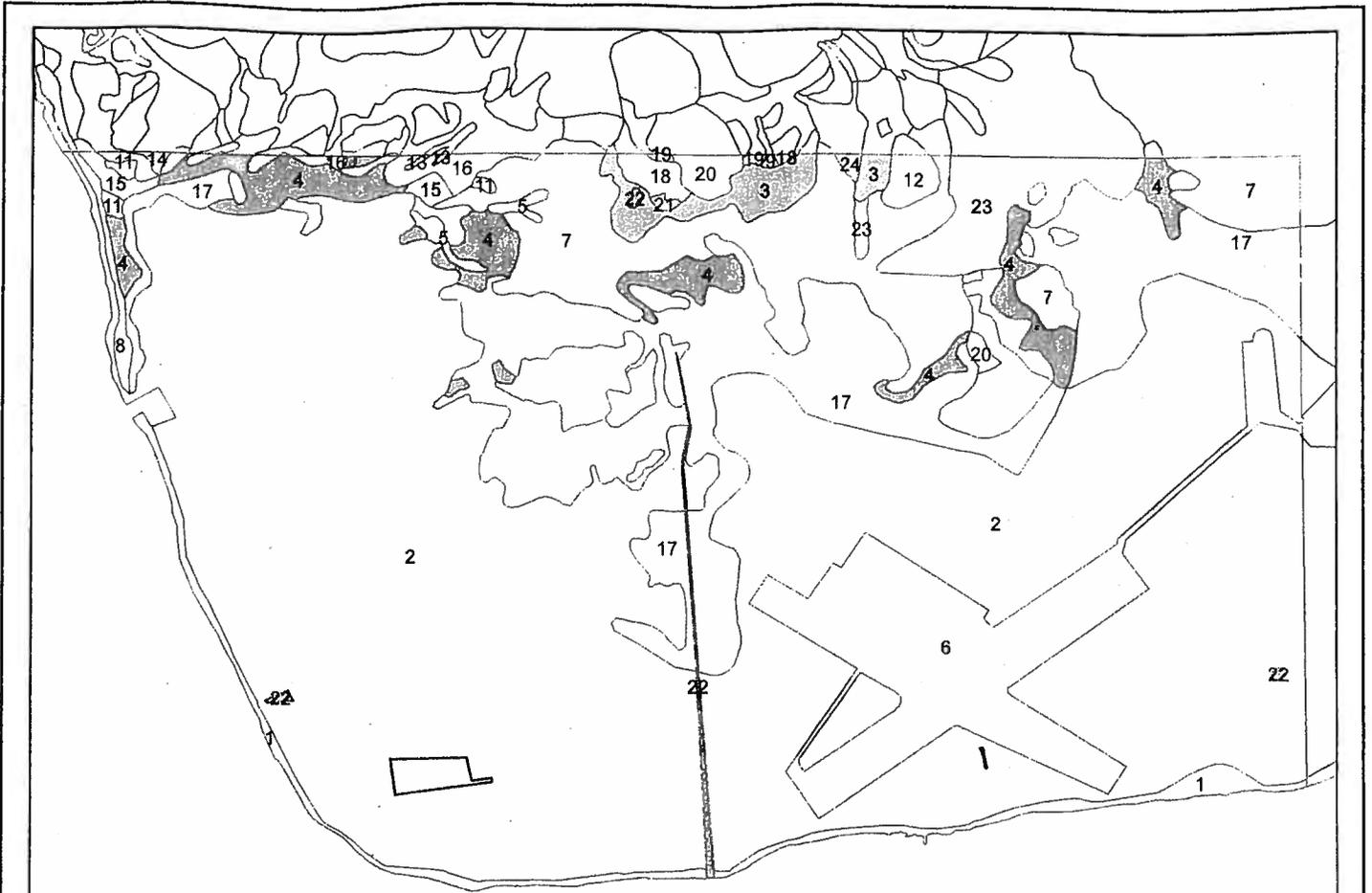
Site Locus Map  
 TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
 91-174 Hanua St.  
 Kapolei, HI 96862



**Emerged and Fringing Reefs of Oahu**

FIGURE  
**2.3-1**



Legend	
Name	
1 Beaches	16 Luualaei stony clay, 2 to 6 percent slopes
2 Coral outcrop	17 Mamala stony silty clay loam, 0 to 12 percent slopes
3 Ewa silty clay loam, 3 to 6 percent slopes	18 Molokai silty clay loam, 15 to 25 percent slopes
4 Ewa silty clay loam, moderately shallow, 0 to 2 percent slopes	19 Molokai silty clay loam, 7 to 15 percent slopes
5 Ewa silty clay loam, moderately shallow, 2 to 6 percent slopes	20 Quarry
6 Fill land, mixed	21 Stony steep land
7 Honouliuli clay, 0 to 2 percent slopes	22 Waialua silty clay, 0 to 3 percent slopes
8 Jaucas sand, 0 to 15 percent slopes	23 Waialua stony silty clay, 3 to 8 percent slopes
9 Kawaihapa clay loam, 0 to 2 percent slopes	24 Water > 40 acres
10 Keauu clay, 0 to 2 percent slopes	
11 Keauu stony clay, 2 to 6 percent slopes	H Power
12 Lahaina silty clay, 7 to 15 percent slopes, severely eroded	Temporary Construction
13 Luualaei clay, 0 to 2 percent slopes	
14 Luualaei extremely stony clay, 3 to 35 percent slopes	
15 Luualaei stony clay, 0 to 2 percent slopes	



Site Locus Map  
TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
91-174 Hanua St.  
Kapolei, HI 96862

NOTES & SOURCES  
Map Coordinates:  
UTM NAD83, Zone 4N, Units meters  
Soils: Soil Conservation Service, 1996  
Downloaded from Hawaii DPP



Generalized Soils

FIGURE  
2.3-2

H:\H-POWER\MXD\_Current\Environmental\Soils.mxd  
H:\H-POWER\Export\Environmental\Soils.pdf  
March 4, 2005 DWN: RLO CHKD: AP

**FINAL ENVIRONMENTAL ASSESSMENT  
SOLID WASTE TO ENERGY  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT**

**2.4 Geologic Hazards**

This Section identifies and analyzes the potential geologic hazards within O'ahu and more specifically, the JCIP. There are four potential geologic hazards in this region that are evaluated below:

- Subsidence, Settlement and Karst
- Seismic Ground Shaking (earthquake)
- Volcanic Activity
- Tsunami

Subsidence and Settlement

As noted in Section 2.3, Existing Conditions- Geology and Soils, the principal geologic hazard in the region of both the H-POWER site and the construction laydown areas consists of the "shallow karst" topography of this region. It is marked by small sink holes generally 0.5 to 3.0 feet in diameter and from approximately 3 to 10 feet deep, which have been dissolved out of the limestone by fresh rain water. Though previously cleared and grubbed, this shallow karst topography requires special construction measures to ensure the stability of foundations and to increase the load bearing capacity of the local soils. Engineering will determine the extent of excavation, quantify structural fill requirements, and update recommendations for safe and secure foundation construction techniques.

They will also provide a geotechnical analysis for the proposed laydown area to ensure that the design and preparation of those parcels, for temporary equipment storage and construction parking, is appropriate.

Seismic Ground Shaking

The entire island of O'ahu is considered to be in Earthquake Hazard Zone 2A of the Uniform Building Code (UBC) seismic provisions (USGS 2001). This corresponds to a value of 0.075g to 0.15g, where g is gravitational force. The UBC seismic provisions contain six seismic zones, ranging from 0 (no chance of severe earthquake occurrence in a 50-year interval) to 4 (10 percent chance of severe earthquake occurrence in a 50-year interval).

The Project will be constructed in accordance with the construction standards and seismic provisions of the UBC for Hazard Zone 2A.

Volcanic Activity

The island of O'ahu was formed by two volcanoes, the Waianae Range on the west side of the island and the Koolau Range on the east. Both of these volcanoes are now extinct. The Waianae Range is approximately 2.95 to 3.8 million years old and the Koolau Range is approximately 1.8 to 2.7 million years old (Keinle and Wood 1990). However, there has been volcanic activity on the island of O'ahu since these two volcanoes have gone extinct. The Honolulu Volcanic Series consisted of over 30 separate eruptions ranging from approximately 850,000 to 32,000 years ago (Abbott et. al. 1983). Although there has not been any volcanic activity on the island of O'ahu for over 30,000 years, there is a very slight possibility of future volcanic activity on O'ahu.

**FINAL ENVIRONMENTAL ASSESSMENT  
SOLID WASTE TO ENERGY  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT**

Tsunami

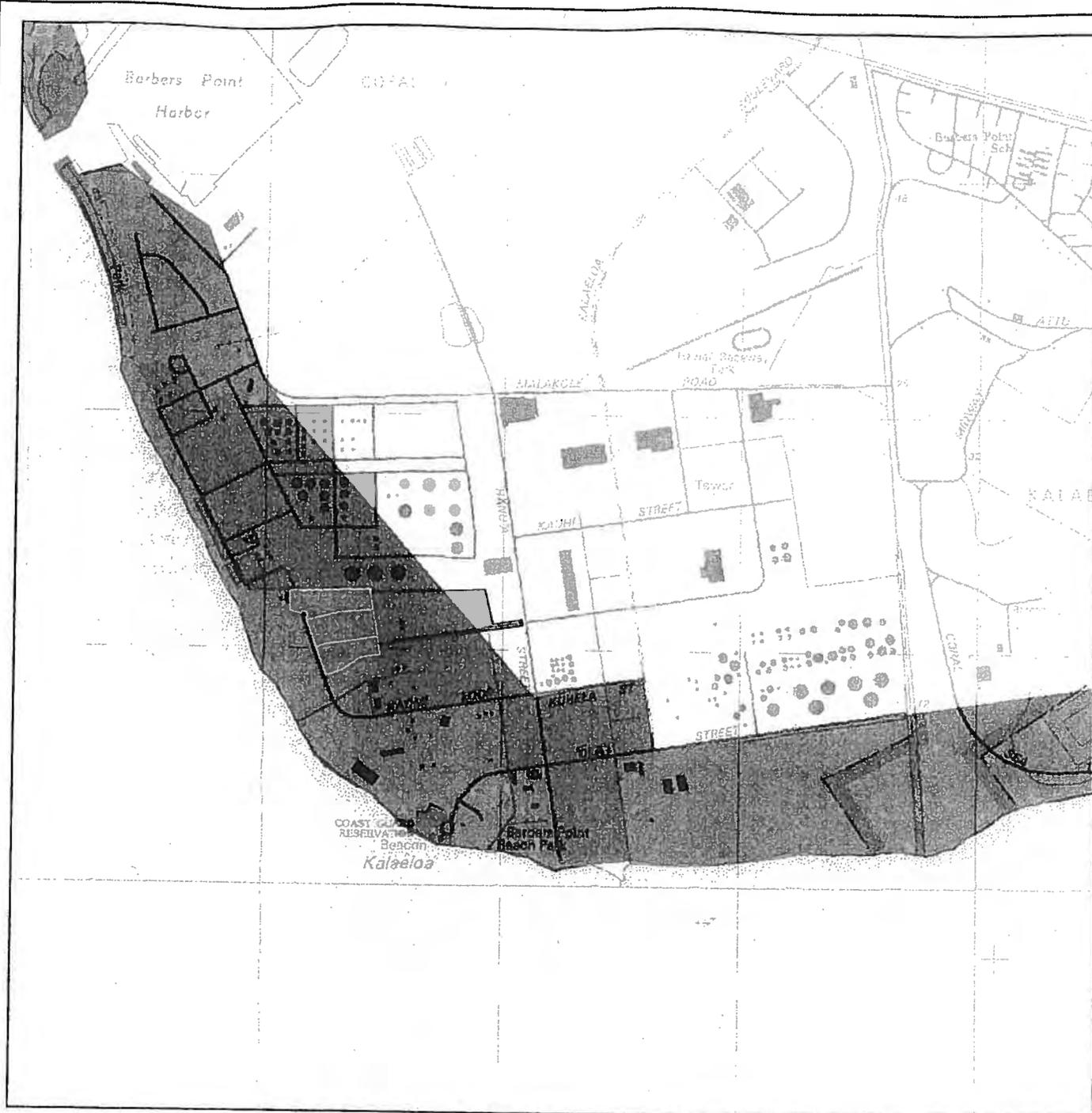
As quoted from the O'ahu Civil Defense Agency web site, and unfortunately experienced most recently in the Indian Ocean Tsunami of 2004:

"Tsunamis, or seismic sea waves, potentially the most catastrophic of all ocean waves, are generated by tectonic displacement - for example, volcanism, landslides or earthquakes - of the sea floor, which in turn cause a sudden displacement of the water above and the formation of a small group of water waves having wavelength equal to the water depth (up to several thousand meters) at the point of origin. These waves can travel rapidly outward for thousands of kilometers while retaining substantial energy. Their speed-characteristic of gravity waves in shallow water and thus equal to the square root of  $gD$ , where  $g$  is the gravitational constant and  $D$  is the depth - is generally about 500 km/h (300mph), and their periods range from 5 to 60 minutes. In the open ocean their amplitude is usually less than 1 m (3.3 ft); thus tsunamis often go unnoticed by ships at sea. In very shallow water, however, they undergo the same type of increase in amplitude as swell approaching a beach. The resultant waves can be devastating to low-lying coastal areas; the 37-m (120-ft) waves from the 1883 Krakatoa eruption, for example, killed 36,000 people.

The characteristics of tsunamis as they approach shore are greatly affected by wave refraction over the local bathymetry. Tsunami-producing earthquakes usually exceed 6.5 on the Richter scale, and most tsunamis occur in the Pacific Ocean because of the seismic activity around its perimeter. A tsunami warning system for the Pacific Ocean has been established; it consists of strategically placed seismic stations and a communications network." (O'ahu Civil Defense 2004) Figure 2.41, Tsunami Evacuation Zones, depicts the O'ahu evacuation zone identified for this area of O'ahu in the event of Tsunami. The evacuation zones, developed by the State of Hawaii Civil Defense include the majority of the H-POWER site and all of the construction laydown area. O'ahu Civil Defense, Tsunami Evacuation Map 17 for Kahe Point to Ewa Beach, also notes that steel and or concrete buildings of six or more stories in height should provide adequate protection if people move to the third floor or above. The H-POWER facility, though industrial, is of comparable height and scale and so may offer protection should no warning be available. However, in the event of advance warning issued by the Pacific Tsunami Warning Center (PTWC), Emergency Broadcast System or Civil Defense Sirens, H-POWER construction and or operational staff will immediately begin shut down operations at the plant and evacuate to the designated Public Shelter Refuge Area, the Makakilo Elementary School or other identified location at a safe elevation. Facility Emergency Response Plans currently address this issue and all temporary construction personnel will be instructed on Emergency Response Procedures prior to initiating construction activities.

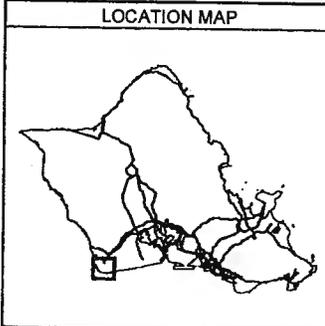
## **2.5 Climate and Air Quality**

This section discusses the existing climate and air quality of O'ahu and the potential impacts of the proposed Project. Mitigation measures, such as emission control technologies are also evaluated.



**LEGEND**

- Temporary Construction
- H Power
- Tsunami Evacuation Zones



Site Locus Map  
TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
91-174 Hanua St.  
Kapolei, HI 96862

**NOTES & SOURCES**  
Map Coordinates:  
UTM NAD83, Zone 4N, Units meters  
  
Topographic Map Source: USGS, 2000  
Tsunami: Pacific Disaster Center (PDC), 1998  
(Downloaded from Hawaii Statewide GIS Program  
<http://www.state.hi.us/dbed/gis/index.html>)



**Tsunami Evacuation Zones**

**FIGURE**  
241

**FINAL ENVIRONMENTAL ASSESSMENT  
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AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT**

**Baseline Climate and Air Quality**

According to the National Weather Service (NWS) Forecast Office in Honolulu, the climate of Hawaii is characterized by mild temperatures throughout the year, moderate humidity, persistence of northeasterly trade winds, infrequent severe storms but significant differences in rainfall amounts within short distances. When the northeasterly trade winds are weak, onshore, thermally driven sea breeze flows can develop on the normally leeward shores of O'ahu. The resulting southerly winds are referred to as "Kona winds".

The presence of mountains is important as they can obstruct and deflect the prevailing winds directions, and produce local drainage flows at night and upslope flows during the day. The importance of these local flows diminishes rapidly with distance from significant terrain objects. Due to the distance from the mountains, the wind conditions in the vicinity of the JCIP are dominated by the northeast trade winds and to a lesser extent, the southwest Kona winds.

**2.5-2 Wind Direction and Speed**

From January through December 1992 a 10-meter meteorological tower within JCIP measured and recorded wind speed and direction. Figure 2.5-1 illustrates the windrose generated from the data collected in 1992. Figure 2.5-1 illustrates that the prevailing wind is dominated by the northeasterly trade winds. In addition, these data also show that the average wind speed is approximately 6.5 knots.

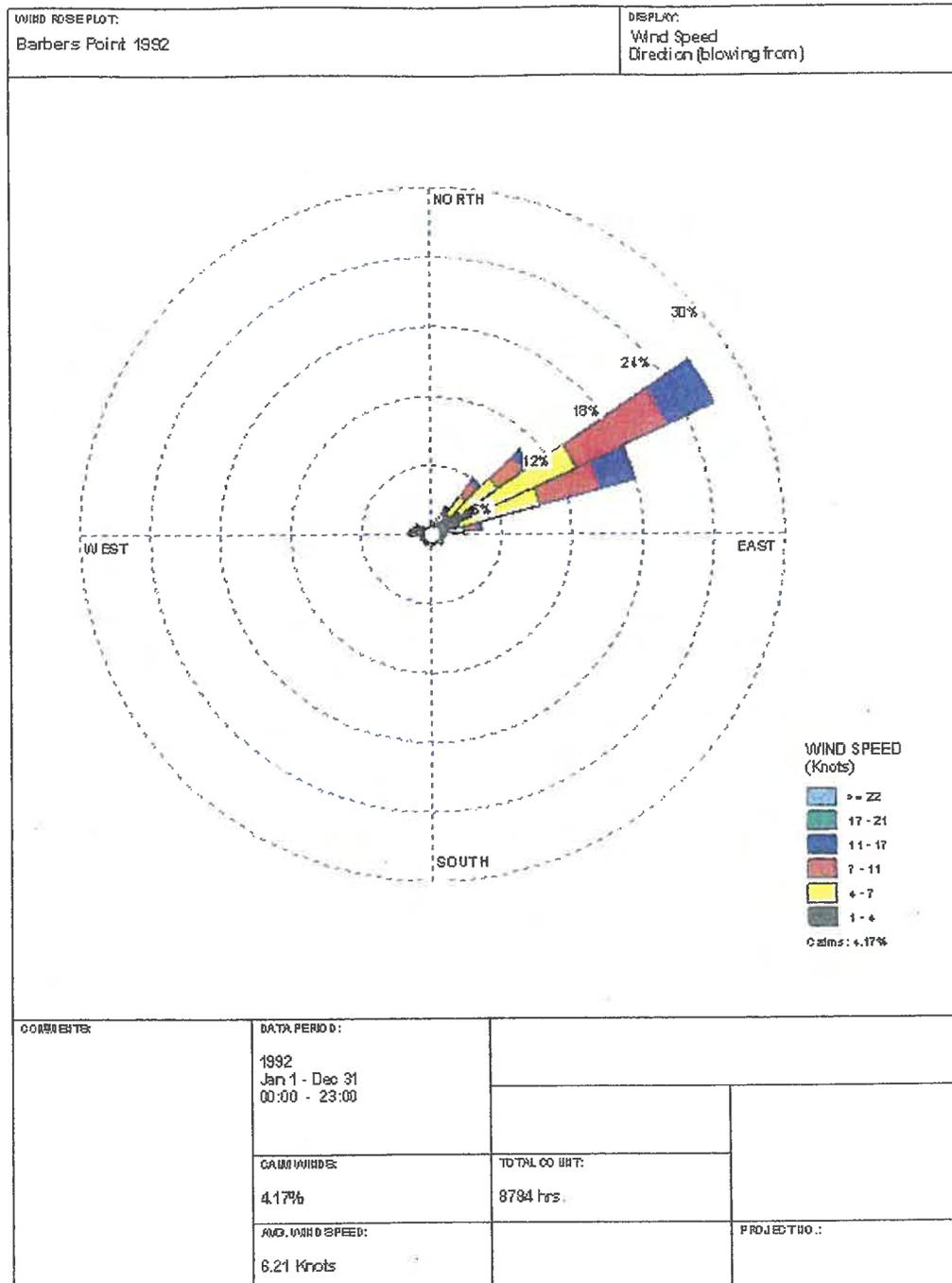
The NWS operates a meteorological station at the Honolulu International Airport (HNL), approximately 12 miles east of JCIP. Amongst other measurements, the Honolulu NWS station records wind direction, wind speed, daily precipitation amounts and temperature. The windrose, generated with data collected from January through December 1992, is shown in Figure 2.5-1. Figure 2.5-1 shows that the prevailing winds at HNL are predominantly the northeasterly trade winds. The mean wind speed recorded at HNL in 1992 was 8.2 knots. Figures 2.5-1 and 2.5-2 show that the meteorological conditions at HNL are very similar to those experienced at JCIP.

**2.6 Surface Water**

This section discusses the existing surface water environment. Baseline conditions, including designated resource areas of concern, are identified and the potential impacts of the proposed Project are presented.

**Baseline Surface Water Conditions**

Surface waters for the Island of O'ahu are classified by water quality standards established under Hawaii Administrative Rules, Title 11, Chapter 54 (HAR 11-54). The regulations categorize all State waters as either marine or inland. It is also important to note that "State Waters", as defined by section 342D-1, HRS, exclude "...drainage ditches, ponds, and reservoirs required as part of a water pollution control system..." Figure 2.6-1 provides a broad overview map of the Water Quality Standards for the island. As can be seen from Figure 2.6-1, the project site is located within the defined hydrographic area IV and has an Inland (Water) Classification of

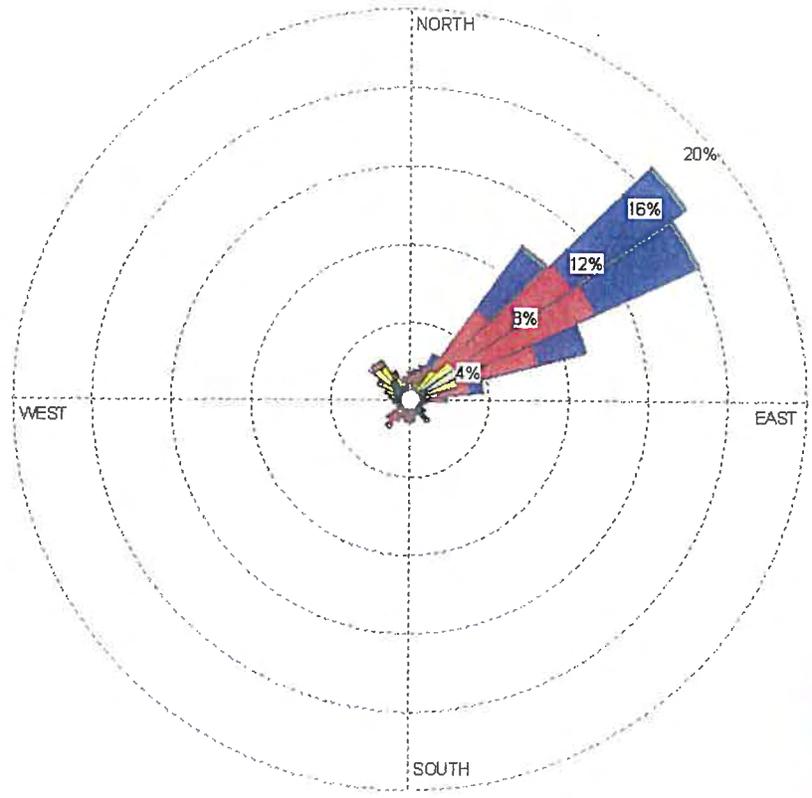


Windrose For CIP/Barber's Point 10-Meter 1992 Data

FIGURE  
2.5-1

WIND ROSE PLOT:  
**Station #22521 - HONOLULU INTL ARPT, HI**

DISPLAY:  
**Wind Speed  
 Direction (blowing from)**



WIND SPEED  
(Knots)

- >= 22
- 17 - 21
- 11 - 17
- 7 - 11
- 4 - 7
- 1 - 4

Calm: 3.02%

COMMENTS:	DATA PERIOD:		
	1992 Jan 1 - Dec 31 00:00 - 23:00		
	CALM WINDS:	TOTAL COUNT:	
	3.02%	8784 hrs.	
	AVG. WIND SPEED:		PROJECT NO.:
	8.23 Knots		

WRPLOT View - Lakes Environmental Software



Windrose For HNL NWS Station 1992 10-Meter Data

FIGURE  
**2.5-2**

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Class 2. Class 1 waters are more heavily restricted, and it is the objective that Class 1 waters remain in their natural state as nearly as possible. The objective of Class 2 waters, is defined as follows: "The objective of Class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these water" (HAR 1154-3).

Figure 2.6-1 also depicts the Marine Classifications and shows that the site is located most proximate to Class A marine waters. Class AA marine waters are more heavily restricted, and it is the objective that these waters remain in their natural pristine state as nearly as possible. The objective of Class A waters, is defined as follows: "It is the objective of Class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters" (HAR 11-54-3).

As noted earlier, the Project is located on what is commonly referred to as the Ewa Plain, an emerged coral-algae reef formed during the Pleistocene period when the ocean was at a higher level. The Ewa Plain today is one of the driest areas on O'ahu, so dry that it has commonly been characterized as "barren" and "desolate" and even referred to as a desert (Pacific Consultant Services Inc {PCSI}, Tuggle 1997:11).

Site specific water resources, for both the H-POWER site and the construction laydown area are addressed below.

### **H-POWER Surface Waters**

As shown previously on the site locus map, Figure 1.7-1, there are no perennial or intermittent streams, tidal channels or springs located on the H-POWER site. The H-POWER site is roughly 24.6 acres in size, or 1,071,576 square feet. Of that, approximately one-third, 357,192 square feet is not paved. The remaining area, 714,384 square feet consists of impervious surface area.

Other than the Pacific Ocean, the nearest surface waters to H-POWER, are industrial holding ponds and industrial park drainage canals. These consist of (1) A drainage canal abutting the southeast corner of H-POWER that extends south to the Pacific Ocean; (2) drainage canals that exist proximate to the Kaomi Loop bend, that drain to the Pacific Ocean; and (3) nearby holding ponds situated on the industrial Chevron property.

The facility is permitted under the State of Hawaii, Department of Health (DOH), Notice of General Permit Coverage (NGPC) NPDES permit program which requires Storm Water Pollution Control planning and storm water sampling. In addition to compliance with NGPC-NPDES requirements, the H-POWER waste handling operations take place indoors to minimize exposure to the elements and for good housekeeping practice. Two grounds keeping personnel work Monday through Friday to clean up any MSW that escaped from the MSW Feed and Storage Area and to provide general clean-up around the facility. Facility personnel

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are also trained in Spill Prevention Countermeasure and Control annually which increases their awareness on the necessity to be careful in handling liquid materials around the facility.

**Construction Laydown Surface Waters**

As shown previously on the site locus map, there are no perennial or intermittent streams, tidal channels or springs located on the parcels proposed for temporary construction laydown. There are no surface water resources located on or proximate to the proposed construction laydown parcels. Field reconnaissance of these sites, conducted following rain events, indicated that surface water is limited to puddling within existing tracks and trails onsite (Toma 2004). Waters are also reported to sometimes occur within sinkholes on protected areas of the site, but these areas may also be affected by tidally influenced groundwaters. (Kane 2004) There are currently no stormwater systems, swales or designed controls in place, though natural drainage patterns do exist. Field reconnaissance indicates that the site is relatively flat, but that in addition to the existing depressions caused by small sinkholes, the tracks and trails from human activity influence stormwater patterns due to the slightly lower grade of these disturbed portions of the site. A prominent track abutting the eastern property line likely dominates runoff patterns along the eastern boundary of the laydown parcels. The eastern boundary is defined by a berm that supports an aboveground pipeline from the adjacent AES facility, which further accentuates the drainage swale aspect of this linear track. Interviews conducted by the cultural resource investigators, PCSI, with City representatives (see Appendix C) indicated that the area along Kaomi Loop was used for many years by dune buggy enthusiasts. The tracks and trails and maze of small roads or paths still visible on aerial photography are likely remnants of that and other unauthorized activities such as dumping of rubbish. The area is currently fenced in an effort to eliminate unauthorized access.

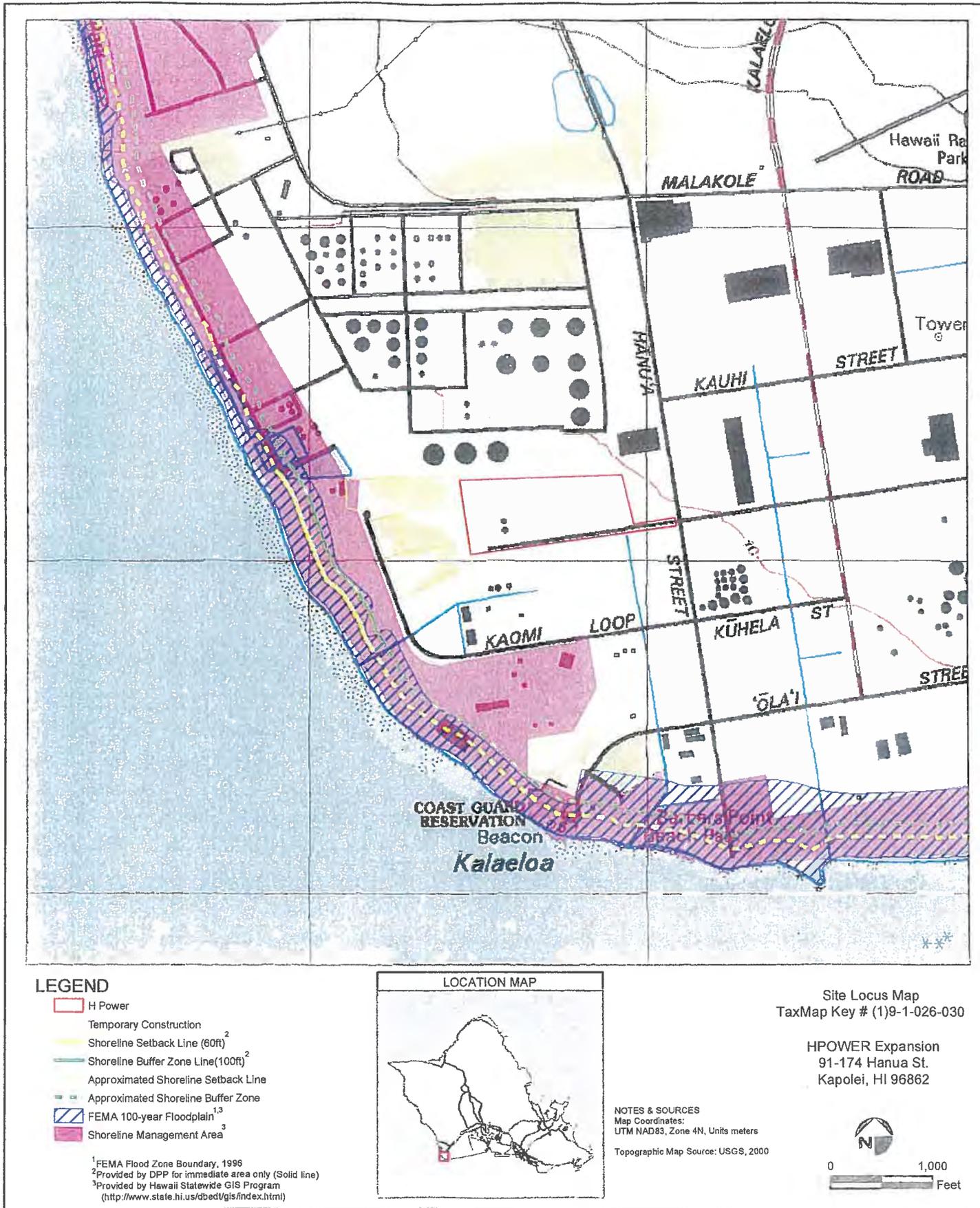
As noted previously, other than the Pacific Ocean, the nearest surface waters are industrial holding ponds and industrial park drainage canals. These consist of (1) A drainage canal abutting the southeast corner of H-POWER that extends south to the Pacific Ocean; (2) drainage canals that exist proximate to the Kaomi Loop bend, that drain to the Pacific Ocean; and (3) nearby holding ponds situated on the industrial Chevron property. Each of these surface waters can be seen on the previously provided site locus.

**Designated Surface Water Resource Areas**

A review of known or designated surface water features and coastal constraints was conducted, to determine proximity to potential resources of concern. These included coastal constraints as well as designated floodplains. Figure 2.6-1, Surface Water Constraints, depicts these designated areas with respect to the H-POWER site and the construction laydown parcels.

**Coastal Constraint Areas**

Surface water constraints on O'ahu are shown on Figure 2.6-1 and are regulated by a variety of state and local agencies. The following is a brief summary of these designated coastal resource areas proximate to H-POWER and the proposed construction laydown area.



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Coastal Zone

The entire Island of O'ahu is classified as within the Coastal Zone, with the exception of regulatory exemptions for federally owned lands. Though not mapped, both the H-POWER site and the construction laydown parcels are within the Coastal Zone. The Hawaii Coastal Zone Management (CZM) Program (under the Department of Business, Economic Development & Tourism's Office of Planning) conducts CZM federal consistency review for certain types of projects.

Previously, with respect to an Expansion of H-POWER, a November 5, 2004 letter was sent to the Hawaii CZMP requesting a determination as to whether a CZM federal consistency review would be required for the H-POWER Expansion. That letter included a copy of the Preparation Notice (Appendix A) describing the Expansion along with information about the parcels under consideration for construction laydown use. The Hawaii CZMP determined on November 9, 2004 that a CZM federal consistency review is not required for this project, but noted that the project may be subject to SMA requirements, administered by the City and County of Honolulu, Department of Planning and Permitting (DPP), see Appendix A.

Special Management Area (SMA)

The H-POWER site is not within the SMA, but a portion of the northernmost parcel (parcel 035) proposed for temporary construction laydown is within the SMA. The City and County of Honolulu, DPP regulates activities within the SMA and the thresholds and triggers requiring DPP review are discussed in greater detail in this EA.

A November 5, 2004 letter was sent to the City and County of Honolulu, DPP. That letter indicated that in order to avoid potential impacts to the SMA the construction laydown and parking areas would be sited outside of the designated SMA. That letter also requested advice as to necessary setbacks or construction delineation required by DPP that may be needed prior to use of the remainder of parcel 035.

Shoreline Setback Line

As mapped on Figure 2.6-1, Surface Water Constraints, neither the H-POWER site nor any of the parcels to be used temporarily for construction laydown, are located within the Designated Shoreline Setback line, or the Shoreline Buffer Zone Line. As shown on Figure 2.6-1, the Designated Shoreline Setback and Buffer Zone Lines are each situated west of Kaomi Loop. The City and County of Honolulu, DPP regulates activities within the Shoreline Setback Line and the thresholds and triggers requiring DPP review are discussed in greater detail in Chapter 7.

A November 5, 2004 letter was sent to the City and County of Honolulu, DPP. That letter indicated that on the basis of available mapping obtained from DPP, the Expansion project and the temporary construction area impacts would be outside of the Shoreline Setback Line and the Buffer Area and requested a formal determination from DPP confirming that assessment.

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Tsunami Evacuation Zone

As described previously, Tsunamis pose a risk to many coastal areas on O'ahu. Figure 2.6.1, Tsunami Evacuation Zones, shown previously depicts the O'ahu evacuation zone identified for this area of O'ahu. The evacuation zones, developed by the State of Hawaii Civil Defense include the majority of the H-POWER site and all of the construction laydown area. In the event of advance warning issued by the PTWC, Emergency Broadcast System or Civil Defense Sirens, H-POWER construction and operational staff will immediately shut down operations and evacuate to the designated Public Shelter Refuge Area, the Makakilo Elementary School or other identified location at a safe elevation. All temporary construction personnel will be instructed on Emergency Response Procedures prior to initiating construction activities.

**Floodplains**

The H-POWER site and the construction laydown parcels are located outside of designated Special Flood Areas. Figure 2.6-1, Surface Water Constraints, depicts the mapped Flood Area (DPP, 2004). A review of the most recent Federal Emergency Management Area (FEMA) Flood Insurance Rate Map (FIRM), published in September 30, 2004, was also conducted (FEMA 2004). The hard-copy FIRM maps were not available in electronic format, however, no change from the DPP electronic map data was observed in the project area. A photocopy of the 2004 FIRM is provided in Appendix B. The project parcels, both permanent and temporary, are clearly outside of the designated Flood Hazard Areas. As shown on Figure 2.6-1 and confirmed on the FIRM map, the designated Flood Hazard Area is situated west of Kaomi Loop.

**2.7 Groundwater**

This section discusses the existing groundwater environment. Baseline conditions, including resource areas of concern and existing withdrawal limits, are identified and the potential impacts of the proposed Expansion project are presented.

**Baseline Conditions**

Groundwater is a key resource for the island of O'ahu. Of the total freshwater used on O'ahu, 326 Mgal/d is from ground water and 71 Mgal/d is from surface water. Most of the groundwater on the island of O'ahu is derived from extensive volcanic aquifers of thin-bedded basalts in central and southern O'ahu. These aquifers are unconfined and though often at great depth (600-1,000 ft) are essentially "surficial" aquifers and therefore vulnerable to contamination. (USGS 1998). As a result, water resource protection and management is important on O'ahu.

The Hawaii Water Plan and H-POWER's consistency with the Plan, are discussed in greater detail in Chapter 7.

Consistent with the goals of protecting water resources, groundwater governance in Hawaii is split into two distinct aspects: (1) Groundwater withdrawals and (2) injection wells. Groundwater withdrawals, stream diversions and water use are regulated under the State Water Code and its





MAP SCALE = 1000  
500 1000 2000  
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City and County  
of Honolulu  
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BARBER'S POINT  
NAVAL AIR STATION

NAVAL  
AIR STATION  
BOUNDARY

ROUTE  
192

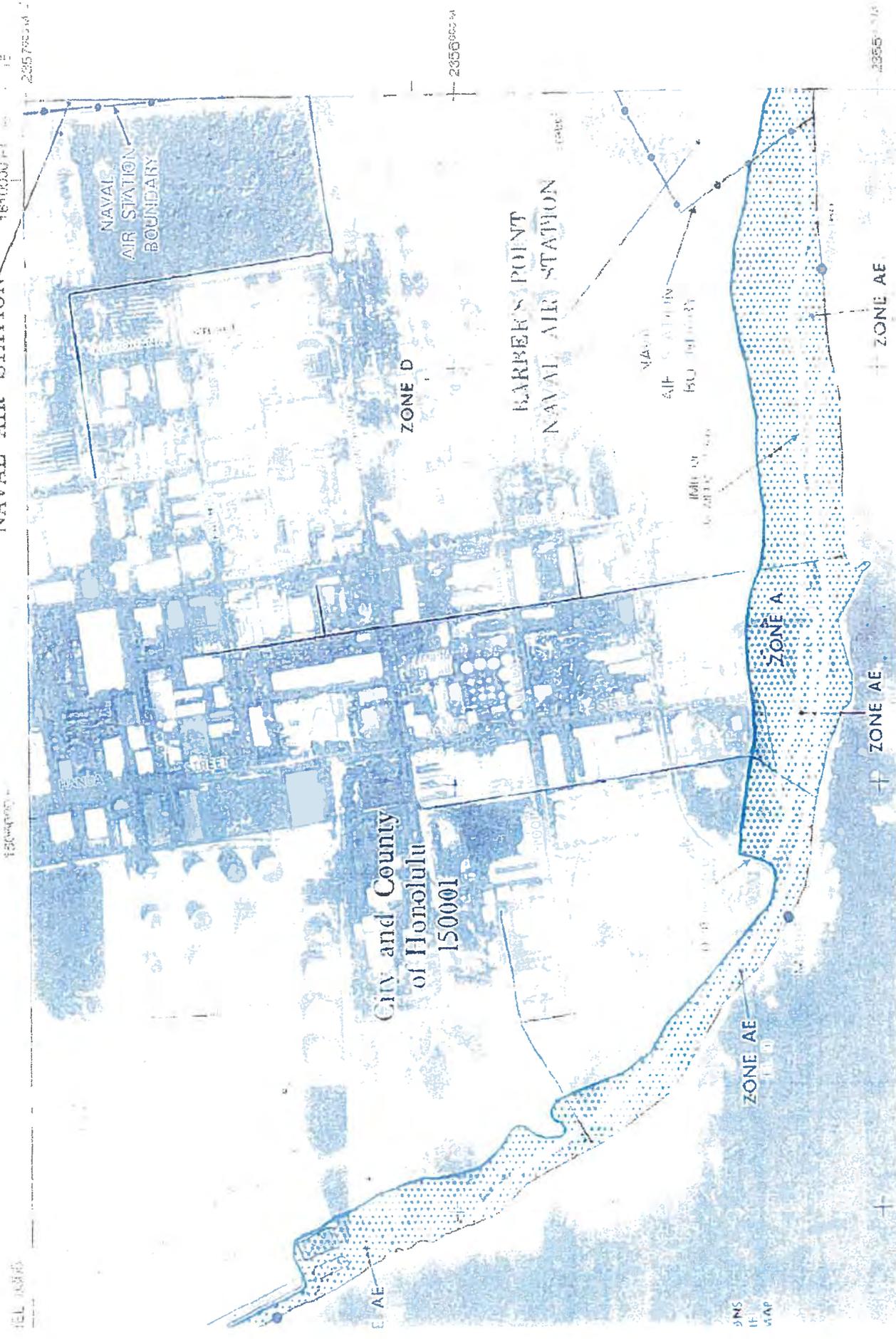
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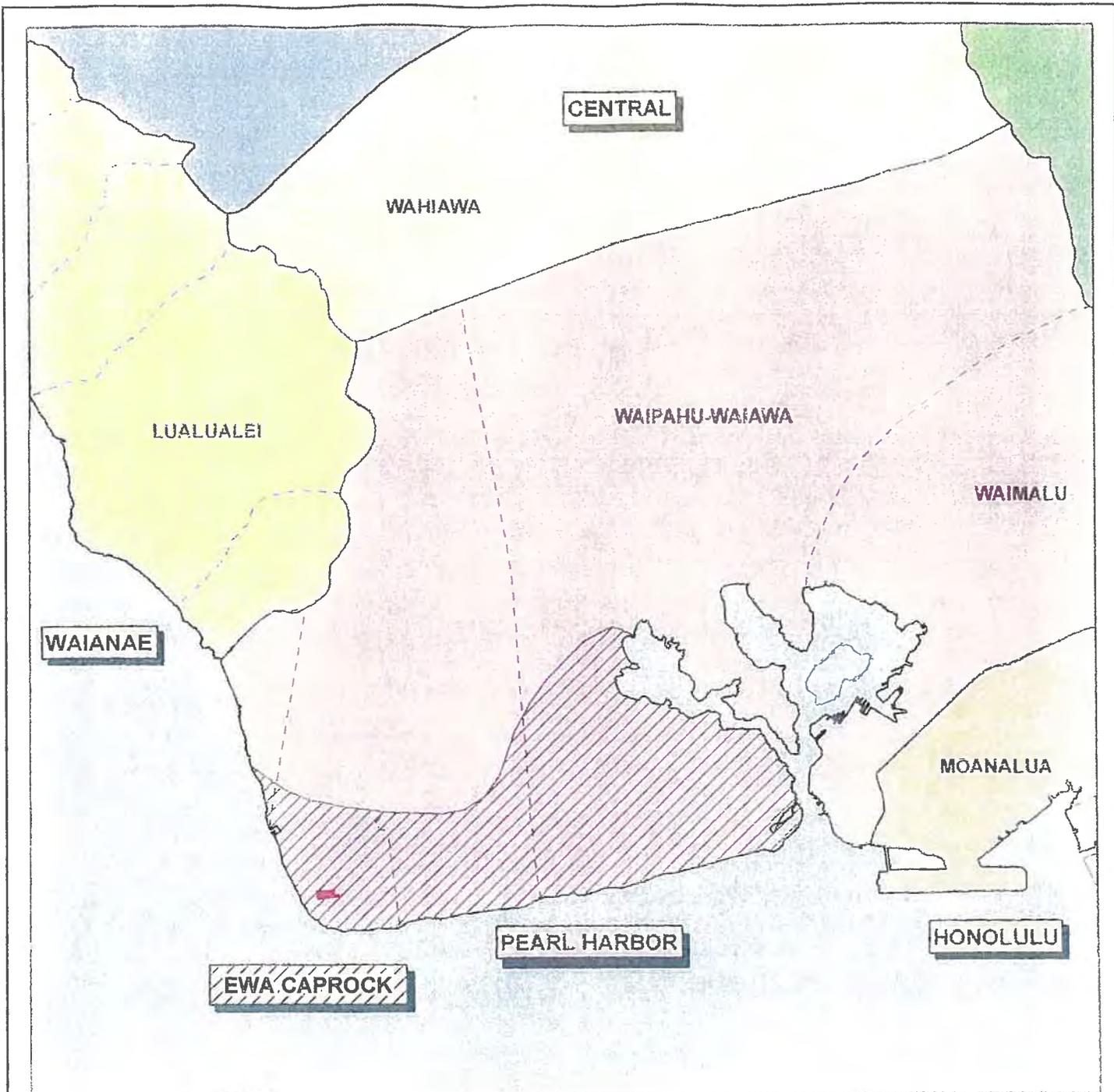
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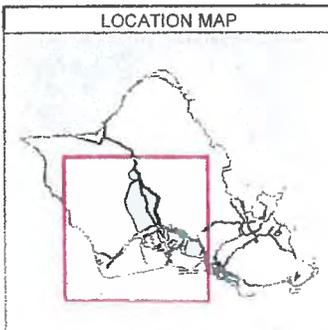




**LEGEND**

 H-Power

**LOCATION MAP**



Site Locus Map  
TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
91-174 Hanua St.  
Kapolei, HI 96862

**NOTES & SOURCES**

Map Coordinates:  
UTM NAD83, Zone 4N, Units meters

Aquifer Source: Commission on Water Resource  
Management, Hawaii 2000

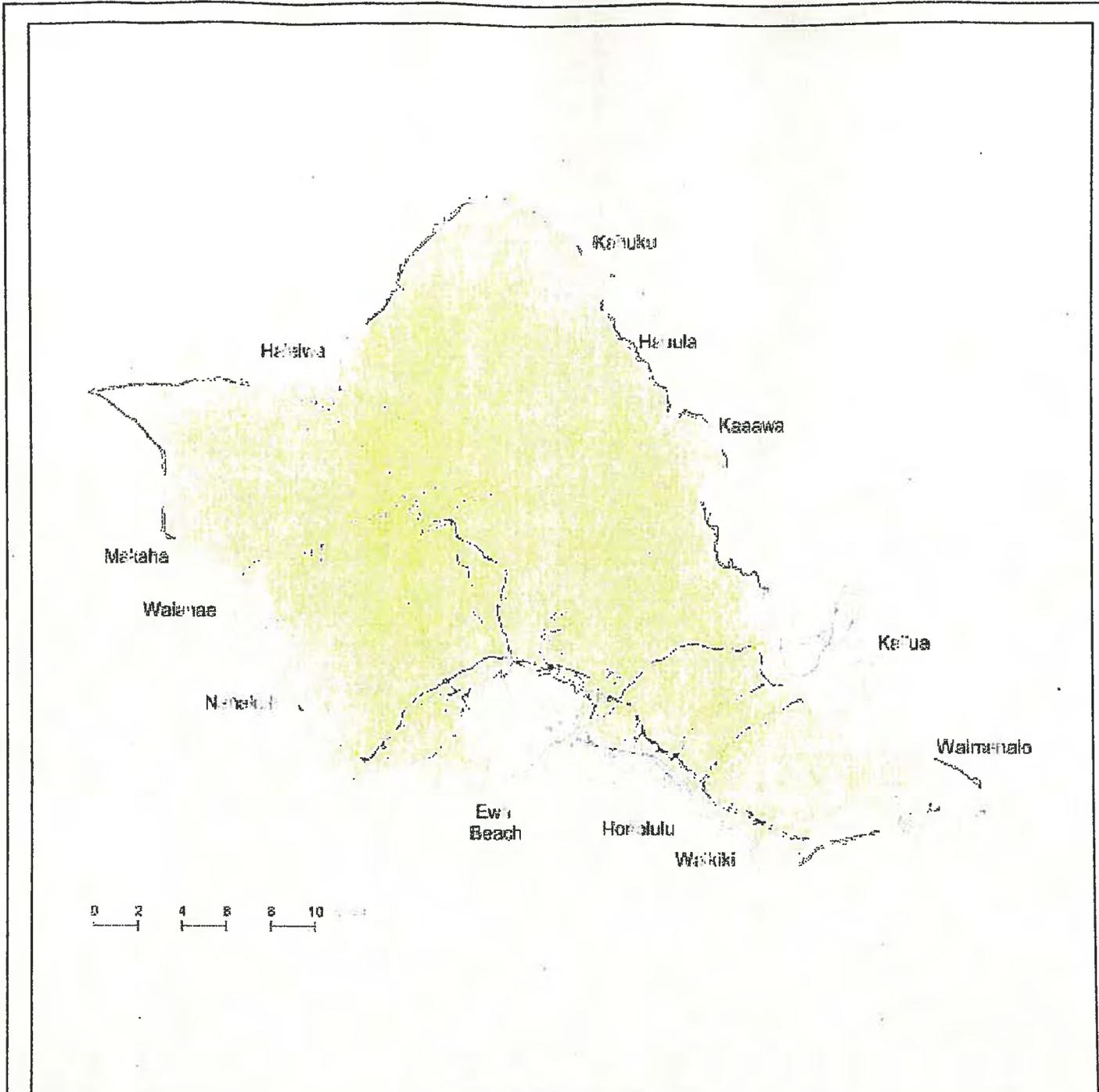


0 10,000  
Feet



**Aquifers**

**FIGURE**  
**2.7-1**



**LEGEND**

- BELOW (maaka) UIC LINE**
- Underlying aquifer not considered drinking water source
  - Wider variety of wells allowed
  - Injection wells need UIC Permit or Permit Exemption
  - Permit limitations are imposed
- ABOVE (mauka) UIC LINE**
- Underlying aquifer considered a drinking water source
  - Limited types of injection wells allowed
  - Injection wells need UIC Permit or Permit Exemption
  - Permit limitations are imposed and requirements are more stringent
- Major Roads



Site Locus Map  
TaxMap Key # (1)9-1-026-030

HPOWER Expansion  
91-174 Hanua St.  
Kapolei, HI 96862

**NOTES & SOURCES**  
Map Coordinates:  
UTM NAD83, Zone 4N, Units meters  
Map Source: Hawaii Department of Health  
(<http://www.hawaii.gov/health/environmental/water/dwb/uloi/uloiuicmaps.html>)



**Underground Injection Control Areas**

**FIGURE**  
**2.1-2**

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March 4, 2005 DWN: RLO CHKD:

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implementing rules. The Commission on Water Resource Management (CWRM), Department of Land and Natural Resources (DLNR) manages the designation and regulation of Water Management Areas, water withdrawals and well construction activities. Groundwater injection wells, typically used for disposal of cooling waters, are guided by a different set of Hawaii Administrative Rules, administered by DOH.

The H-POWER facility and the temporary construction laydown area are each located within the Ewa (Limestone) Caprock Aquifer. The Ewa limestone aquifer is a brackish to saline groundwater body that exists as a thin basal lens in the permeable coralline reef deposits that comprise the Ewa Plain. Figure 2.7-1 Aquifers, depicts aquifers, the EWA Caprock zone, and the location of H-POWER.

The permitting of underground injection wells on O'ahu is also affected by the location of the wells. Figure 2.7-2, Island of O'ahu Underground Injection Control Areas, shows that in coastal regions where waters can be saline at depth, the underlying aquifers may not be considered a drinking water source and though permit limitations are imposed, wells may be permitted.

The H-POWER facility is currently permitted for, and operating, two water withdrawal wells to supply primarily industrial (non-potable) water for facility operations. The industrial process water, permitted at an average annual withdrawal rate of 2.26 mgd and maximum daily withdrawal rate of 2.26 mgd, is used primarily for industrial cooling. The water withdrawal wells are permitted through DLNR and the injection wells that are operated in accordance with monitoring requirements stipulated by the DOH. The underground injection wells are permitted to discharge primarily non-contact cooling water of an average concentration of 1.7 times caprock water (source water) with residual amounts of dispersants, biodispersants, corrosion inhibitors, biocides and pH control agents. Intermittent discharges of reject water from the on-site reverse osmosis water treatment system, with trace amounts of dechlorination agents and antiscalents may also be injected. The above additives are typical components of water treatment systems. The maximum disposal quantity for the underground injection wells is 1.2 mgd, and monitoring and reporting requirements dictate a daily record of the injectant quantity (gpd) and representative grab samples (three types) of the injectant are collected for analysis in accordance with EPA methods and standards.

## **28 Biological Resources**

This section discusses the existing biologic environment. Baseline conditions, including resource areas of concern and special status species, are identified and the potential impacts of the proposed Expansion are presented. Mitigation measures, such as stormwater controls and use of buffer areas are evaluated.

### **Existing Conditions - Biological Resources**

The project site and the parcels directly east of the facility under consideration for use as construction laydown area are located in what is commonly referred to as the Ewa Plain, characterized as:

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"a semiarid region of intense sunshine, warm tradewinds, and sparse rainfall. At the western end of the plain these conditions are all the more accentuated. Except for a few coastal marshlands and other favored localities, the vegetation is typically xeric and, where undisturbed by modern developments, is dominated by hardy exotics." (Davis 1990a)

Figure 2.8-1 depicts NWI national wetland inventory data for the region surrounding the H-POWER site. As shown on that figure, no onsite resources are identified. A biological resource site reconnaissance survey of the 24.6-acre H-POWER facility and the adjacent laydown area was conducted by an AMEC biologist during November 9 - 11, 2004. A list of plant species observed is presented in Table 2.8-1. Survey methodology included a pedestrian survey of the H-POWER facility perimeter and open lawn areas and transects through the laydown areas. Extremely dense vegetation necessitated a perimeter only survey of the northernmost portion of Parcel 35. Due to limited site access, perimeter only surveys of three fenced enclosures (endangered plant preservation areas) within the laydown area were also conducted in the November 2004 survey.

### **H-POWER Facility**

The majority of the H-POWER site consists of developed infrastructure (e.g., concrete parking lots, asphalt roads, buildings, ancillary facilities, etc.). Undeveloped areas consist of manicured lawns with ornamental trees and shrubs.

#### Flora

The open lawn areas of the H-POWER facility area consists of introduced and ornamental vegetation, including Bermuda grass (*Cynodon dactylon*), monkey pod trees (*Samanea saman*), autograph trees (*Clusia rosea*), *Hibiscus sp.*, and milo trees (*Thespesia populnea*). Other plant species included coconut trees (*Cocos nucifera*), beach naupaka (*Scaevola sericea*), and yellow oleander (*Cascabela thevetia*).

#### Fauna

Animals currently found in the area include feral cats and a variety of other non-native species wildlife such as mongoose, mice, and rats. Bird species observed included: zebra doves (*Geopelia striata*), spotted doves (*Streptopelia chinensis*), sharp-tailed sandpipers (*Calidris acuminata*), mynah birds (*Acridotheres tristis*), feral chickens (*Gallus gallus*), red vented bulbuls (*Pycnonotus cafer*), common waxbills (*Estrilda astrild*), and cattle egrets (*Bubulcus ibis*). These animal species are transient over much of the 24.6 acres of the facility. Additionally, the ornamental trees and bushes may serve as nesting sites for various bird species.

### **Laydown Area**

Aerial photographs of the site from the early 1990's indicated that clearing and grubbing activities of unknown date have occurred in these parcels (Figure 4.5-2). The presence of two plant preservation enclosures (within Parcels 34 and 33) is evident in the early 1990's aerial photography. Also evident was a third enclosure in the northwest portion of Parcel 35. Mr. Shad Kane confirmed the presence and origin of this third enclosure during a telephone interview

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conducted on November 17, 2004 by an AMEC biologist (Kane 2004). Mr. Kane was hired in November 2003 by the City and County of Honolulu to prepare a Habitat Conservation Plan for the enclosures. He stated that the third enclosure located on the northwest boundary of Parcel 35 was created prior to the early 1990's, to protect native plants that were relocated from nearby construction sites.

Field reconnaissance of the construction laydown parcels conducted in November 2004 indicate that current conditions are representative of an open brush habitat interspersed with stands of low lying herbaceous plants. Access trails and tracks through the stands of vegetation are evident on aerial photography from 2000, shown previously in Figure 4.3-2. A cleared area, between the enclosures in Parcels 33 and 34, is comprised of exposed soils and coral limestone outcrop. The terrain appears to be predominantly level with drainage affected by the trails and tracks interspersed throughout, including a prominent track abutting the eastern property line which likely dominates runoff patterns along the eastern boundary of the laydown parcels. The eastern boundary is defined by a berm that supports an aboveground pipeline from the adjacent AES facility, which further accentuates the drainage swale aspect of this linear track. The outer perimeter of the laydown parcel area is fenced and gated pedestrian access exists in the western and eastern boundaries. According to Mr. Kane, this outer perimeter fence line was installed in November 2003 (Kane 2004).

Sinkholes

Further discussion with Mr. Kane in November 2004 revealed that naturally occurring sinkholes within the two enclosures in Parcels 33 and 34 are biologically significant resources. Mr. Kane stated that the water levels in the sinkhole varied a lot and may be tidally influenced. It is likely that the water collecting in these sinkholes supports local flora and fauna within the enclosures (Kane 2004). Some dry sinkholes were observed in the perimeter of the densely vegetated area of Parcel 35 during the November 2004 survey. There is a potential for sinkholes with water to exist within the densely vegetated area of Parcel 35. In fact, the higher moisture levels introduced by the pools may be what supports the dense growth of trees and bushes in this area. No vegetation was observed in the aerial photograph from the early 1990's, depicted in Figure 4.5-2, and this portion of Parcel 35 is the only area outside of the enclosures that has such dense regrowth of trees.

Flora

Vegetation in the brush land of the laydown parcels is dominated by Indian pluchea (*Pluchea indica*) with interspersed stands of low lying herbaceous plants (*Sesuvium portulacastrum*, *Atriplex semibaccata*, and *Batis maritima*), grasses, and kiawe trees (*Prosopis pallida*). Other plant species included nena (*Heliotropium curassavicum*), sourbush (*Pluchea symphytifolia*), and naio (*Myoporum sandwicense*).

Fauna

Terrestrial biota includes various reptiles (geckos and anoles) and rodents (mice and rats). Other mammal species include mongoose and feral cats. Bird species observed included: Zebra doves, spotted doves, sharp-tailed sandpipers, and mynah birds. These species are transient over much of the 21.7 acres of the laydown parcels. However, large flocks of doves and mynah birds

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were observed to roost in the larger kiawe trees in Parcel 35, and the brush land is likely habitat for mice, rats, and mongoose.

Though not observed during the AMEC November 2004 survey, Mr. Kane mentioned that he has occasionally observed populations of tiny shrimp living in the sinkholes located in the plant preservation enclosures of Parcels 33 and 34. These shrimp are likely to be the endemic species of Hawaiian red shrimp (*Halocaridina rubra*), commonly called opae ula. Though not endangered, it is recommended that care should be taken to minimize impacts to the habitat of this native species.



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**Table 2.8-1 Plant Species Observed or Known to Occur at the H-POWER Facility and the Laydown Area November  
2004 Biological Reconnaissance Survey**

Plant Species	Common Names	Family	Status
<i>Asystasia gangetica</i>	Chinese violet	Acanthaceae	non-native
<i>Sesuvium portulacastrum</i>	akulikuli; sea purslane	Aizoaceae	indigenous; common
<i>Achyranthes splendens</i> var. <i>rotundata</i>	--	Amaranthaceae	endemic; endangered
<i>Amaranthus spinosus</i>	spiny amaranth	Amaranthaceae	non-native
<i>Amaranthus viridis</i>	slender amaranth	Amaranthaceae	non-native
<i>Cascabela thevetia</i>	yellow oleander; be-still tree	Apocynaceae	non-native
<i>Schefflera actinophylla</i>	octopus tree	Araliaceae	non-native
<i>Cocos nucifera</i>	coconut tree; niu	Areaceae	non-native
<i>Bidens alba</i>	beggar's tick	Asteraceae	non-native
<i>Pluchea indica</i>	Indian pluchea; Indian fleabane	Asteraceae	non-native
<i>Pluchea symphytifolia</i>	sourbush	Asteraceae	non-native
<i>Tridax procumbens</i>	coat buttons	Asteraceae	non-native
<i>Verbesina encelioides</i>	golden crown-beard	Asteraceae	non-native
<i>Batis maritima</i>	pickleweed; salt wort	Bataceae	non-native
<i>Heliotropium curassavicum</i>	seaside heliotrope; kipukai; nena	Boraginaceae	indigenous; common
<i>Heliotropium procumbens</i>	--	Boraginaceae	non-native
<i>Opuntia ficus-indica</i>	prickly pear cactus; panini	Cactaceae	non-native
<i>Capparis sandwichtiana</i>	maiapilo; pilo; pua pilo	Capparaceae	endemic, vulnerable
<i>Atriplex semibaccata</i>	Australian saltbush	Chenopodiaceae	non-native
<i>Clusia rosea</i>	autograph tree	Clusiaceae	non-native
<i>Ipomea cairica</i>	ivy-leaved morning glory; koali ai	Convolvulaceae	non-native
<i>Momordica charantia</i>	balsam pear; bitter gourd	Cucurbitaceae	non-native
<i>Chamaesyce hirta</i>	garden spurge	Euphorbiaceae	non-native
<i>Acacia farnesiana</i>	klu	Fabaceae	non-native
<i>Alysicarpus vaginalis</i>	alysicarpus	Fabaceae	non-native
<i>Desmanthus virgatus</i>	slender mimosa; virgate mimosa	Fabaceae	non-native

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Table 2.8-1 Plant Species Observed or Known to Occur at the H-POWER Facility and the Laydown Area November 2004 Biological Reconnaissance Survey

Plant Species	Common Names	Family	Status
<i>Leucaena leucocephala</i>	haole koa; koa haole; wild tamarind	Fabaceae	non-native
<i>Mimosa pudica</i>	sensitive plant; sleeping grass	Fabaceae	non-native
<i>Prosopis pallida</i>	kiawe; mesquite	Fabaceae	non-native
<i>Samanea saman</i>	monkeypod tree	Fabaceae	non-native
<i>Scaevola sericea</i>	beach naupaka; naupaka kahakai	Goodeniaceae	non-native
<i>Abutilon grandifolium</i>	hairy abutilon	Malvaceae	non-native
<i>Sida fallax</i>	ilima	Malvaceae	indigenous, common
<i>Myoporum sandwicense</i>	naio; naeo; naieo; bastard sandalwood	Myoporaceae	indigenous; common
<i>Boerhavia coccinea</i>	--	Nyctaginaceae	non-native
<i>Oxalis corniculata</i>	wood sorrel; 'ih'i ai	Oxalidaceae	non-native
<i>Passiflora foetida</i>	love-in-a-mist; wild passionfruit; pohapoha	Passifloraceae	non-native
<i>Brachiaria subquadriflora</i>	--	Poaceae	non-native
<i>Cenchrus ciliaris</i>	buffel grass	Poaceae	non-native
<i>Chloris barbata</i>	swollen finger grass; mau'u lei	Poaceae	non-native
<i>Cynodon dactylon</i>	Bermuda grass; manienie	Poaceae	non-native
<i>Dactyloctenium aegyptium</i>	beach wiregrass	Poaceae	non-native
<i>Eleusine indica</i>	goose grass; manienie ali'i	Poaceae	non-native
<i>Sporobolus diander</i>	Indian dropseed	Poaceae	non-native
<i>Lycopersicon pimpinellifolium</i>	cherry tomato	Solanaceae	non-native
<i>Nicotiana glauca</i>	tree tobacco; Indian tobacco; makahala	Solanaceae	non-native
<i>Waltheria indica</i>	uhaloa	Sterculiaceae	indigenous; common

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**Special Status Species**

Flora and Invertebrate Fauna

On October 8, 2004, the U.S. Fish and Wildlife Service (USFWS) replied to a letter requesting a list of rare, threatened, or endangered species, and significant natural communities that may be affected by the proposed Expansion. The USFWS list included one endangered plant, *Achyranthes splendens* var. *rotundata*, as occurring in the vicinity of the proposed project, specifically, within the footprint of the proposed temporary construction (laydown) area (USFWS 2004a). This species is a low shrub varying in height from 1 1/2 to 6 1/2 feet. Three locations within the laydown area have been fenced and are currently protected as plant preservation areas. Due to limited site access, only the perimeters of the three fenced enclosures were surveyed during the November 2004 biological site reconnaissance.

No populations or individuals of *Achyranthes splendens* var. *rotundata* were observed during the November 2004 site reconnaissance survey. However, according to Mr. Kane, the two enclosures within Parcels 34 and 33 shelter the last two naturally occurring populations of the endangered plant, *Achyranthes splendens* var. *rotundata* and a population of this plant was transplanted in the third enclosure in Parcel 35. Mr. Kane also shared his observation that condensation from precipitation and runoff that collects in the sinkholes within the plant preservation enclosures appears to support the *Achyranthes* populations, especially during the drier summer months.

Additionally, prior communication on July 20, 2004 with USFWS (USFWS 2004b) indicated that the endangered plant *Chamaesyce skottsbergii* var. *skottsbergii* is known from the surrounding area. The July 20 correspondence also indicated that an invertebrate species of concern, *Lyropupa perlonga*, is known from an area adjacent to the project site, though a specific location was not identified, and no individuals of this species were observed during the November 2004 site reconnaissance survey.

Vertebrate Fauna

The shoreline, estuarine, and freshwater areas associated with Pearl Harbor are known habitat for four species of endemic waterfowl which are listed by both federal government and by the State of Hawaii as endangered species: the Hawaiian moorhen (*Gallinula chloropus sandvicensis*), the Hawaiian coot (*Fulica americana alai*) the Hawaiian duck (*Anas wyvilliana*) and the Hawaiian stilt (*Himantopus mexicanus knudseni*) [50 CFR Part 17]. Previous sightings of three of these four species (Hawaiian coot, Hawaiian moorhen, Hawaiian stilt) have been documented in the vicinity of the project area (USFWS 2004a). Population levels of these endangered waterfowl have been severely reduced primarily because of the loss of wetland habitat. Other threats to these species include predation by introduced mammals, invasion of wetlands by alien plants and fish, hybridization, disease, and possibly environmental contaminants (USFWS 1994). No endangered waterfowl species were observed during the November 2004 site reconnaissance survey.

Two additional species of birds, listed as threatened or endangered by the State of Hawaii, but not listed by the federal government, are found in the vicinity of Pearl Harbor. These two species

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include the state-threatened white tern (*Gygis alba rothschildi*), a diminutive, arboreal-nesting seabird which can be seen around Pearl Harbor, and the state-endangered Hawaiian owl (*Asio flammeus sandwichensis*) an endemic race of the crepuscular, ground-nesting short-eared owl). Neither of these species was encountered during the November 2004 site reconnaissance survey.

Two additional species of birds, listed as threatened or endangered by the State of Hawaii, but not listed by the federal government, are found in the vicinity of Pearl Harbor. These two species include the state-threatened white tern (*Gygis alba rothschildi*), a diminutive, arboreal-nesting seabird which can be seen around Pearl Harbor, and the state-endangered Hawaiian owl (*Asio flammeus sandwichensis*) an endemic race of the crepuscular, ground-nesting short-eared owl). Neither of these species was encountered during the November 2004 site reconnaissance survey.



Aerial Photo - Early 1990's

FIGURE  
2.8-2

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**Section 3 - Cultural Practices and Resources**

**ASSESSMENT OF THE EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES**

This chapter describes the existing human environment in the area of the H-POWER facility that would potentially be affected by the proposed Project. The area includes the existing H-POWER site as well as the three adjoining parcels under consideration for temporary storage of construction equipment, pre-fabrication activities, and for construction parking and trailers. In addition, because the human environment can be regional in nature, regional issues are addressed where necessary to establish an appropriate perspective on the human environment.

**31 Archaeological and Cultural Resources**

Recently, in preparation for a third boiler plant expansion (Expansion), PCSI, conducted an archaeological and cultural impact assessment for the proposed Expansion. PCSI, a Honolulu-based consulting firm offering professional archaeology services, evaluated both the H-POWER site and the parcels proposed for temporary use during construction. Their analysis included an evaluation of baseline (existing) and potentially existing resources, as well as an assessment of the effect that the Expansion might have upon archaeological or cultural resources. This section summarizes the results of that study.

**Standards and Guidelines for Archaeological and Cultural Resource Assessments**

Various local and federal agencies have established guidelines and standards for assessing archaeological and cultural impacts. The applicable guidelines and standards are summarized below.

**National Historic Preservation Act**

The National Historic Preservation Act (NHPA) was passed in 1966 which, in the words of the Act, the Federal Government's role would be to "provide leadership" for preservation, "contribute to" and "give maximum encouragement" to preservation, and "foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony."

To achieve this, NHPA and related legislation sought a partnership among the Federal Government and the States that would capitalize on the strengths of each. The Federal Government, led by the National Park Service as the agency with the longest and most direct experience in studying, managing, and using historic resources, would provide funding assistance, basic technical knowledge and tools, and a broad national perspective on America's heritage.

The States, through State Historic Preservation Officers appointed by the Governor of each State, would provide matching funds, a designated State office, and a statewide preservation program

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tailored to State and local needs and designed to support and promote State and local historic preservation interests and priorities. In Hawaii the State Historic Preservation Office is referred to as the State Historic Preservation Division (SHPD).

**State Historic Preservation Division**

The Hawaii SHPD issued draft guidelines for the preparation of archaeological studies in December 2002 and the requirements for certain archaeological assessments are described in Chapters 13-275 and 13-276 of the Hawaii Administrative Rules. Section 13-275 (a) 5(A) states that:

"An archaeological assessment shall include the information on the property and the survey methodology as set forth in subsections 13-276-5(a) and (c), as well as a brief background section discussing the former land use and types of sites that might have been previously present."

The archaeological assessment that was undertaken follows the draft guidelines issued by SHPD and the Hawaii Administrative Rules.

**State Office of Environmental Quality Control**

The State OEQC publishes *Guidelines for Assessing Cultural Impact*, which are designed to comply with the requirements of Chapter 343 HRS as amended in 2000 and approved by the Governor as Act 50 that same year. The archaeological assessment that was undertaken follows these guidelines.

**3.2 Study Methodology and Scope**

The study methodology and scope of the work conducted included the following:

- Archival background research for the project area
- Literature review of previous archaeological studies within the project area and in areas near the H-POWER facility
- Verbal and written consultation with the Office of Hawaiian Affairs
- Interviews with community members recommended by the SHPD
- Reconnaissance survey of three additional parcels (TMK: 9-1-026: 33-35) adjacent to the current H-POWER facility to determine the presence/absence of cultural resources

An archaeological reconnaissance survey and follow-up test excavations of possible historic sites at the H-POWER site were undertaken as part of the environmental review process for the H- POWER facility in 1983-84 (Ahlo and Hommon 1983; Hommon and Ahlo 1984). No historic properties were found at that time. Human remains were found during construction of the facility, in 1986. There is a possibility that more burials might be found during the construction phase of the proposed project, although the area has already been cleared, graded,

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and covered with gravel. For this reason, CHRRV and the City and County of Honolulu propose that the site will be monitored during the initial stages of excavation for the Expansion (see mitigation discussion in Section 5.1.4, below).

Due to the extensive prior disturbance at depth from construction of the original H-POWER facility in 1985, in combination with construction mitigation (on-call monitoring) already proposed, the current archaeological assessment did not include survey or excavations of the existing industrial H-POWER site. The scope did include, however, archaeological and cultural impact assessments of the three adjacent vacant parcels, including Parcel 33 (6.041 acres), Parcel 34 (8.164 acres), and Parcel 35 (8.654 acres). Portions of these parcels may be needed for a laydown area for temporary staging areas and parking during construction, which is expected to take place over a period of approximately 24 months.

The results of the site reconnaissance and cultural resource investigations form the basis of the summary of existing conditions that follows below.

### **33 Existing Conditions - Archaeological and Cultural Resources**

In discussing existing conditions for archaeological and cultural resources, it is important to understand that much of the evaluation must focus on resource potential and oral history. Though some information about identified resources does exist, often, existing conditions are defined on the basis of resources suspected to have existed or on the basis of those potentially remaining at a given location.

#### **Archaeological Resources**

As noted above, the H-POWER site is a heavily industrialized site that has undergone extensive ground disturbance at depth, during construction of the original H-POWER facility. Though archaeological resources are therefore not likely, the fact that human remains were found during construction of the facility in 1986 indicates that however remote, there is a possibility that more burials may exist. For this reason, CHRRV and the City and County of Honolulu propose that the site will be subject to on-call monitoring during the initial stages of excavation for the Expansion (see Mitigation discussion, below).

A reconnaissance survey was undertaken on October 20, 2004 of the undeveloped Parcels 33-35 that are proposed for temporary construction use during the Expansion. The entire survey area was found to have been extensively disturbed. The fenced plant sanctuaries were not surveyed since they will not be utilized during construction of the proposed Expansion. There is evidence that large portions of all three parcels have been grubbed and graded. Clearing may have occurred on more than one occasion. Aerial photographs suggest that the land clearing project undertaken by Campbell Estate in the early 1960s on Parcel 30 and documented during the archaeological reconnaissance survey in 1983, also included Parcels 33-35. One of the individuals interviewed for the cultural impact assessment, noted that a number of sinkholes were buried at the time the land was bulldozed.

The Refuse Division of the City Department of Environmental Services provided valuable information concerning the recent land use history of the subject parcels, which helped to

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explain the various kinds of land disturbance observed during the field survey. Apparently, the area below the H-POWER facility, along Kaomi Loop, was used for many years by dune buggy enthusiasts and for illegal dumping. A maze of small roads or paths is still visible in many areas. Some trash remains in the area. At least 11 car bumpers of various makes or models,

tires and various other items were found during the reconnaissance survey along one of the dune buggy roads in Parcel 35, near the terminus of Kaomi Loop. The City erected a chain link fence along Kaomi Loop in 2004 to prevent further dumping and unauthorized use of the area. Installation of the fence appears to have involved the addition of some fill material as well.

It appears that the eastern edge of Parcels 33-35 was also filled, most probably during the construction of the existing H-POWER facility in the 1980s. The land along the chain fence separating Parcel 30 from Parcels 33-35 and extending some 15 to 20 meters into the three parcels is raised roughly 1 meter or so above the adjoining land surface, which is flat. Situated on top of the fill is a roughly north-south oriented steam pipe that runs from the AES facility north to the Chevron USA Oil refinery.

Parcel 35 is the least disturbed of the three parcels. Several small sinkholes (1 meter or less in diameter) were found in the large thicket of *kiawe* trees that occupies a sizable area of this parcel. Most of those observed were filled with bulldozer push. No cultural materials, human remains, fossil bird bones, or extinct land snails were observed within any of the sinkholes, but the probability that such materials exist in at least some of the sinkholes is high based on the results of previous archaeological investigations in the general area.

### **Cultural Resources**

Cultural resource interviewees emphasized the importance of preserving more sinkholes in the Kalaeloa area and other areas because of the native plants, human remains, and other evidence of past human uses that are often found in and around them. The sinkholes, which once numbered in the thousands and formed part of a vast natural and cultural landscape in the Kalaeloa area, are now restricted to a small number of undeveloped or undisturbed properties. The sinkholes contained within the two plant enclosures and in the *kiawe* thicket in Parcel 35 represent some of the last remaining examples of this landscape in the local area.

No information on beliefs, cultural practices, or culturally important places within the boundaries of the proposed project area or adjacent areas was provided, except for a story related by an interviewee about her mother exchanging dried fish and salted meat for *'skole hao*, a liquor made from ti plants, that was made by a man who lived somewhere nearby.

On current evidence, there are no known Traditional Cultural Properties or on-going cultural practices within or near the Area of Potential Effect based on a review of the pertinent literature for the area and the consultations conducted. While culturally significant sites may have existed at one time within or in close proximity to the H-POWER plant, the nearest (approximately 2.7 miles) known surviving site with cultural significance is Pu'uokapolei, a small cinder cone that is the most prominent landmark on the 'Ewa Plain and the former site of

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Fort Barrette. In their synthesis of cultural resource studies on the 'Ewa Plain, Tuggle and Tomonari-Tuggle (1997) noted that Pu'uokapolei was the sacred center of that part of O'ahu:

Probably the most important of all traditional locales on the 'Ewa Plain is the hill known as Pu'uokapolei. This volcanic cone at the inland edge of the 'Ewa Plain was the location of a temple, (of unknown affiliation), a residence of the family of the demi-god Kamapua'a, a reference point for solar observation, and a traveler's landmark (McAllister 1933:108; Kamakau 1976:14; Ii 1959:27; Thrum 1907:46).

Additional information on Pu'uokapolei is summarized in *Sites of O'ahu* (Sterling and Summers 1978).

### **3.4 Impacts and Mitigation - Archaeological and Cultural Resources**

The primary activities associated with the Project that could pose an impact to known or potential archaeological or cultural resources are those that involve earth disturbance. These include:

- Excavation for additional foundations and structural support for the proposed bag house at the H-POWER site
- The use of compactors to identify areas on the temporary construction parcels suitable for use and grading of usable areas to a depth of approximately 1 to 1.5 feet
- Burial of an existing steam pipe located along the H-POWER and laydown area property boundary to a depth of at least 3 feet below grade

While no historic properties were identified, there is a possibility that subsurface cultural and paleontological deposits and human remains might be found in some areas of the proposed project area in sinkholes, some of which are still partially open and others that were undoubtedly covered (filled) when the land was cleared. The following precautionary mitigation measures will be implemented:

1. Although the area has previously been cleared, graded and covered with gravel, there is a slight possibility that additional burials might be found in sinkholes during construction of the unit 2 baghouse foundation given the close proximity to the burial found in a previously unidentified sinkhole in 1986. Excavations in this area, below the level of previous disturbance, will be subjected to monitoring.
2. Use of Parcel 35 will be limited for the proposed construction laydown area based on the results of the archaeological assessment and the cultural impact assessment interviews, which identified sinkholes as important biological and cultural resources.
3. The plant sanctuaries in Parcels 33-34, though protected by chain-link fences, will be protected with an additional 25-foot buffer because of the unknown extent of the sinkholes within each of the two areas.

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4. The plans for the laydown area call for: (a) the use of compactors to identify areas suitable for fabrication and storage areas; (b) grading of usable areas to a depth of approximately 1 to 1.5 feet, and (c) burial of the steam pipe at least 3 feet below grade.

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**Section 4 — Summary of Impacts and Mitigations**

**4.1 Short Term Impacts**

Impacts will occur during the construction period including short term positive impacts to the economy resulting from construction period employment and associated spending for construction equipment and supplies. No long term impact will result including impact to schools or other public services or facilities.

During construction there will also be impact to geology and soils through the development of an offsite construction laydown, staging, parking and fabrication area however this will occur on previously disturbed land appropriately zoned for this purpose.

Air Quality and noise impacts will occur from construction activities including operation of mobile construction equipment.

Roadways and Traffic will be impacted during construction with an estimated additional 50 vehicle trips per day over a two-year construction period.

Surface water quality could be impacted from construction period run off however an erosion and sedimentation control program will be employed.

Biological Resources will be protected with in the established sanctuary areas of the parcels designated for construction laydown.

**4.2 Long Term Impacts**

Long term impacts will include a positive benefit to air quality and human health through the upgrade of the Air Pollution Control system.

Permanent disturbance will be made to geology and soils however this will occur in previously disturbed areas.

No impact will occur to water resources as no additional process water will be required. Storm water will continue to be captured and Best Management Practices are in effect through the facility NPDES General Permit.

No archaeological, historic or cultural impacts are anticipated. Construction phase excavation will be controlled and activities will be interrupted if discoveries are made.

**4.3 Construction Period Mitigation**

An Erosion and Sedimentation Control program will be established through a NPDES Construction phase permit. Best Management Practices, BMP, will be employed including interception of run off, silt fences/barriers and protection of existing storm water features and

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devices including catch basins and culverts. Intercepted runoff will be directed to settling ponds if required.

Fencing will be installed and maintained to protect sensitive areas including plant sanctuaries.

During clearing, grubbing and earthwork activities water trucks will be utilized to minimize dust.

Construction equipment will be equipped with noise mufflers and emissions control devices as required by law.

Construction parking will be limited to encourage carpooling.

Deliveries will be scheduled to minimize traffic peaks associated with normal shift work within the industrial park. A separate construction entrance will be established to prevent traffic congestion at key intersections.

The construction laydown has been designed to avoid disturbance of both the established plant sanctuaries including a buffer zone and to avoid to the extent possible the northern parcel where sink holes are known to exist.

#### **4.4 Long Term Mitigation**

The project in and of itself is a mitigation of air emissions designed to employ the Most Achievable Control Technology (MACT compliance) as exists in the industry for control of air emissions and hazardous air pollutants as required by the Clean Air Act.

The project is basically a replacement of existing equipment with upgraded and more efficient equipment. Therefore there are no further impacts including cultural, traffic, noise, visual, socioeconomic, solid waste, energy or human health that already exist.

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**Section 5 — Alternatives**

**5.1 No Action**

The No Action Alternative would consist of continued operation with current control technology which is based on an electro static precipitator based control system. This would require submittal of a Control Plan under the Clean Air Act and implementing regulations, 40 CFR 60 sub part Cb and 40 CFR 62 sub part FFF that would expose that the current technology, Electro Static Precipitators, are as effective as bag houses and that the revised Emissions Guidelines could be met without any upgrade and would require that the emissions limit for total organics, dioxins and furans, be revised from 60 nanograms per dry standard cubic meter to 35 nanograms per dry standard cubic meter.

Although the most recent annual emissions tests (stack tests) as conducted by Covanta Honolulu Resource Recovery Venture and submitted to the Hawaii State Department of Health, Clean Air Branch, under Covered Source Permit (CSP) No. 0255-01-C on June 28, 2007, demonstrate the ability of the facility to meet these revised Emissions Guidelines, the age, condition and changing waste characteristics caused the City and County of Honolulu to discount the no action alternative and decide to embark on an upgrade from an electrostatic precipitator based control plan to a mechanical filter (bag house) based control plan.

**5.2 Pulse Jet Alternative**

In a letter dated October 13, 2006 the City directed CHRRV to proceed with replacement of the existing ESP's with bag houses in order to meet the Maximum Achievable Control Technology standards expected to become effective in 2009. CHRRV was directed to prepare a Request for Proposal, RFP, and that the City and CHRRV would select an offering that provided the lowest life cycle cost to the City.

There are basically two forms of bag houses, reverse air and pulse jet. The difference amounts to the means for cleaning the filtered matter from the fabric filters, either using pulsed jets of air or by reversing air flow through the fabric filter.

Pulse jets were offered by a number of manufacturers. All met the technical requirements and could comply with the MACT standards.

**5.3 Reverse Air Alternative**

CHRRV selected the Reverse Air alternative based on:

1. a lower initial cost;
2. a lower air to cloth ratio resulting in improved filter efficiency (more net filter area per unit of air flow);
3. a better cleaning efficiency reducing pressure drop across a clean filter.

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The detraction is that the bags are longer, thus the assembly is taller reducing the ability to factory assemble in modules. CHHRV estimated there would be a 6° o increase in field erection cost.

The City's consulting engineer, reviewed and endorsed CHRRV's selection. The

City concurred with the selection.

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**Section 6— Findings**

**6.1 Significance Criteria**

Based on the significance criteria set forth in HAR, Title 11, Chapter 200, Environmental Impact Statement Rules, the proposed project is not anticipated to result in significant environmental impacts. The recommended preliminary determination for the proposed project is a Finding of No Significant Impact (FONSI). The findings and reasons supporting this determination are summarized as follows:

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource*

The proposed project will not result in the adverse loss of natural or cultural resources. There are no threatened or endangered species of plants or wildlife that inhabit the project site. Specific Endangered Species within the laydown area are contained within established and fenced sanctuaries. Buffer zones will be provided. Given the historical use of the area, and the composition of the underlying soils, historic or archaeological sites are not known to be present at the site. However, in the unlikely event of a discovery of significant cultural, historic or archaeological resources, the SHPD will be immediately notified for appropriate action and treatment. As required, work will be temporarily halted as instructed by SHPD.

2. *Curtails the range of beneficial uses of the environment*

The subject property is zoned for intensive industrial use. The proposed use is consistent with the industrial designation of the site and will be contained entirely within the property. The proposed action does not curtail beneficial uses of the environment.

3. *Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 343, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders*

The proposed project is consistent with the environmental policies, goals and guidelines expressed in HRS, Chapter 343. Potential sources of adverse impacts have been identified and appropriate measures have been developed to either mitigate or minimize potential impacts to negligible levels.

4. *Substantially affects the economic and social welfare of the community or state*

The operation of the facility will be regulated in accordance with County, State and Federal regulations. The proposed project is expected to maintain the social and economic environment of O'ahu by aiding in the safe disposal of Municipal Solid Waste while beneficially recovering material and energy.

5. *Substantially affects public health*

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Factors affecting public health, including water quality and noise levels, are expected to be only minimally affected, or unaffected, by the proposed project. The proposed project will result in an upgrade to air quality and human health.

6. *Involves substantial secondary impact, such as population changes or effects on public facilities*

The proposed activity is expected to have little to no substantial secondary or indirect impacts such as population changes or effects on public facilities based on the limited scope and scale of the project. The proposed project will however provide an essential service to a region that is experiencing rapid development. The proposed project complies with the Clean Air Act and Title V.

7. *Involves a substantial degradation of environmental quality*

Impacts to air and water quality, noise levels, natural resources, and land use associated with the planned project are anticipated to be minimal. Mitigation measures will be employed as practicable to minimize potentially negative effects to the environment. The proposed project does not involve substantial degradation of environmental quality, but in fact improves it.

8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The proposed improvements are not expected to cause adverse cumulative impacts to the environment, nor does the proposed project involve a commitment for larger actions in that all work required will be limited to use of the project site. The proposed project is in accordance with the land use plans and policies of the State and City and County of Honolulu and the Federal Clean Air Act.

9. *Substantially affects a rare, threatened or endangered species*

There are no rare, threatened or endangered plant or animal species on the project property. The endangered plant species in the laydown area are properly protected.

10. *Detrimentially affects air or water quality or ambient noise levels*

On a short-term basis, ambient air and noise conditions may be affected by construction activities related to the proposed facility improvements, but these are short-term potential impacts and can be controlled by mitigation measures as described in this EA. Once the project is completed, noise in the project vicinity will be allowed to return to conditions consistent with the surrounding land uses. Erosion control measures and other BMPs will be employed to prevent untreated storm water runoff from construction activities entering State waters. Air quality will be improved.

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11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, erosion prone area, geologically hazardous land, estuary, fresh water, or coastal waters*

The project area is located within an area within the tsunami evacuation zone. Mitigation measures, including evacuation procedures are in place to ensure personnel safety in the event of a tsunami. The proposed action is not expected to have a significant impact on flood conditions. The proposed project will not entail any reduction or increase in shoreline levels, therefore significant impacts on the extent of overland flooding is not anticipated.

12. *Substantially affects scenic vistas and viewplanes identified in county or state plans or studies*

The proposed project will not obstruct any significant scenic features and viewplanes due to its elevation and existing similar industrial activities in close proximity to the project site. The site improvements will not substantially affect any existing views from surrounding areas.

13. *Requires substantial energy consumption*

Construction and daily activities associated with the proposed site improvements will not require substantial amounts of energy. The energy consumed by the fabric filter will be less than that consumed by the current electro static precipitators. All energy consumed is produced internally and is recovered in the process of safely disposing Municipal Solid Waste.

## **6.2 Findings**

In accordance with the provisions set forth in HRS, Chapter 343, and the significance criteria in HAR, Section 11-200-12 of Title 11, Chapter 200, it is anticipated that the proposed project will have no significant adverse impacts to water quality, air quality, existing utilities, noise levels, social welfare, archaeological sites, or wildlife habitat. All anticipated impacts are expected to be temporary in duration and will not adversely impact the environmental quality of the area. It is expected that an Environmental Impact Statement (EIS) will not be required, and that a Finding of No Significant Impact (FONSI) will be issued for this project.

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**Section 7 – Required Permits**

**7.1 City and County of Honolulu**

Clearing and Grubbing	Laydown area
Grading	Laydown area
Trenching	Only for Kaomi Loop Opening

Note: building permits exempt, reference Honolulu Revised City Ordinance, Chapter 18, Article 3 [18.3.1(b) 21] as Project is a public works project undertaken by or on behalf of City.

**7.2 State of Hawaii**

NPDES NOI Form C	Storm Water, Construction phase Dewatering, Construction phase
NPDES NOI General	Storm Water, Plant, possible update
Title V, Air Quality Covered Source Permit CSP 0255-01-C	Minor Modification

**7.3 Federal**

10 CFR 62 subpart FFF	Site Specific Schedule Request, “Increments of Progress” approach approval
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**Section 8 – Agencies and Organizations Consulted in the Preparation of the  
Environmental Assessment**

Notice of the Draft Environmental Assessment for the Air Pollution Control System Improvement Project was published in the Office of Environmental Quality Control Environmental Notice of April 23, 2008. Copies of the Draft Environmental Assessment were mailed to the agencies and organizations listed below. Publication in the Environmental Notice initiated a 30-day public comment period which ended on May 23, 2008. An asterisk \* identifies agencies and organizations that submitted written comments to the Draft Environmental Assessment. Comment letters and responses are found in Appendix A of the Final Environmental Assessment.

State

Department of Health  
Office of Environmental Quality Control  
Environmental Planning Office  
\*Department of Land & Natural Resources  
State Historic Preservation Officer  
Office of Planning  
\*Department of Accounting and General Services  
\*Department of Business Economic Development & Tourism  
UH Manoa Environmental Center

City

\*Department of Planning and Permitting  
\*Department of Parks and Recreation  
\*Department of Facility Maintenance  
Honolulu Fire Department  
\*Honolulu Police Department  
\*Board of Water Supply

Other

Hawaiian Electric Company  
Neighborhood Board #34, Chair

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**Section 9 – Determination of Significance**

Chapter 200 (Environmental Impact Statement Rules) of Title 11, Administrative Rules of the State Department of Health, establishes criteria for determining whether an action may have significant effects on the environment (11-200-12). The relationship of the proposed project to these criteria is discussed below.

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;  
There are no natural or cultural resources on the premises to be affected by the proposed action.

2. Curtails the range of beneficial uses of the environment;  
The project does not curtail the beneficial uses of the environment.

3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and any revisions thereof and amendments thereto, court decisions or executive orders;

The project will not conflict with long-term environmental policies, goals, and guidelines of the State of Hawaii.

4. Substantially affects the economic or social welfare of the community or State;

The project will not substantially affect the economic or social welfare of the State. Short-term economic benefits will be derived in the form of construction wages and material purchases.

5. Substantially affects public health;

Public health will not be adversely affected by the proposed project.

6. Involves substantial secondary impacts, such as population changes or effects on public facilities;

Substantial secondary impacts are not anticipated.

7. Involves a substantial degradation of environmental quality;  
Environmental quality of the site will not be degraded.

8. Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

The proposed action does not involve a commitment for larger actions.

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9. Substantially affects a rare, threatened or endangered species, or its habitat;

Endangered plants are protected within established sanctuaries. Adequate protective buffer zones have been added.

10. Detrimentially affects air or water quality or ambient noise levels.

Ambient air quality will be affected by fugitive dust and combustion emissions during construction but can be controlled by measures stipulated in this Assessment. Construction noise will be pronounced during site preparation work but should diminish once the buildings are erected. All construction activities will comply with air quality and noise pollution regulations of the State Department of Health.

The project itself is being undertaken to reduce harmful air pollutant emissions during operations and is therefore an environmental benefit.

Erosion control measures will be prescribed in grading plans and best management practices prepared for the project.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The proposed H-POWER project is not located in a flood hazard area or tsunami inundation zone.

12. Substantially affects scenic vistas and view planes identified in county or state plans or studies, or:

The proposed H-POWER project will not affect scenic vistas identified in County or State plans or studies.

13. Requires substantial energy consumption.

Energy consumption will not change.

Based on the above criteria, the proposed H-POWER project will not result in significant adverse environmental impacts and an Environmental Statement should not be required.

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**Appendix – Comments and Responses**

MUFU HANNEMANN  
MAYOR



OUR REFERENCE BS-KP

April 30, 2008

2008 MAY -5 A 1 19  
RECEIVED  
H-POWER

BOISSE P. CORREA  
CHIEF  
PAUL D. PRIZOLA  
HONOLULU  
SERV. CHIEF

TO: ERIC S. TAKAMURA, PH. D., P.E., DIRECTOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES  
ATTENTION: STEPHEN LANGHAM, P.E., REFUSE DIVISION, H-POWER  
FROM: BOISSE P. CORREA, CHIEF OF POLICE  
HONOLULU POLICE DEPARTMENT  
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE AIR POLLUTION  
CONTROL SYSTEM IMPROVEMENT PROJECT, EWAIAKAPOLEI

Thank you for the opportunity to review and comment on the subject project.  
This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Michael Moses of District 8 at 692-4253 or Mr. Brandon Stone of the Executive Office at 529-3644.

BOISSE P. CORREA  
Chief of Police

By   
DEBORA A. TANDAL  
Assistant Chief of Police  
Support Services Bureau

cc: Ms. Katherine Kealoha, OECC

*Serving and Protecting With Aloha*

MUFU HANNEMANN  
MAYOR



May 28, 2008

ERIC S. TAKAMURA, PH.D., P.E.  
DIRECTOR  
FRANK J. DOYLE, P.E.  
CHIEF  
IN REPLY REFER TO:  
RH 08-030

**MEMORANDUM**

TO: BOISSE P. CORREA, CHIEF OF POLICE  
HONOLULU POLICE DEPARTMENT  
FROM: STEPHEN LANGHAM, ENERGY RECOVERY ADMINISTRATOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES, REFUSE DIVISION  
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of April 30, 2008.

As the proposed project should not have any significant impact on your department's facilities or operations we will remove you as a consulted party to the balance of the EIS process.

We thank the Honolulu Police Department for participating in the environmental assessment review process.



LINDA LINGLE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P.O. BOX 119, HONOLULU, HAWAII 96810  
MAY - 1 2008

RECEIVED  
H - POWER

RUSS K. SAITO  
COMPTROLLER  
BARBARA A. ANNIS  
DEPUTY COMPTROLLER

(P)1109.8

DEPARTMENT OF ENVIRONMENTAL SERVICES  
CITY AND COUNTY OF HONOLULU

REFUSE DIVISION  
1000 ULUOHA STREET SUITE 212, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 982-5333 • FAX: (808) 982-5402 • WEBSITE: <http://www.ceo.honolulu.gov>



MAFRI HANNEMANN  
MAYOR

ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR  
FRANK J. DOWIE, P.E.  
CHIEF  
IN REPLY REFER TO:  
RH 08-031

May 28, 2008

Mr. Stephen Langham, P.E.  
Department of Environmental Services  
Refuse Division, H-POWER  
City and County of Honolulu  
91-174 Hanua Street  
Kapolei, Hawaii 96707

Dear Mr. Langham:

Subject: H-Power Air Pollution Control System Improvement Project  
Draft Environmental Assessment (DEA)  
TMK [ ] 9-1-026-030, 033, 034, and 035

Thank you for your DEA dated April 23, 2008. This project does not directly affect the Department of Accounting and General Services' projects or existing facilities, and we have no comments to offer at this time.

If you have any questions, please have your staff call Mr. Bruce Bennett of the Planning Branch at 586-0491.

Sincerely,

ERNEST Y. W. LAU  
Public Works Administrator

BB:vcg  
c: Ms. Katherine Kealoha, DOH-OEOC  
Mr. Eric S. Takamura, Director, CCH Department of Environmental Services

Mr. Ernest Y.W. Lau, Public Works Administrator  
State of Hawaii  
Department of Accounting and General Services  
P.O. Box 119  
Honolulu, HI 96810

Dear Mr. Lau,

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of May 1, 2008.

As the proposed project does not directly affect your department we will remove you as a consulted party to the balance of the EIS process.

We thank the Department of Accounting and General Services for participating in the environmental assessment review process.

Sincerely,  
  
Stephen Langham, P.E.  
Energy Recovery Administrator

May 2, 2008

RANDALL Y. S. CHUANG, Chairman  
SAMUEL T. HATA  
ALAN J. PARK  
MARTIN J. HONOHIFI  
MARC C. TILNER

OSAGI NISHIMURA, Esq.  
BRENNON T. HONOKA, Esq.  
CLIFFORD P. LUM  
Manager and Chief Engineer  
DEAN A. NAKANO  
Deputy Manager and Chief Engineer

MUJI HANNEMANN  
MAYOR

REFUSE DIVISION  
1000 LUUOHUA STREET SUITE 212, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 692-5355 • FAX: (808) 692-5402 • WEBSITE: <http://www.co.honolulu.gov>



ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR

FRANK J. DOYLE, P.E.  
CHIEF

IN REPLY REFER TO:  
RH-08-029

May 28, 2008

TO: STEPHEN LANGHAM, P.E.  
DEPARTMENT OF ENVIRONMENTAL SERVICES  
REFUSE DIVISION, H-POWER

FROM: ~~KEITH S. SHIDA~~ <sup>MUJI HANNEMANN</sup> PROGRAM ADMINISTRATOR  
CUSTOMER CARE DIVISION

SUBJECT: YOUR LETTER DATED APRIL 23, 2008 ON THE DRAFT ENVIRONMENTAL  
ASSESSMENT FOR THE AIR POLLUTION CONTROL SYSTEM  
IMPROVEMENT PROJECT. IMK: 9-1-26-30

Thank you for the opportunity to comment on the proposed improvements at the H-POWER site.

The existing water system is presently adequate to accommodate the proposed improvements. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The proposed project is subject to Board of Water Supply cross-connection control and backflow prevention requirements prior to issuance of the Building Permit Application.

If you have any questions, please contact Robert Chun at 748-5443.

cc: Ms. Katherine Kealoha, Office of Environmental Quality Control  
Mr. Eric S. Takamura, Department of Environmental Services

Water for Life... Ka Wai Ola

**MEMORANDUM**

TO: KEITH S. SHIDA, PROGRAM ADMINISTRATOR  
BOARD OF WATER SUPPLY, CUSTOMER CARE DIVISION

FROM: STEPHEN LANGHAM, ENERGY RECOVERY ADMINISTRATOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES, REFUSE DIVISION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of May 2, 2008.

We acknowledge that the proposed project is subject to the Board of Water Supply cross-connection control and backflow prevention requirements prior to issuance of the Building Permit Application.

We also acknowledge that when water is made available, payment of Water System Facilities Charges is required for resource development, transmission and daily storage.

We thank the Board of Water Supply for participating in the environmental assessment review process.

DEPARTMENT OF PARKS AND RECREATION  
CITY AND COUNTY OF HONOLULU

1000 ULUOHA STREET, SUITE 309 • KAPOLEI, HAWAII 96707  
Phone: (808) 768-3003 • FAX: 768-3053 • Internet: www.co.honolulu.hi.us



May 5, 2008

MUFI HANNEMANN  
MAYOR

LESTER K. C. CHANG  
DIRECTOR  
GAIL Y. HARAGUCHI  
DEPUTY DIRECTOR

MUFI HANNEMANN  
MAYOR

DEPARTMENT OF ENVIRONMENTAL SERVICES  
CITY AND COUNTY OF HONOLULU

REFUSE DIVISION  
1000 ULUOHA STREET SUITE 212, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 922-5559 • FAX: (808) 922-5602 • WEBSITE: <http://www.co.honolulu.gov>



May 28, 2008

ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR  
FRANK J. DOYLE, P.E.  
CHIEF  
IN REPLY REFER TO:  
RH 08-028

Mr. Stephen Langham, P.E.  
Environmental Services, Refuse Division, H-POWER  
91-174 Hanna Street  
Kapolei, Hawaii 96707

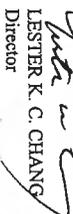
Dear Mr. Langham:

Subject: Draft Environmental Assessment  
H-POWER Air Pollution Control System Improvement Project

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the proposed H-POWER air pollution control system improvements.

The Department of Parks and Recreation has no comment and as the proposed project will not impact any program or facility of the department, you are invited to remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

  
LESTER K. C. CHANG  
Director

LKCC:jf  
(258689)

cc: Office of Environmental Quality Control  
Eric S. Takamura Ph.D., P.E., Director, Department of Environmental Services

**MEMORANDUM**

TO: LESTER K.C. CHANG, DIRECTOR  
DEPARTMENT OF PARKS AND RECREATION

FROM: STEPHEN LANGHAM, ENERGY RECOVERY ADMINISTRATOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES, REFUSE DIVISION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of May 5, 2008.

As the proposed project will not impact any program or facility of your department we will remove you as a consulted party to the balance of the EIS process.

We thank the Department of Parks and Recreation for participating in the environmental assessment review process.



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

STRATEGIC INDUSTRIES DIVISION  
235 South Beretania Street, Leleopaia A Kamehameha Bldg., 5<sup>th</sup> Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 922-2877  
Fax: (808) 586-2536  
Web site: www.hawaii.gov/dbedt

LETITIA LUTHEKE  
GOVERNOR  
THEODORE  
MARK K. ANDERSON  
DEPUTY DIRECTOR

May 19, 2008

City and County of Honolulu  
Environmental Services,  
Refuse Division, H-POWER  
91-174 Hanna Street  
Kapolei, HI 96707

Attn: Stephen Langham, P.E.

Re: Draft Environmental Assessment (EA)  
H-POWER Air Pollution Control System Improvement Project  
Tax Map Key: 1-9-026 - 030, 033, 034, and 035

RECEIVED  
H-POWER  
MAY 21 10 1:24

In response to your April 23, 2008, notice, thank you for the opportunity to provide comments on the Draft Environmental Assessment (EA) for the H-POWER Air Pollution Control System Improvement Project. We have no comments at this time other than to note that this project is being undertaken to comply with Federal Clean Air Act regulations (40CFR60 subpart Cb) relative to the control of certain pollutants.

Sincerely,

Theodore Peck  
Acting Administrator

cc: OBOC  
Katherine Kealoha  
Eric S. Takamura

REFUSE DIVISION  
1000 ULUOHA STREET SUITE 212 KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 682-5554 • Fax: (808) 992-5492 • WEBSITE: <http://www.co.honolulu.gov>

MUFI HANNEMANN  
MAYOR



May 28, 2008

Mr. Theodore Peck, Acting Administrator  
State of Hawaii - DBEDT  
Strategic Industries Division  
P.O. Box 2359  
Honolulu, HI 96804

Dear Mr. Peck,

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT.

Thank you for your comments of May 19, 2008.

We thank the Department of Business, Economic Development & Tourism for participating in the environmental assessment review process.

Sincerely,

Stephen Langham, P.E.  
Energy Recovery Administrator

ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR

FRANK J. DOYLE, P.E.  
CHIEF

IN REPLY REFER TO:  
RH 08-027

DEPARTMENT OF FACILITY MAINTENANCE  
**CITY AND COUNTY OF HONOLULU**  
1000 Uluohia Street, Suite 212, Kapolei, Hawaii, 96707  
Phone: (808) 768-3343 • Fax: (808) 768-3381  
Website: www.honolulu.gov



RECEIVED  
H-POWER

2008 MAY 27 3:10

CRAIG I. NISHIMURA, P.E.  
DIRECTOR AND CHIEF ENGINEER  
GEORGE KESKI, MIVAMOTO  
DEPUTY DIRECTOR  
IN REPLY REFER TO:  
DRM 08-429

MUFI HANEMANN  
MAYOR

DEPARTMENT OF ENVIRONMENTAL SERVICES  
**CITY AND COUNTY OF HONOLULU**

REFUSE DIVISION  
1000 ULUOHIA STREET SUITE 212, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 692-5358 • Fax: (808) 692-5402 • WEBSITE: <http://www.co.honolulu.gov>



ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR  
FRANK J. DOYLE, P.E.  
CHIEF  
IN REPLY REFER TO:  
RH 08-026

Mr. Stephen Langham  
Environmental Services  
Refuse Division, H-Power  
91-174 Hanua Street  
Kapolei, Hawaii 96707

Dear Mr. Langham:

Subject: Draft Environmental Assessment (DEA)  
Air Pollution Control System Improvements Project  
Solid Waste to Energy, H-Power  
Ewa/Kapolei, TMK:1-9-026-030, 033, 034 & 035

Thank you for the opportunity to review and comment on the DEA dated April 2008 for the proposed air pollution control system improvements to the solid waste to energy H-Power facility.

We have no comments to offer as the improvements are within the H-Power facility property and will have negligible impact on our facilities and operations.

During construction activities, the contractor shall provide best management practices to prevent dirt, mud and other debris from the construction site being tracked and deposited onto adjacent City roadways.

Should you have any questions, please call Charles Pignataro of the Division of Road Maintenance, at 788-3697.

Sincerely,

Craig I. Nishimura, P.E.  
Director and Chief Engineer

c: Office of Environmental Quality Control  
Department of Environmental Services

May 28, 2008

**MEMORANDUM**

TO: CRAIG I. NISHIMURA, DIRECTOR AND CHIEF ENGINEER  
DEPARTMENT OF FACILITY MAINTENANCE

FROM: STEPHEN LANGHAM, ENERGY RECOVERY ADMINISTRATOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES, REFUSE DIVISION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of May 22, 2008.

We will ensure that during construction activities the contractor shall provide best management practices to prevent dirt, mud and other debris from the construction site being tracked and deposited onto adjacent City roadways.

We thank the Facility Maintenance department for participating in the environmental assessment review process.



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

May 27, 2008



RECEIVED  
H-POWER  
MAY 28 P 3 11

Environmental Services  
Refuse Division, H-POWER  
91-174 Hanna Street  
Kapolei, HI 96707

Attention: Mr. Stephen Langham, P.E.

Dear Mr. Langham:

SUBJECT: Draft Environmental Assessment – H-Power – Air Pollution Control  
System Improvement Project – Ewa/Kapolei Districts, Oahu;  
TMK: (1) 1-9-026: 030, 033, 034, and 035

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from (a) Engineering Division, (b) Commission on Water Resources, and (c) Oahu District office of the Land Division on the subject matter. Should you have any questions, please feel free to call my office at 587-0433. Thank you.

Sincerely,

Morris M. Atta  
Administrator

Enclosures  
cc: Ms. Katherine Kealoha, Interim Director (w/copies)  
Office of Environmental Quality Control  
Mr. Eric S. Takamura, Director (w/copies)  
Environmental Services

CITY AND COUNTY OF HONOLULU

1900 ULUKOHA STREET, SUITE 112, HONOLULU, HI 96815  
TELEPHONE: (808) 992-5356 • FAX: (808) 992-5492 • WEBSITE: <http://www.co.honolulu.gov>

MUJI HANNEWMAN  
MAYOR



May 29, 2008

ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR  
FRANK J. DOYLE, P.E.  
CHIEF  
IN REPLY REFER TO:  
RH 08-032

Mr. Morris M. Atta, Administrator  
State of Hawaii  
Department of Land and Natural Resources  
Land Division  
P.O. Box 621  
Honolulu, HI 96809

Dear Mr. Atta:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of May 27, 2008.

We thank the Department of Land and Natural Resources for participating in the environmental assessment review process.

Sincerely,

Stephen Langham, P.E.  
Energy Recovery Administrator



RECEIVED  
H - POWER



2008 MAY 28 P 3 1 STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

May 2, 2008

MEMORANDUM

TO: DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Div. of Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - (Oahu District office)

RECEIVED  
LAND DIVISION  
2008 MAY 22 P 2:45

FROM: Morris M. Atta *M. Atta*  
SUBJECT: Draft of Environmental Assessment - H-Power  
LOCATION: Ewa/Kapolei Districts, Oahu; TMAK: (1) 1-9-026: 030, 033, 034, and 035  
APPLICANT: City & County of Honolulu, Environmental Services Department, Refuse Division

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 21, 2008.  
*A copy of the CD is available for your review in Land Division office, Room 220.*  
If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Eric T. Hiran*  
Date: *5/22/08*

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

LD/MorrisAtta  
Ref: DEAHPowerEwa/Kapolei  
Oahu,613

COMMENTS

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone \_\_\_\_\_.
- Please take note that based on the map the you provided, the project site according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone D. The National Flood Insurance Program does not have any regulations for developments within Zone D. Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is \_\_\_\_\_.
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol 'Yau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.
- Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:
  - Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
  - Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
  - Mr. Francis Cerzo at (808) 270-7771 of the County of Maui, Department of Planning.
  - Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

- The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.
- The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

Additional Comments: \_\_\_\_\_

Other: \_\_\_\_\_

Should you have any questions, please call Ms. Suzie S. Agran of the Planning Branch at 587-0258.

Signed: *Eric T. Hiran*  
ERIC T. HIRANO, CHIEF ENGINEER  
Date: *5/22/08*



RECEIVED H-POWER



RECEIVED LAND DIVISION

2008 MAY 28 P 3:18  
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809  
May 2, 2008

MEMORANDUM

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Div. of Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - (Oahu District office)

*From:*

FROM: Morris M. Atta *M. Atta*

SUBJECT: Draft of Environmental Assessment - H-Power  
LOCATION: Ewa/Kapolei Districts, Oahu; TMK: (1) 1-9-026-030, 033, 034, and 035  
APPLICANT: City & County of Honolulu, Environmental Services Department, Refuse Division

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 21, 2008.

*A copy of the CD is available for your review in Land Division office, Room 220.*

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*  
Date: 5/15/08

cc: Central Files



RECEIVED H-POWER



2008 MAY 28 P 3:18  
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809  
May 2, 2008

MEMORANDUM

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Div. of Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - (Oahu District office)

*From:*

FROM: Morris M. Atta *M. Atta*

SUBJECT: Draft of Environmental Assessment - H-Power  
LOCATION: Ewa/Kapolei Districts, Oahu; TMK: (1) 1-9-026-030, 033, 034, and 035  
APPLICANT: City & County of Honolulu, Environmental Services Department, Refuse Division

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 21, 2008.

*A copy of the CD is available for your review in Land Division office, Room 220.*

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*  
Date: 5/15/08

cc: Central Files

MUFI HANNEMANN  
MAYOR



HENRY ENG, FAICP  
DIRECTOR  
DAVID K. TANOUÉ  
DEPUTY DIRECTOR

2008/ELOG-1005 (mw)

May 21, 2008

**MEMORANDUM**

**TO:** STEPHEN LANGHAM, REFUSE DIVISION  
DEPARTMENT OF ENVIRONMENTAL SERVICES

**FROM:** HENRY ENG, FAICP, DIRECTOR  
DEPARTMENT OF PLANNING AND PERMITTING

**SUBJECT:** DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER AIR  
POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

In response to your letter of April 23, 2008, we request the following clarifications or corrections:

- A building permit may be required for the construction of the bag house. Please contact Tim Hiu, Chief of DPP's Building Division on this, and revise page 7-1 as necessary. According to Mr. Hiu, a building permit is likely to be required at least for the foundation work, and might also be required for the structure itself.
- Please state the height of the proposed bag house structure.
- Describe in detail the scope of the proposed grading, grubbing, and trenching work.
- Section 4.3 should also include Best Management Practices for Ingress/Egress. Please add a zoning map showing the zoning of the parcels and the surrounding area.
- For clarity, use standard numbering systems throughout the report. Renumber the pages as per your table of contents; renumber the figures sequentially within each section; and number and highlight all sub-section headings so that they are not confused with minor headings within that sub-section.
- The report should be proofread carefully. For example, page 2-2 does not quote the property's zoning of "1-2 Intensive Industrial District" correctly, and there is a duplicate paragraph on page 18.

Stephen Langham, Refuse Division  
Department of Environmental Services  
May 21, 2008  
Page 2

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Mike Watkins of our staff at 768-8044.

HE:js

p:\Dv\Function\EA-EIS\2008\2008ELOG1005.doc

cc: Office of Environmental Quality Control  
Director, Department of Environmental Services

CITY AND COUNTY OF HONOLULU

REFUSE DIVISION  
1000 ULUOHA STREET SUITE 212, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 882-5358 • FAX: (808) 882-5402 • WEBSITE: <http://www.co.honolulu.gov>



KUFI HANNEMANN  
MAYOR

ERIC S. TAKAMURA, Ph.D., P.E.  
DIRECTOR  
FRANK J. DOYLE, P.E.  
CHIEF  
IN REPLY REFER TO:  
RH 09-025

June 2, 2008

MEMORANDUM

TO: HENRY ENG, FAICP DIRECTOR  
DIRECTOR OF PLANNING AND PERMITTING

FROM: STEPHEN LANGHAM, ENERGY RECOVERY ADMINISTRATOR  
DEPARTMENT OF ENVIRONMENTAL SERVICES, REFUSE DIVISION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE H-POWER  
AIR POLLUTION CONTROL SYSTEM IMPROVEMENTS PROJECT

Thank you for your comments of May 21, 2008. Kindly be advised:

1. The building permit requirement was discussed in a meeting with your staff on March 28, 2008 and in emails to Tim Hiu and Jon Kurio. It was agreed the structure is not occupied and therefore will not require a building permit. We are however proceeding to develop and submit clearing, grubbing, grading and excavation permit application packages and are including a foundations package as well.

Relative to items 2 and 3, there is generally a question as to the level of design necessary to support an Environmental Assessment. However, as the APCSIP is a federal mandate and is being pursued on a fast track, the level of design is currently advanced well beyond that level of detail normally performed for an EA. In fact, permit drawings have been developed for cleaning and grubbing and grading permits; for foundations although it is not anticipated that a building permit is required (see item 1 above); and, state issued storm water permits, NPDES (NO-B and NO-C). These drawings as enumerated below are attached and are included in Appendix A of the Final EA as enclosures to this response letter.

2. The bag house structure is in final design and is anticipated to be 90 feet high. It will be elevated on steel legs, approximately 25 feet above existing grade. Arrangement drawings with elevations are attached (M-201 Rev A, M-202 Rev A, and M-210 Rev A, all preliminary).

Henry Eng  
June 2, 2008  
Page 2

3. Proposed grading, grubbing and trenching work is described on general arrangement drawings as follows:
 

Site Plan	C-001 Rev B
Grading Plan	C-002 Rev A
Demolition Plan	C-005 Rev B
Foundation Plan	S-101 Rev A (typical)

4. Relative to ingress/egress, this is a piece of mechanical equipment, not an occupiable building. Maintenance ladders and platforms are as outlined on the general arrangement drawings and will be fully designed by the various vendors including the baghouse filter manufacturer, the mechanical conveyor system supplier, and the architect engineer in full compliance with OSHA (29 CFR) and the American National Standards Institute (ANSI) for ladders, caged ladders, stairs and platforms.

5. Figure 2.1-1 is the Long Range Master Plan for Kāpōlei which details the zoning. Figure 2.2-2 depicts the neighboring parcels. Figure 2.2-3 details the parcel zoning for a 1-mile radius.

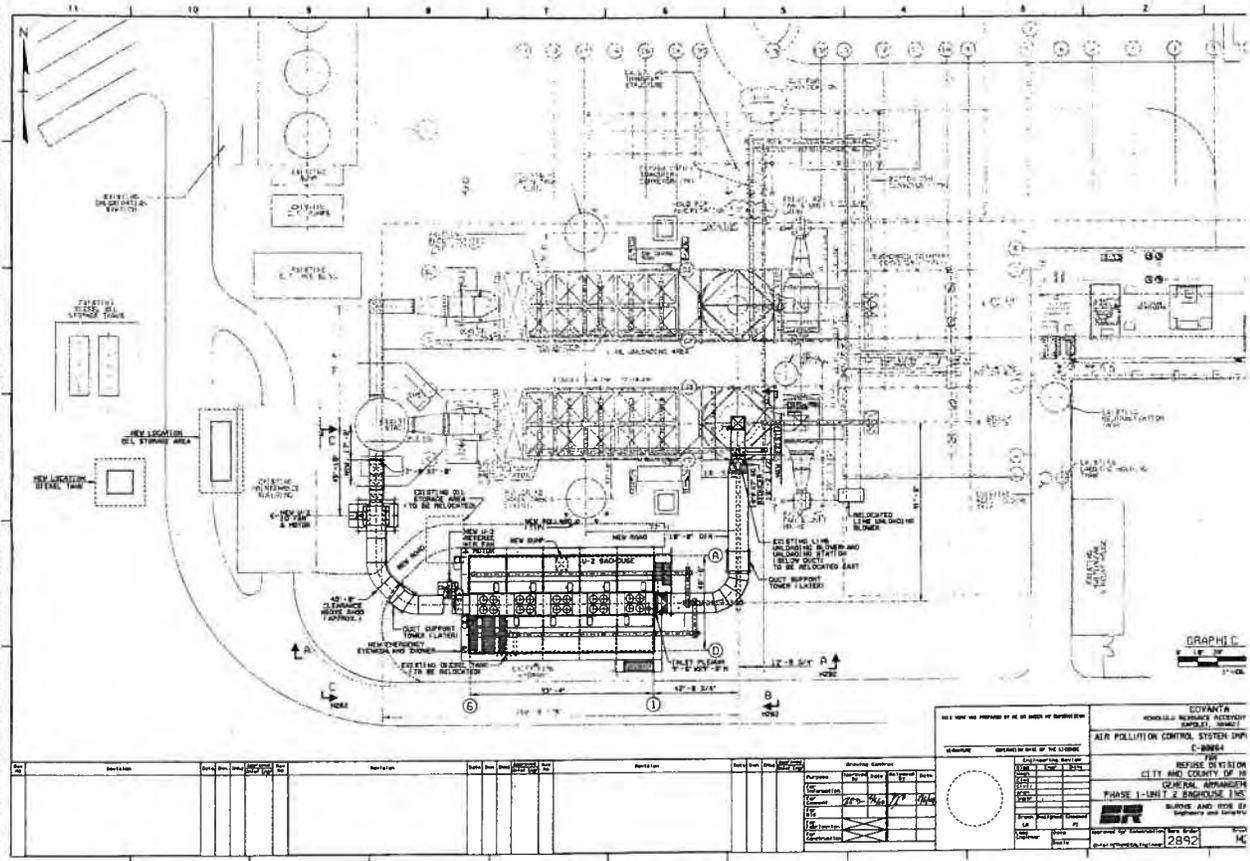
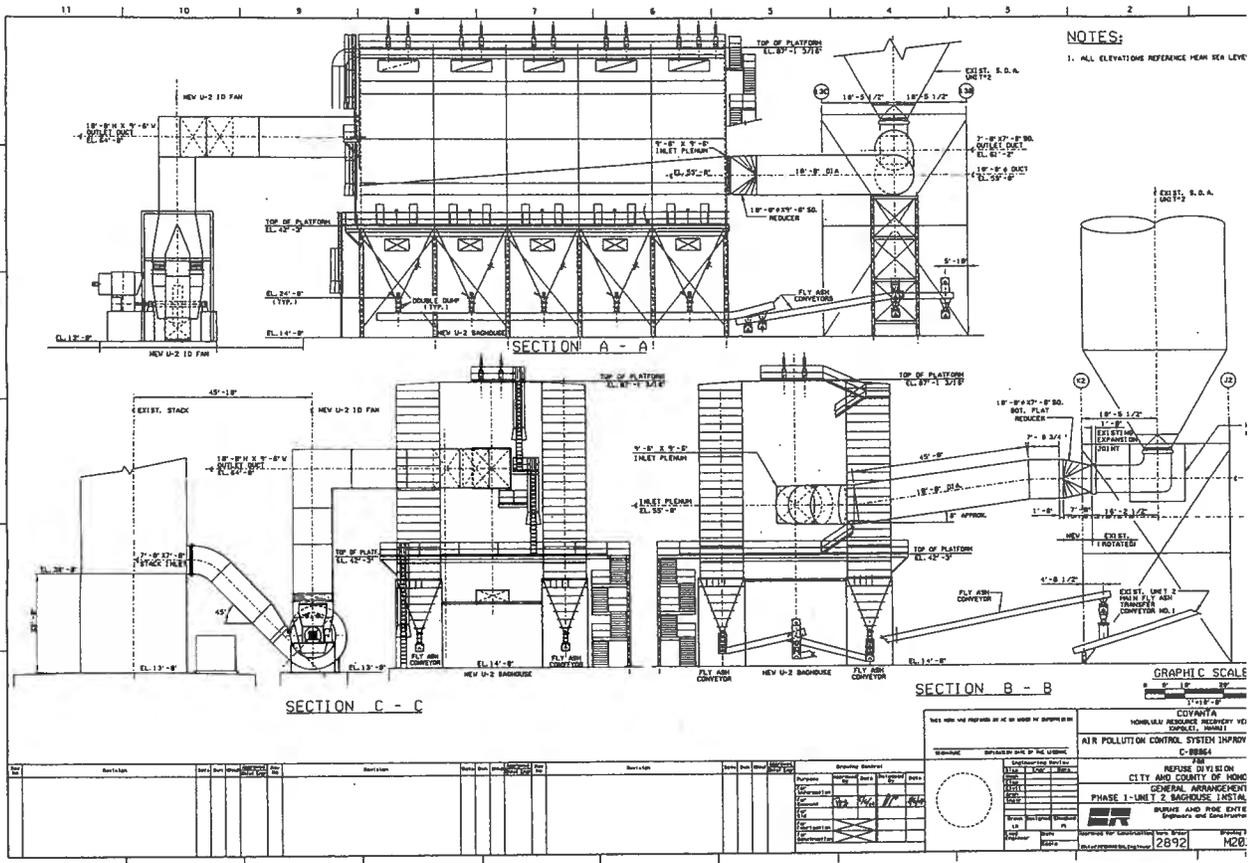
- 6 & 7. The numbering and proof reading suggestions are valid and will be corrected in the Final EA.

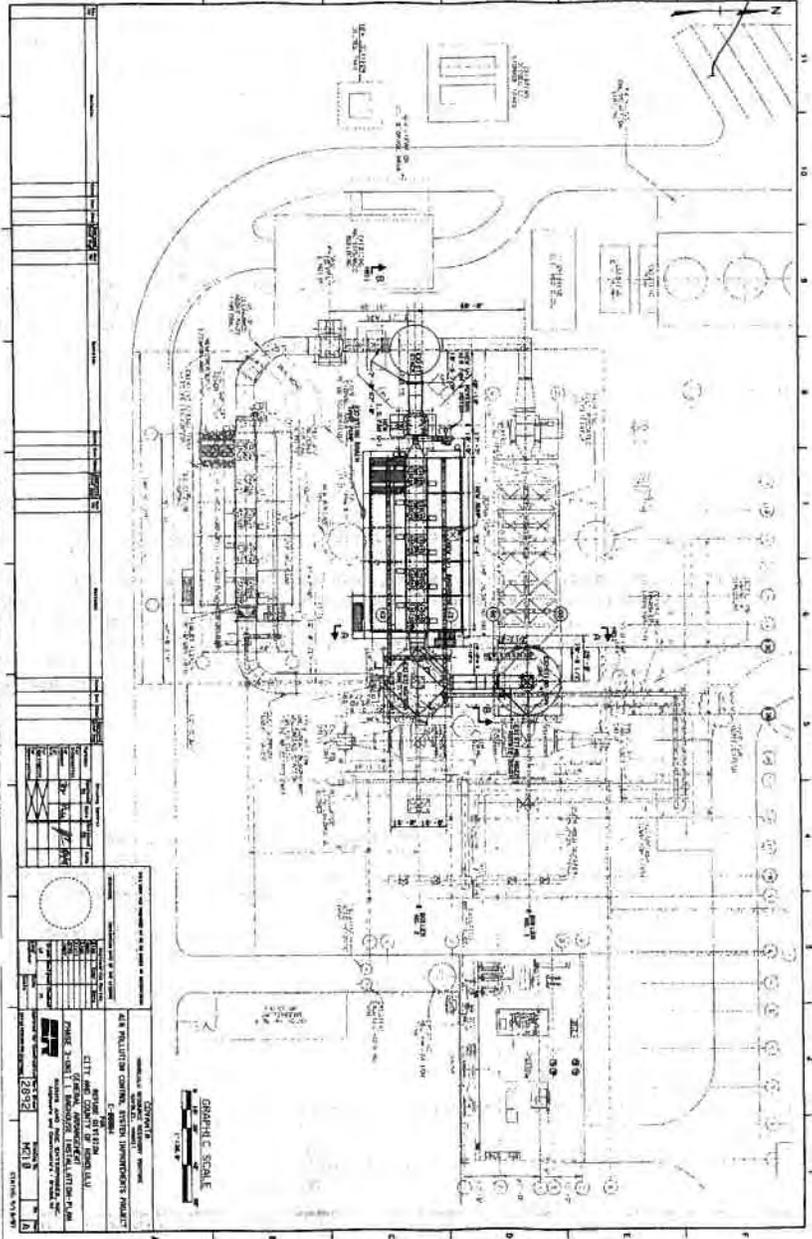
Thank you again for your comments and the time your staff provided us.

Attach.









<p>DATE: 11/15/2011          DRAWN BY: [Name]          CHECKED BY: [Name]          PROJECT: [Project Name]</p>	
<p>PROJECT: [Project Name]          CLIENT: [Client Name]          ADDRESS: [Address]          CITY: [City]          STATE: [State]          ZIP: [ZIP Code]</p>	
<p>DESIGNER: [Designer Name]          ARCHITECT: [Architect Name]          LICENSE NO.: [License No.]          EXPIRES: [Expiration Date]</p>	
<p>SCALE: 1/8" = 1'-0"</p>	

CITY AND COUNTY OF [City Name]  
 PLANNING DEPARTMENT  
 1234 [Address]  
 [City Name], [State] [ZIP Code]  
 PHONE: [Phone Number]  
 FAX: [Fax Number]  
 WWW: [Website]

**Langham, Stephen F**

---

**From:** Langham, Stephen F  
**Sent:** Monday, April 14, 2008 9:13 AM  
**To:** Kurio, Jon; Hiu, Timothy F. T.  
**Cc:** Doyle, Frank; 'Druckman,Herb'  
**Subject:** FW: H-POWER Air Pollution Control Systems Improvement Project, Draft EA, Pre submission meeting

Jon;

Enclosed are the notes of conference from the pre submittal meeting on the draft EA for the Air Pollution Control Project at H-POWER.

I am also forwarding my e-mail of 3/28.

As per our conversation, the APC Systems project is a public works project being undertaken by the City. It is a large mechanical filter. It is not a building. There is maintenance access but it is not occupy-able.

Therefore, we agree, the project is exempt from building permit requirements as per 18.3.1 (b) (21) of the revised City Ordinance.

Thanks;

Steve

---

**From:** Langham, Stephen F  
**Sent:** Monday, April 07, 2008 1:49 PM  
**To:** Langham, Stephen F; Sakamoto, Judith J.; Eng, Henry; Doyle, Frank; Namumnart, Wilma; Colobong, Rosalinda; Kane, Valerie M; Young, Raymond C. S.; Bannister, Robert H.; Fujii, Don; Watkins, Mike L.  
**Cc:** 'Druckman,Herb'; 'Smith,Rodney'; 'csoon@ssfm.com'; 'gkashiwabara@covantaenergy.com'  
**Subject:** RE: H-POWER Air Pollution Control Systems Improvement Project, Draft EA, Pre submission meeting

Thanks all for accommodating us last Friday. Attached are the notes.

Steve



DPP meeting  
notes.doc (43 KB)

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**From:** Langham, Stephen F  
**Sent:** Friday, April 04, 2008 12:11 PM  
**To:** Sakamoto, Judith J.; Eng, Henry; Doyle, Frank; Namumnart, Wilma; Colobong, Rosalinda; Kane, Valerie M  
**Cc:** 'Druckman,Herb'; 'Smith,Rodney'; 'csoon@ssfm.com'; 'gkashiwabara@covantaenergy.com'  
**Subject:** H-POWER Air Pollution Control Systems Improvement Project, Draft EA, Pre submission meeting

Ladies and Gentleman;

Attached please find an agenda for today's meeting and an advance copy of the hand-out.

Mahalo Nui Loa,

Stephen Langham, PE  
Energy Recovery Administrator  
H-POWER

**Langham, Stephen F**

**From:** Langham, Stephen F  
**Sent:** Monday, April 14, 2008 9:15 AM  
**To:** Kurio, Jon  
**Subject:** FW: H-POWER Air Pollution Control System Improvement Project

**From:** Langham, Stephen F  
**Sent:** Friday, March 28, 2008 10:03 AM  
**To:** Hiu, Timothy F, T  
**Subject:** FW: H-POWER Air Pollution Control System Improvement Project

Fm,

have not been able to make contact with Jon. Gus in Kapolei Hale suggested I contact you.  
am putting together the EA for this project and do wish to confirm, that as a City Public Works undertaking we are indeed  
Exempt from a building permit.

Thanks,  
Steve

**From:** Langham, Stephen F  
**Sent:** Monday, March 17, 2008 2:54 PM  
**To:** Kurio, Jon  
**Cc:** Namummat, Wilma; Doyle, Frank; 'Druckman, Herb'  
**Subject:** H-POWER Air Pollution Control System Improvement Project

am the City's administrator at H-POWER. We have a \$38,000,000 modification project underway. The City's contractor,  
Covanta Energy, is responsible for the design and construction. The project is basically to replace the existing electrostatic  
filters with bag type mechanical filters. The project is necessitated by a change in law under the Clean Air Act for reduced  
emissions at large municipal waste combustors such as H-POWER.

am attaching some summary information that may help you understand the project. I am also forwarding a lay out  
drawing under separate cover.

As I understand the City Ordinance, specifically Chapter 18, Article 3 section 3.1 (b) 21, we may be exempt from a building  
permit as the project is a Public Works project being undertaken on behalf of the City. It is not an occupied building but  
rather a large piece of mechanical equipment.

The equipment sits on isolated pier type footings.

There is electrical power distribution to the equipment.

The equipment connects between the boiler and the smokestack with duct work.

There is ash conveyors which remove the captured particulate matter.

There is a control system which interfaces with the plant computer.

am in the process of engaging a full time CM/Inspectional Services firm to assist me manage the project.

There is an associated laydown area where Parsons will set up shop. I believe again this is exempt from a building permit  
under 18.3.1 (b) (2).

I was referred to you for confirmation that in fact we are exempt.

Feel free to contact me if you have any questions

Mahalo Nui Loa,

Stephen Langham, PE  
Energy Recovery Administrator  
H-POWER  
91-174 Hanua St.  
Kapolei, HI 96707  
808-682-1359  
808-682-0715 fax  
808-722-5189 cell

[slangham@honolulu.gov](mailto:slangham@honolulu.gov)



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KB)

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**Sent:** Monday, April 14, 2008 9:13 AM  
**To:** Kurjo, Jon; Hiliu, Timothy F, T.  
**Cc:** Doyle, Frank; 'Druckman, Herb'  
**Subject:** H-POWER Air Pollution Control Systems Improvement Project, Draft EA, Pre submission meeting

Jon:

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Thanks:

Steve

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**To:** Langham, Stephen F; Sakamoto, Judith J.; Eng, Henry; Doyle, Frank; Nannumart, Wilma; Colobong, Rosalinda; Kane, Valerie M.; Young, Raymond C. S.; Bannister, Robert H.; Fujii, Don; Watkins, Mike L.  
**Cc:** 'Druckman, Herb'; 'Smith,Rodney'; 'csoon@ssfm.com'; 'gkashwabaracovantaenergy.com'  
**Subject:** RE: H-POWER Air Pollution Control Systems Improvement Project, Draft EA, Pre submission meeting

Thanks all for accommodating us last Friday. Attached are the notes.

Steve



DPP meeting notes.doc (43 kB)

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**Cc:** 'Druckman, Herb'; 'Smith,Rodney'; 'csoon@ssfm.com'; 'gkashwabaracovantaenergy.com'  
**Subject:** H-POWER Air Pollution Control Systems Improvement Project, Draft EA, Pre submission meeting

Ladies and Gentlemen:

Attached please find an agenda for today's meeting and an advance copy of the hand-out.

Mahalo Nui Loa,

Stephen Langham, PE  
Energy Recovery Administrator  
H-POWER

9/1-1/4 Raiua Ct.  
Kapolei, HI 96707

808-682-1359  
808-682-0715 fax  
808-722-5189 cell

slangham@honolulu.gov

<< File: DPP agenda.doc >> << File: DPP presubmit consult.ppt >>

Notes of Discussion-Draft EA  
Air Pollution Control  
Systems Improvement Project

Friday, April 4, 2008  
FAST Building, 8 th floor, 3 PM

CHRRV:

Refuse Division: Frank Doyle, Chief Engineer (pt) Rodney Smith, Business Manager  
Steve Langham, H-POWER Cheryl Soon, SSFM (pt)

DPP:

Don T. Fugli, Site Development Division, Civil Engineering Branch  
Ray Young, DPP, Planner  
Bob Bannister, Land Use Planning Division, Chief  
Mike Watkins, Planning

Purpose: 1) Satisfy pre submittal consultation provision of HAR 11-200-9(a) (1)  
2) Establish list of DPP required permits

Goal: 1) Submit draft EA to OEQC by 4/11 for 4/23 publication  
2) Obtain DPP cooperation to support 6/16 start of Construction  
3) Establish Building Permit Exemption

Discussion Items:

1. Project Overview

Refuse Division provided project back ground information including the Clean Air Act provision (Sections 129 and 111 d) which requires USEPA to periodically review actual air emissions control system performance and as based on demonstrated control technology performance, promulgate revised emissions guidelines including those applicable to existing air emissions sources such as H-POWER. Accordingly, USEPA has promulgated 40 CFR 60 sub part Cb applicable to large Municipal Waste Combustors constructed prior to Sept 1994. These revised Emissions Guidelines, EGs, lower the permissible amounts of particulate matter, organic compounds including dioxins and furans, and heavy metals including mercury.

The EPA also established time lines for compliance, 40 CFR 62 subpart FFF.

The City, after prudent review, decided it would be necessary to improve the air pollution control at H-POWER, replacing the existing Electro Static Precipitator based filtering technology with a new technology based on mechanical filters

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employing tightly woven fiberglass filter bags, bag houses and so notified USEPA. Compliance as established pursuant to 40 CFR 62 requires this selection which the City did in March 2007 (Control Plan), that a contract be awarded which the City did in February 2008, that the City commence construction in June of 2008, complete that construction by October 2010 and demonstrate compliance with six months of operating data by April 2011. The current key date is the start of construction in June, which will require that permits be in place. This date is necessary to support continued operation of H-POWER as the baghouses must be phased in, building one first in the reserved future third boiler space, connecting it during a 23 day outage, demolishing the replaced ESP and then repeating the process for the second unit. It is critical as:

- H-POWER disposes of 60% of the City's MSW
- H-POWER generates \$50,000,000 of City revenue

The Project is a \$50,000,000 CIP. \$40,000,000 has been appropriated in the FY-08 capital budget. A \$10,000,000 additional appropriation has been requested for FY-09.

DPP's cooperation is paramount to the success of the Project both in defining the required permits, supporting the EA and expediting permit review to facilitate the June start of construction.

ENV did consider a categorical exemption from an EA as the mechanical filter is basically a replacement with out any change in thru put or energy generation. However use of the adjacent three City owned parcels, TMK 1-9-026- 0233, 034 and 035, is a new use using City land and City funds. Therefore we are submitting an EA.

2. Environmentally Sensitive Items

An eight acre portion of the three adjacent City owned parcels totaling 17 acres are planned to be used for construction staging requiring clearing, grubbing, leveling with parking and construction office and shop space, storage and room for pre assembly.

The northern most parcel, 035, projects into a Special Management Area, SMA in a small area that extends west of the Kaomi Loop cul de sac. This area will not be developed.

There are 3 established plant sanctuary areas. They will be protected including maintenance of existing fencing and addition of a buffer zone.

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There are sink holes in parcel 035. Iwi is reported to have been discovered in sink holes proximate to this parcel. Use of this parcel will be limited. If cultural resources are encountered, work will cease and SDHP will be notified.

There is an existing drainage easement which will have to be culverted for construction of an access road to H-POWER. Drainage will be maintained.

Because these impacts can be mitigated as described and because the net effect of the filter upgrade is a reduction in emissions with a reduced threat to human health, a FONSI is expected.

3. Expected DPP permits and expedited review to support 6/16/2008 mobilization

A clearing and grubbing permit is expected as threshold area of disturbance will be exceeded.

A grading permit is expected as threshold quantity of earth work will be exceeded.

A trenching permit will only be necessary if Kaomi Loop must be opened and it is established that it is a City maintained road. To determine if City maintained, contact DDC, Land Division, 12 th floor.

A SMA permit will not be required as long as we avoid that area.

A Conditional Use Permit will not be required.

A Stream Channel Alteration permit should not be required. It is a State level permit issued by DLNR. We will need concurrence from the entity to whom the drainage easement was issued.

A height variance was discussed but the new bag houses should not exceed the height of the existing ESP or surrounding structures.

With respect to expedited permitting, DPP advised us to put in a complete and quality submittal.

4. Building Permit

We were referred to Tim Hin, Chief Engineer, Building Division or Art Challacombe Customer Service Office for determination if we were exempted from building permit requirements per Honolulu City Ordinance 18.3.1 b2 and b21.

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5. Coordination w/ other Agencies

Covanta/SSFM

We briefed DPP on the following:

DOH Clean Air minor mod of CSP filed  
DOH Clean Water NOI-C and General to be filed  
Solid Waste ? on minor mod to Solid Waste permit, Covanta to investigate

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