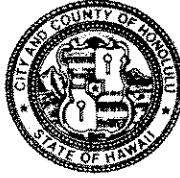


DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov



MUFI HANNEMANN
MAYOR

WAYNE M. HASHIRO, P.E.
DIRECTOR

EUGENE C. LEE, P.E.
DEPUTY DIRECTOR

WW.PDE 05-226

November 10, 2005

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

RECEIVED
705 NOV 10 AM 5:51
OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

Dear Ms. Salmonson:

Subject: Notice of Determination – Finding of No Significant Impact
Soil Management Project, Sand Island Wastewater Treatment Plant,
Honolulu, Hawaii, TMK 1-5-41:005

The City and County of Honolulu, Department of Design and Construction has reviewed the responses to comments related to the Draft Environmental Assessment received during the 30-day public comment period that began on September 23, 2005. The agency has determined that this project will not have significant environmental effects and has issued a Finding of No Significant Impact. Please publish this notice in the next edition of *The Environmental Notice*.

We have enclosed the following items for your review:

- (1) One copy of the OEQC Environmental Notice Publication Form;
- (2) Four copies of the Final EA

The following information is provided in accordance with the requirements for a Notice of Determination:

Identification of Applicant

City and County of Honolulu, Department of Design and Construction

Identification of Accepting Agency

City and County of Honolulu, Department of Design and Construction

Determination

Finding of No Significant Impact (FONSI)

Reasons Supporting Determination

This determination is based on the significance criteria listed in Section 11-200-12 of the Environmental Impact Statement Rules:

1. The proposed project will not involve an irrevocable commitment to loss or destruction of any natural or cultural resources.

Act 50, enacted by the Legislature of the State of Hawaii (2000) requires state agencies and other developers to assess the effect of proposed land use or shoreline developments on the “cultural practices of the community and State as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, “to promote and protect cultural beliefs, practices and resources of native Hawaiians and other ethnic groups, and it also amends the definition of ‘significant effect’ to be re-defined as “the sum of effects on the quality of the environment including actions that are...contrary to the State’s environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State” (H.B. 2895, Act 50, 2000).

As suggested in the “Guidelines for Assessing Cultural Impacts” (OEQC 1997), consultation with organizations familiar with cultural practices and features associated with the project area is permissible in the process of determining the project’s impacts on cultural practices in the area. According to the OEQC (1997), a “good faith effort” is required to investigate the potential cultural impact on a property. In the case of the present site, limited archival research was conducted, and copies of the Draft Environmental Assessment were sent to the Oahu Office of Hawaiian Affairs and the State Historic Preservation Division. The responses obtained, included in Appendix H, provide a good faith level of effort.

2. The proposed project will not curtail the range of beneficial uses of the environment. The project will be located within the existing Sand Island Wastewater Treatment Plant, designated for industrial uses.
3. The proposed project will not conflict with the state’s long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.
4. The proposed project will not have a substantial negative effect on the economic or social welfare of the community or state. The project will not have a long term impact on employment or economics. The impact on social welfare will be positive since the proposed project will enhance wastewater service for the community.
5. The proposed project will not substantially affect public health (in a negative manner). Rather, the project will improve existing conditions and eliminate the possibility of exposure to the public by providing a protective barrier over on-site low-level contamination.

Ms. Genevieve Salmonson

Page 3

November 10, 2005

6. The proposed project does not involve substantial secondary impacts, such as effects on public facilities (in a negative manner). Rather, it will enhance wastewater services.
7. The proposed project does not involve a substantial degradation of environmental quality. The proposed project will include engineering controls that will reduce soil erosion and sediment runoff, and prevent degradation of air, land, and water.
8. The proposed project does not have considerable cumulative effect upon the environment, and no larger commitment is required for the proposed project.
9. The proposed project will not substantially affect rare, threatened, or endangered species, or their habitat since there are none present within the project site or surrounding area.
10. The proposed project will not detrimentally affect air or water quality or ambient noise levels. The potential impacts and mitigation measures have been addressed in the appropriate sections of the EA.
11. The proposed project will not affect, nor is it likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, coastal waters. The proposed action is consistent with ROH, Chapter 25, Section 3.2 and is not anticipated to: restrict access to beaches, recreation areas, and natural reserves; alter existing land forms; or block scenic views and vistas. The proposed action is located within the Special Management Area (SMA) and a Major SMA Use Permit will be filed as part of the proposed action.
12. The proposed project will not substantially affect scenic vistas or viewplanes identified in county or state plans or studies. The proposed stockpile will raise the ground surface from four to ten feet, but will not exceed the height of surrounding structures.
13. The proposed project will not require substantial additional energy.

Should you have any questions, please contact Ms. Denise Wong at 527-5151.

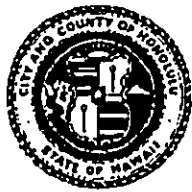
Very truly yours,



WAYNE M. HASHIRO, P.E.
Director

Enclosure

*Final Environmental Assessment
Soil Management Project
Sand Island Wastewater Treatment Plant,
Honolulu, Hawai'i*



*Applicant:
City and County of Honolulu
Department of Design and Construction*

*Accepting Authority:
City and County of Honolulu
Department of Design and Construction
c/o
Office of Environmental Quality Control
236 So. Beretania St., Suite 702
Honolulu, Hawai'i 96813*

Prepared by:

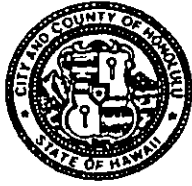


November 2005

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CITY AND COUNTY OF HONOLULU

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WW.PDE 05-226

November 10, 2005

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Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
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Soil Management Project, Sand Island Wastewater Treatment Plant,
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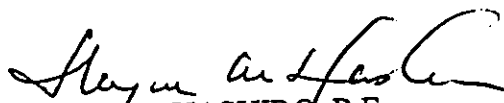
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Ms. Genevieve Salmonson
Page 3
November 10, 2005

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Very truly yours,


WAYNE M. HASHIRO, P.E.
Director

Enclosure

NOV 23 2005

FILE COPY

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

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FINAL ENVIRONMENTAL ASSESSMENT

**SAND ISLAND WASTEWATER TREATMENT PLANT SOIL
MANAGEMENT PROJECT**

SAND ISLAND, O'AHU, HAWAI'I

TMK: 1-5-041:005 (PORTION OF)

APPLICANT:

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF DESIGN AND CONSTRUCTION

ACCEPTING AUTHORITY:

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF DESIGN AND CONSTRUCTION

C/O

OFFICE OF ENVIRONMENTAL QUALITY CONTROL
236 SOUTH BERETANIA STREET, SUITE 702
HONOLULU, HAWAI'I 96813

November 2005

Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

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Appendix B	Phase I Environmental Site Assessment, Sand Island Wastewater Treatment Plant, November 2003
Appendix C	Soil Management Plan, Sand Island Wastewater Treatment Plant, December 2003
Appendix D	Remedial Design Report, Soil Management Project, Sand Island Wastewater Treatment Plant, September 2005
Appendix E	Flood Zone Documentation
Appendix F	Special Management Area Permit Documentation
Appendix G	Pre-Consultation Letters and Responses
Appendix H	<u>Draft EA Comments and Responses</u>

Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CCH	City and County of Honolulu
CZM	Coastal Zone Management
DDC	Department of Design and Construction
DPP	Department of Planning and Permitting
EA	Environmental Assessment
EI	Environet, Inc.
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
FIRM	Flood Insurance Rate Map
FL	Mixed Fill Land
FONSI	Finding of No Significant Impact
HAR	Hawai'i Administrative Rules
HDOH	State of Hawai'i Department of Health
HHRA	Human Health Risk Assessment
HRS	Hawai'i Revised Statutes
NPDES	National Pollutant Discharge Elimination System
LUC	Land Use Commission
LUO	Land Use Ordinance
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
PCB	Polychlorinated Biphenyl
ppm	parts per million
PRG	Preliminary Remediation Goal
PUC	Primary Urban Center
RMTC	R.M. Towill Corporation
SHPD	State Historic Preservation Division
SMA	Special Management Area
SMP	Soil Management Plan
TMK	Tax Map Key
TSCA	Toxic Substances Control Act
UIC	Underground Injection Control
USDA	United States Department of Agriculture
WWTP	Wastewater Treatment Plant

Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

PROJECT SUMMARY

The following summary describes the project location, existing entitlements and proposed actions.

Project Name: Sand Island Wastewater Treatment Plant Soil Management Project

Applicant: The City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, HI 96813
Contact: Ms. Denise Wong
(808) 527-5151

Agent: Environet, Inc.
2850 Pa'a Street, Suite 212
Honolulu, HI 96819
Contact: Colette Sakoda
(808) 833-2225

Accepting Authority: The City and County of Honolulu
Department of Design and Construction

Project Location: 1350 Sand Island Parkway
Sand Island, Honolulu, O'ahu

Tax Map Keys: 1st Division, Zone 1, Section 5, Plat 041: Parcel 005 or
(1) 1-5-041:005 (portion of)

Landowner: State of Hawai'i (Lessee: City and County of Honolulu)

Total Affected Area: 9 acres

Existing Land Use: Industrial

State Land Use District: Urban

**Development Plan
Land Use Designation:** Sand Island, Public Facility

County Zoning Designation: I-3 Waterfront Industrial District

Special Designation: Special Management Area

Determination: Finding of No Significant Impact (FONSI)

1.0 INTRODUCTION AND SUMMARY

1.1 Scope and Authority

This Environmental Assessment (EA) is prepared pursuant to Chapter 343, Hawai'i Revised Statutes (HRS) and associated Title 11, Chapter 200, Hawai'i Administrative Rules (HAR). This EA is also prepared in accordance to Revised Ordinances of Honolulu (ROH), Chapter 25, Special Management Area (SMA). The relevance of the SMA as it pertains to the proposed action is further discussed in section 5.4 of this EA. The intent of the document is to ensure that systematic consideration is given to the environmental consequences of the proposed action. The action that triggers this assessment is the use of City and County of Honolulu (CCH) funds and State of Hawai'i lands.

The Draft EA was published in the Environmental Notice of the Office of Environmental Quality Control on September 23, 2005. Ten comment letters were received. The letters and the responses to them are attached as Appendix H. Substantive changes to the EA based on these comment letters are indicated in the Final EA by underlined text, as in this paragraph. The CCH Department of Design and Construction (DDC) has determined that this project will not have significant environmental effects and has issued a Finding of No Significant Impact.

1.2 Purpose and Need

The Sand Island Wastewater Treatment Plant (WWTP) is a primary treatment facility servicing metropolitan Honolulu. During expansion and modifications at the WWTP, two construction projects (Headworks and UV Disinfection) required the excavation of soil containing low level polychlorinated biphenyl (PCB) contamination for the construction of new structures and utilities. This excavated soil (approximately 77,000 cubic yards) is temporarily stockpiled at the project site. Based on the Human Health Risk Assessment (HHRA) and the Soil Management Plan (SMP) completed for the WWTP site, the State of Hawai'i Department of Health (HDOH) has approved the reuse of this stockpiled soil at the WWTP site.

The primary purpose of the proposed action is to reuse the stockpiled soil at the project site, which will generally involve grading the stockpiled soil over the entire 9-acre project site. The proposed action will ensure that the stockpiled soil containing low level PCB contamination is properly reused and will not adversely affect the public or the environment.

1.3 Project Location

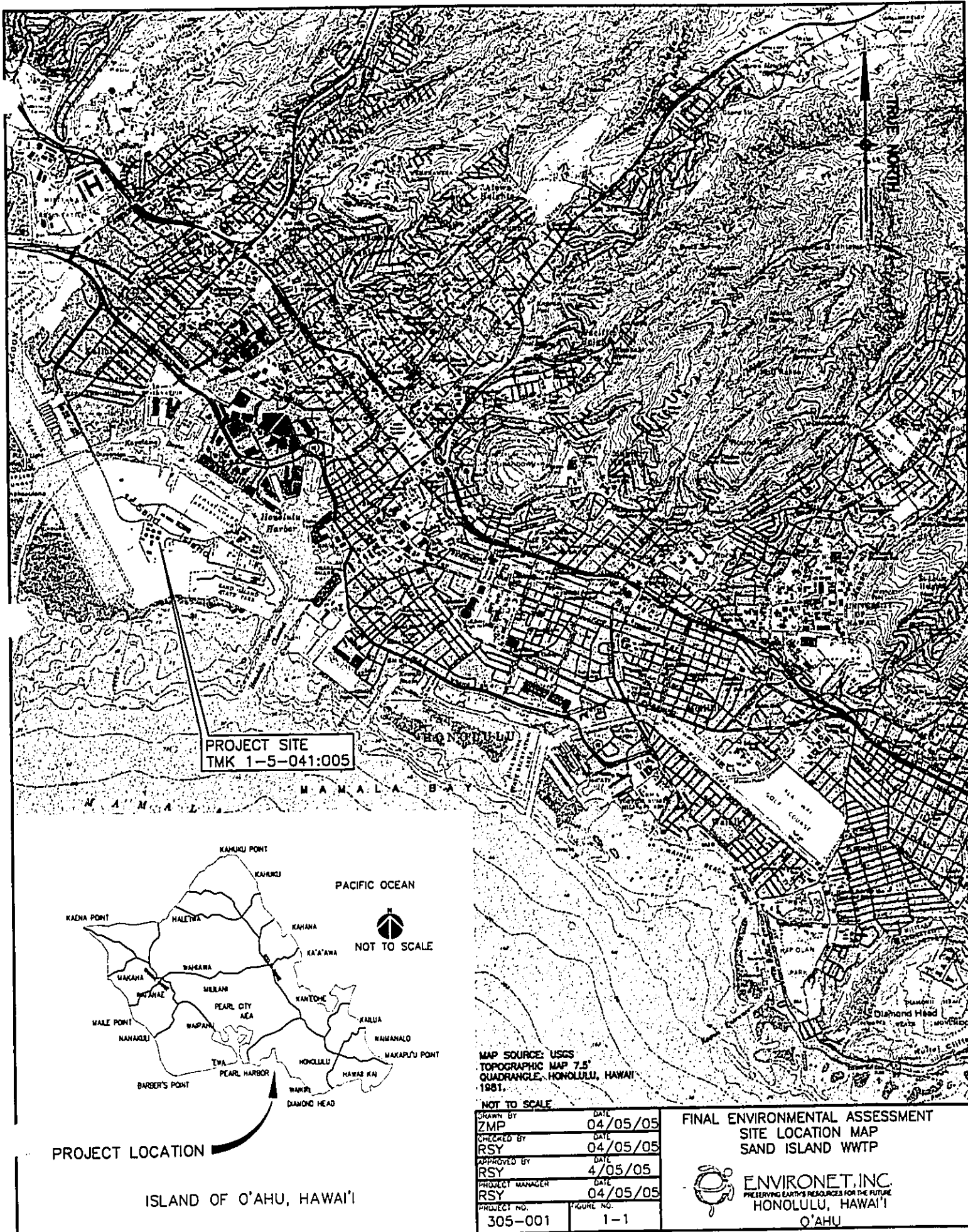
The Sand Island WWTP site is located at 1350 Sand Island Parkway, which is on Sand Island off the south-central coast of O'ahu in Honolulu, Hawai'i (Figure 1-1). The WWTP occupies a portion of tax map key (TMK) 1-5-041:005, an approximately 50-acre land parcel owned by the State of Hawai'i and leased to the CCH. The project site is located in the southeast portion of the WWTP and occupies an approximate 9-acre area (Figure 1-2).

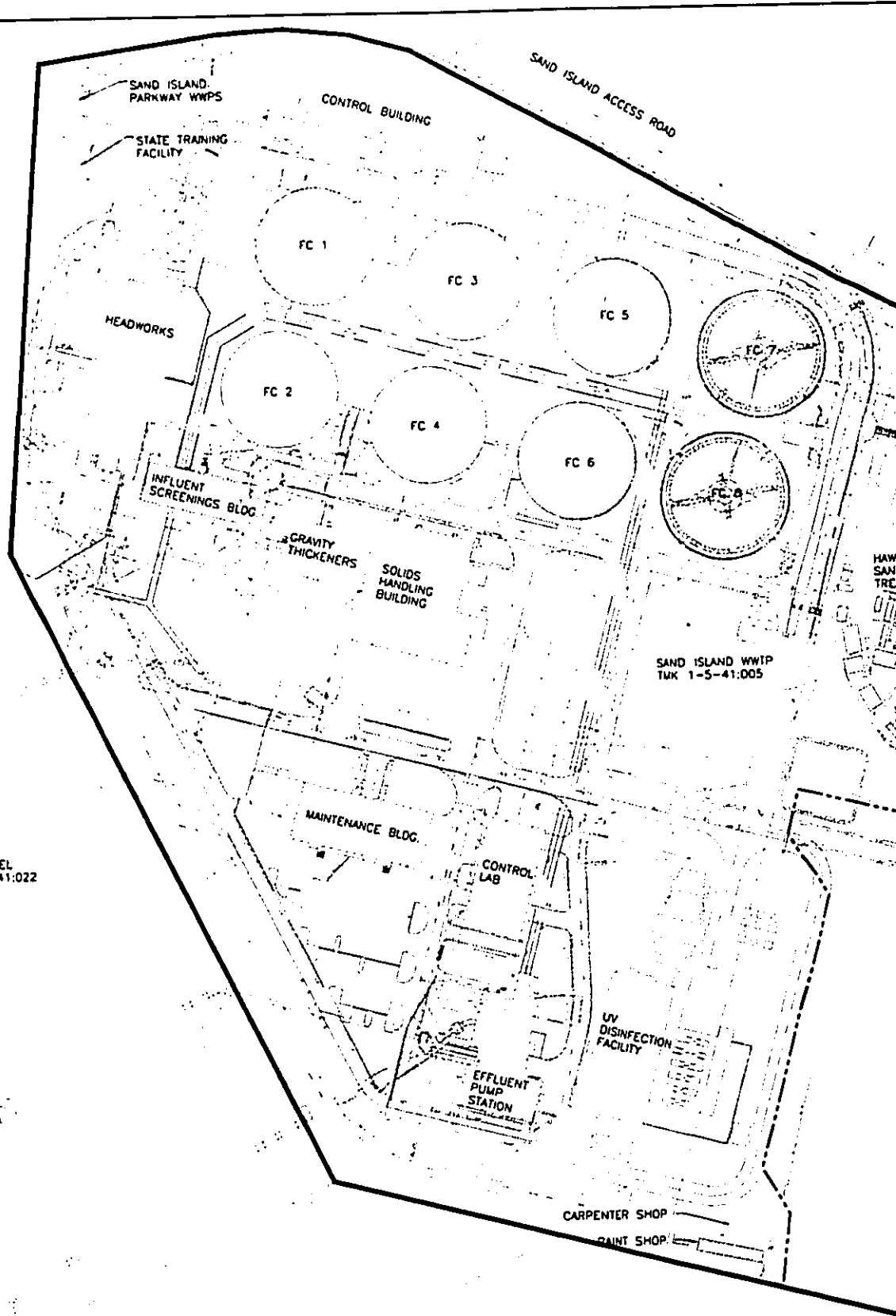
1.4 Schedule and Estimated Cost

The budget for the project, which is funded by CCH, is estimated at \$4.6 million. This estimate will be refined during the final design process. Design drawings for the proposed action have

Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

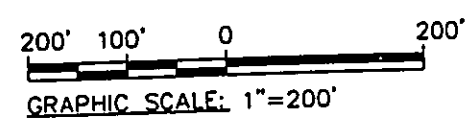
been submitted to HDOH for review and approval. Construction would be initiated after acceptance of the design drawings by HDOH and completion and acceptance of this EA. Construction on this project is currently planned to begin in the second quarter of 2006 and is expected to be completed by the fourth quarter of 2006.



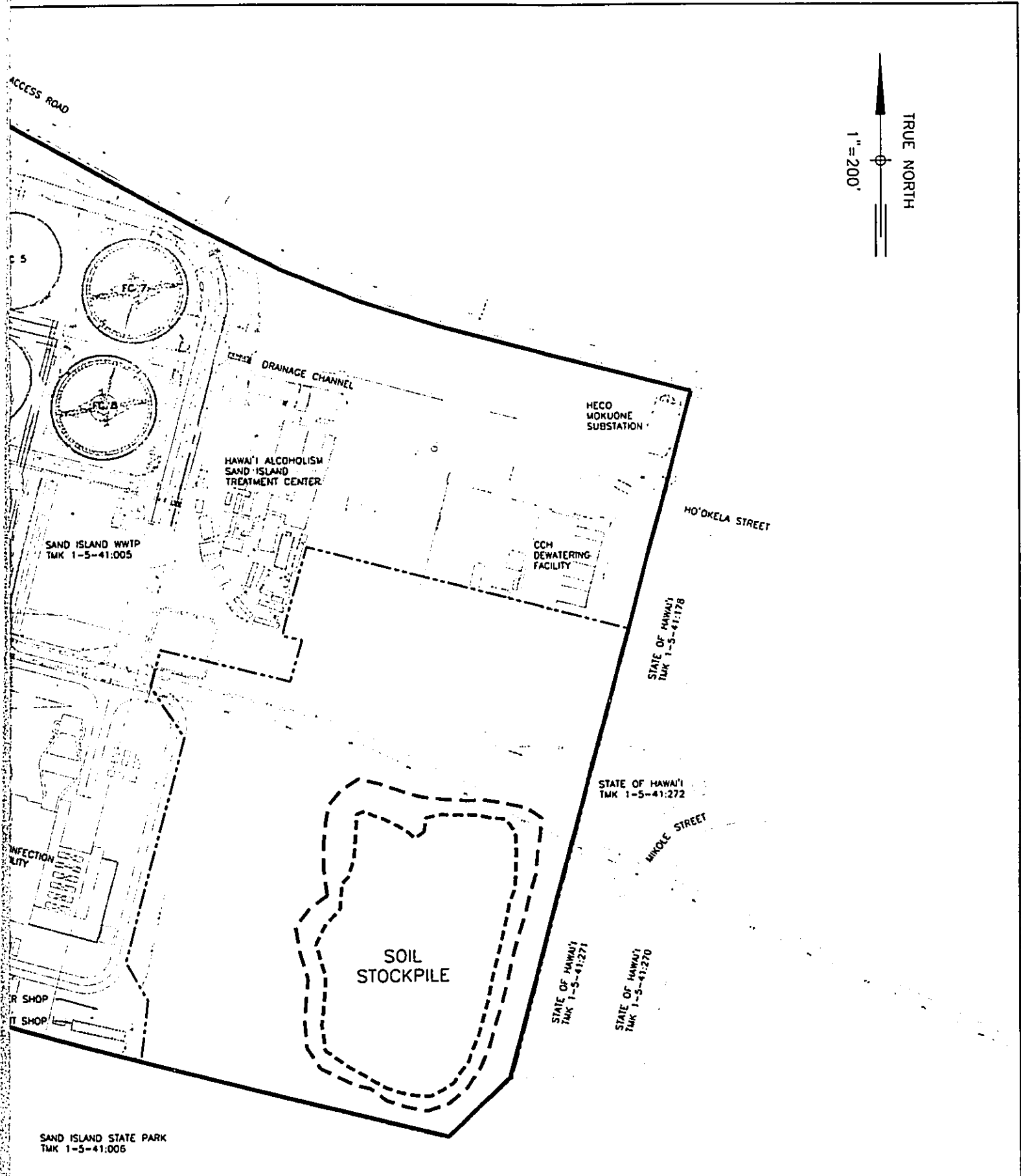


LEGEND:

- FC FLOTATION CLARIFIER
- SAND ISLAND WWTP PROPERTY BOUNDARY
- PROJECT SITE BOUNDARY
- - BOUNDARY OF BASE OF STOCKPILE
- BOUNDARY OF TOP OF STOCKPILE



4/19/03 10:01 AM Sand Island WWTP Civil Improvements/USA/Engine/03 07/17/2003 2:15:43 PM 041



VIRONET, INC. SAVING EARTH'S RESOURCES FOR THE FUTURE	FINAL ENVIRONMENTAL ASSESSMENT	
	SITE LAYOUT SAND ISLAND WWTP, O'AHU, HAWAII	FIGURE 1-2

2.0 PROJECT DESCRIPTION

2.1 Technical Characteristics

The reuse of the stockpiled soil at the project site will generally involve grading the stockpiled soil over an approximate 9-acre area. The soil will be graded and compacted in 9-inch lifts. Based on the current unconsolidated volume of 77,000 cubic yards and allowance for an additional 15,000 cubic yards of consolidated volume for any future expansion work at the WWTP site, the ground surface within the project site will be raised by approximately 4 to 10 feet (EI, 2005b).

A remedial design report and construction plans, which include grading and erosion control plans, has been submitted to the HDOH for review and approval. A Long Term Maintenance and Management plan will be prepared after completion of construction to address the long term maintenance and management of the soil reuse area. Issues such as inspections, maintenance repairs, and management decisions regarding future construction within the area will be addressed by this plan.

2.1.1 Construction Characteristics

The proposed reuse construction is detailed in the remedial design report and construction documents submitted to the HDOH. In general, the side slopes of the newly graded area will be stabilized by a 6-inch thick shotcrete fabric wall. The northern third of the graded area (approximately 3-acres) will be surfaced with asphalt, and the remaining southern area will be finished with a filter fabric and 4-inch layer of gravel (EI, 2005b). The proposed action does not occur within the existing WWTP facilities and will not have an effect on existing treatment plant operations.

Drainage of the graded area will be routed to the existing drainage swale located to the northwest of the project site. The new grades will be such that surface runoff flows to the drainage swale that will be extended near the base of the access driveway (EI, 2005b).

2.1.2 Utilities

Water and electricity are provided to the WWTP by the Board of Water Supply and Hawaiian Electric Company respectively. Construction activities for the proposed action will place minimal demands on existing utilities. The proposed action is not anticipated to adversely affect current water and electric power at the WWTP or in the surrounding area.

SAND ISLAND WWTP
TMK 1-5-41:005

MAINTENANCE BLDG.

CONTROL LAB

UV DISINFECTION FACILITY

EFFLUENT PUMP STATION

EDGE OF CONCRETE SWALE





CONCRETE SWALE

FUTURE BACKFILL AREA

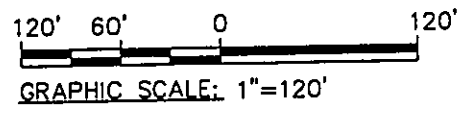
CARPENTER SHOP

PAINT SHOP

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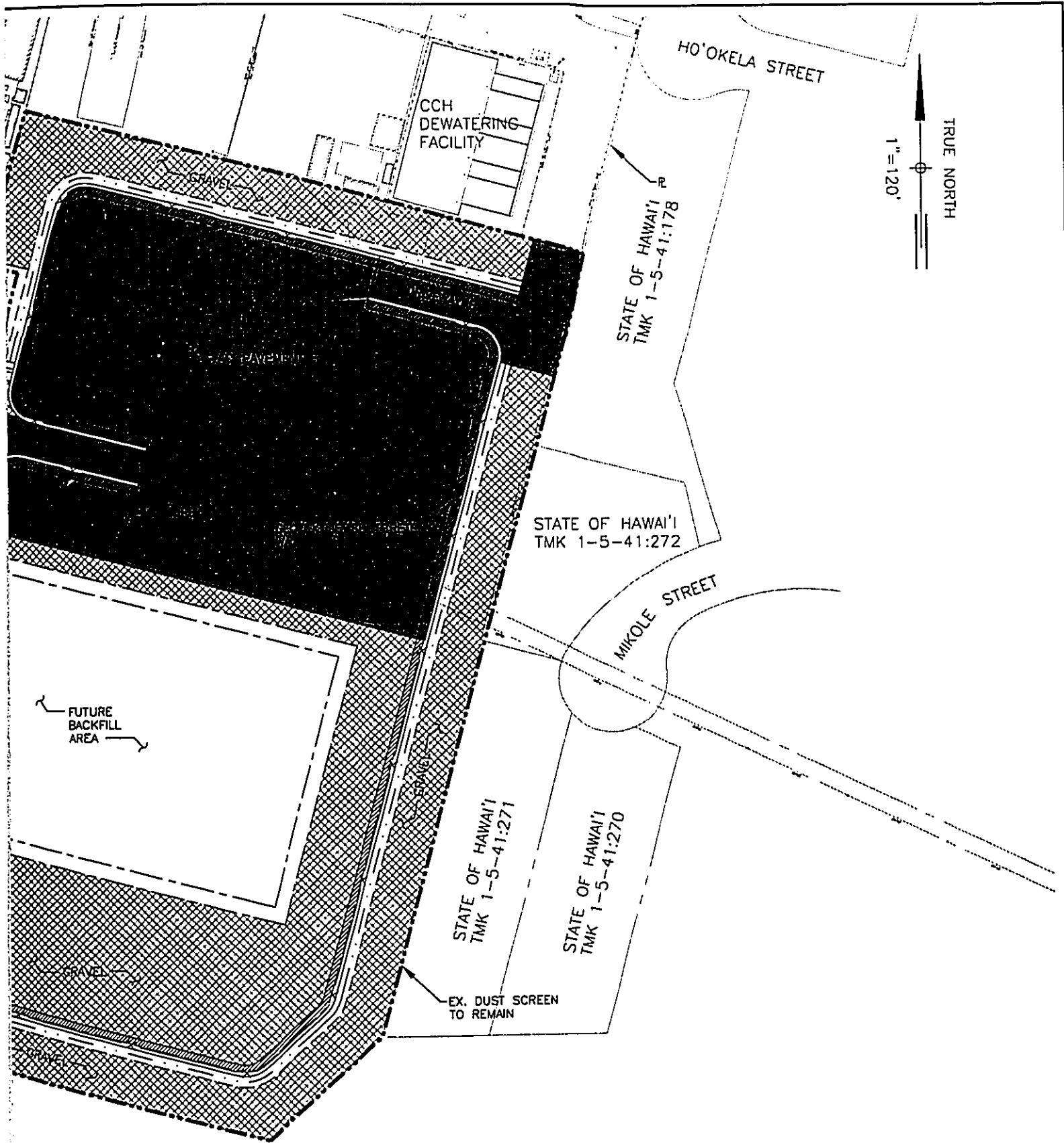
-  GEOTEXTILE WALL
-  AC PAVEMENT
-  GRAVEL
-  LIMITS OF GRADING

SAND ISLAND STATE PARK
TMK 1-5-41:006



ENVIRONET, INC.
PRESERVING EARTH'S RESOURCES FOR THE FUTURE

PLAN 005-355-001 Sand Island WWTP Soil Management/ADA/Drainage/ADA Figures.dwg 6/17/2005 2:15:43 PM VST



VIIRONET, INC.
 SAVING EARTH'S RESOURCES FOR THE FUTURE

FINAL ENVIRONMENTAL ASSESSMENT

FUTURE SITE CONDITIONS
 SAND ISLAND WWTP, O'AHU, HAWAII'

FIGURE
 2-1

3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

Six alternatives for managing the stockpiled soil with low level PCB contamination were explored in the Soil Management Plan that was submitted to and approved by the HDOH. A description of the six alternatives including the proposed action, re-use on-site, is described in the subsections below.

3.1 Re-use On-site

On-site re-use of soil generally consists of re-use of soil for structural fill and landscaping features. On-site re-use of PCB-containing soil with concentrations less than 50 parts per million (ppm) does not require U.S. Environmental Protection Agency (EPA) approval. However, reuse will require implementation of soil management measures to prevent erosion and runoff of soil. Such measures consist of covering the soil with gravel, grass or other approved materials. All soil management measures will need to be documented in a grading and erosion control plan and will require the development and implementation of a long-term management plan to address long-term maintenance and management issues.

As previously mentioned, a HHRA has been prepared for the WWTP site. The HHRA concluded that the remaining soil contamination does not pose an unacceptable risk to on-site WWTP operators and visitors. Therefore, reuse of soil on the WWTP property is acceptable from a human health risk perspective.

The grading and erosion control plan, and the long-term management plan will need to be approved by HDOH.

3.2 Off-site Re-Use

Off-site re-use of soil consists of re-use of soil for fill at another off-site location. Off-site re-use of PCB-containing soil with concentrations less than 50 ppm will require HDOH approval. Per negotiations, HDOH will allow soil with PCB concentrations less than 50 ppm to be re-used off-site at industrial zoned locations. The off-site disposal locations will be approved by HDOH on a site-by-site basis.

Similar to on-site reuse, this option will require a grading, and erosion control plan, a long-term management plan, and completion of a site specific HHRA.

3.3 Municipal Solid Waste Disposal

Soil with PCB concentrations of less than 50 ppm may be disposed at an on-island municipal solid waste landfill such as the Waimanalo Gulch Municipal Solid Waste Landfill or the PVT Landfill. The CCH will need to obtain approval from the landfill (i.e. landfill permit waiver) to allow disposal of soil with PCB concentrations greater than 1 ppm.

The construction contractor will be required to document the final disposition of the soil if it is taken to an off-site landfill. Documentation will include preparation of non-hazardous waste manifests and may also include preparation of location maps of off-site disposal sites.

3.4 TSCA Approved Landfill Disposal

PCB-containing soil may be disposed at a Toxic Substances Control Act (TSCA)-approved landfill on the mainland. Although soil with PCB concentrations less than 50 ppm is not a TSCA-regulated waste, a TSCA-approved facility can accept the soil without the additional special approvals (i.e. landfill permit waiver) required for disposal at an on-island municipal solid waste landfill facility.

3.5 Solvent Extraction

Solvent extraction uses patented solvents to treat PCB-contaminated soils by solubilizing PCBs from soil matrixes. Solvent extraction has been used at some project sites on the mainland to remove PCBs to non-detectible levels. If effective, the soil containing PCBs may potentially be treated to below the EPA Region 9 Residential Preliminary Remediation Goal (PRG) of 0.22 ppm for PCBs and the soil may potentially be re-used on- or off-site without restriction. The PCBs would be concentrated into the solvent thus reducing the volume and cost of PCB-waste disposal.

The solvent extraction cycle begins as contaminated soil is placed into extraction bins. Clean solvent is transferred from a solvent storage tank into the bins where it is allowed to penetrate the soil matrix and facilitate contaminant extraction. The PCBs are dissolved into the extract solution and the solution is drained to a solvent recovery system. Extraction cycles are repeated as necessary to achieve treatment requirements.

The solvent recovery consists of media adsorption and distillation. Contaminants are concentrated in distillation bottoms or in adsorption media. Recovered contaminants are normally shipped off-site for disposal at a hazardous waste landfill. Residual clean solvent in the treated soil is recovered using a closed-loop solvent vapor recovery system that includes an air chiller/coalescer, blower, and air reheater.

A treatability study is normally performed prior to implementing a pilot or full scale operation. The treatability study is used to determine whether solvent extraction can be effective in removing PCBs from site soils. The treatability study typically consists of shipping a sample of the contaminated soil to the remediation vendor where the effectiveness of the technology is measured in a bench-scale treatment unit. Based on the effectiveness, a decision can be made as to whether or not to proceed with a pilot-scale test. A measure of risk always exists that the results of the full scale operation or pilot scale test may differ from the treatability study.

A pilot scale test is recommended prior to implementing a full scale remedial operation. The pilot scale test is used to determine whether solvent extraction can be effective in removing PCBs from site soils with varying PCB concentrations and soil heterogeneity. The pilot scale test is typically conducted at the remedial site. The volume of soil to be treated in a pilot scale test may vary, but a range of 2 to 5 percent of the total volume to be treated may be acceptable. Based on the effectiveness, a decision can be made as to whether or not to proceed with a full-scale remedial operation. A measure of risk always exists that the results of the full scale operation may differ from the treatability study or pilot scale test.

3.6 Thermal Desorption

Thermal desorption uses heat to treat PCB-contaminated soils by volatilizing PCBs from soil matrixes. Thermal desorption has been used at some project sites on the mainland to reduce PCBs to non-detectible levels. If effective, soil containing PCBs may potentially be treated to below the EPA Region 9 Residential PRG of 0.22 ppm and the soil may potentially be re-used on- or off-site without restriction. The PCBs would be concentrated into a liquid matrix thus reducing the volume and cost of PCB-waste disposal.

The thermal extraction cycle begins as contaminated soil is placed into treatment trays with screened bottoms and depths of 12 to 14 inches. The trays are loaded into a chamber containing a heat source that heats to 1,400 degrees Fahrenheit. Up to 3,000 cubic feet per minute of air is drawn through the soil matrix causing the heat to be transferred from the bottom few inches of material, upward, increasing the temperature of the entire treatment bed. Simultaneously, a vacuum is being produced in the system lowering the boiling point of the PCBs. The PCBs are heated to their reduced boiling point and/or significant vapor pressure and stripped from the soil.

In the air emission control system, the air and volatilized PCBs pass through a particulate filter, a condenser, and an activated carbon bed. At each of these devices, the air is further purified until it is free of all contaminants. The particulate filter is used to minimize dust collection in downstream air emission control components and eliminate particulate dust emissions to the atmosphere. The condenser, which is connected to an appropriately sized chiller, lowers the air stream temperature to approximately 40 degrees Fahrenheit. A storage vessel collects the condensate from the condenser and an activated carbon bed is used to polish the air stream prior to discharge to the atmosphere.

A treatability study is normally performed prior to implementing a pilot or full scale operation. The treatability study is used to determine whether thermal desorption can be effective in removing PCBs from site soils. The treatability study typically consists of shipping a sample of the contaminated soil to the remediation vendor where the effectiveness of the technology is measured in a bench-scale treatment unit. Based on the effectiveness, a decision can be made as to whether or not to proceed with a pilot-scale test. A measure of risk always exists that the results of the full scale operation or pilot scale test may differ from the treatability study.

A pilot scale test is recommended prior to implementing a full scale remedial operation. The pilot scale test is used to determine whether thermal desorption can be effective in removing PCBs from site soils with varying PCB concentrations and soil heterogeneity. The pilot scale test is typically conducted at the remedial site. The volume of soil to be treated in a pilot scale test may vary, but a range of 2 to 5 percent of the total volume to be treated may be acceptable. Based on the effectiveness, a decision can be made as to whether or not to proceed with a full-scale remedial operation. A measure of risk always exists that the results of the full scale operation may differ from the treatability study or pilot scale test.

3.7 No Action

Previous construction projects conducted at the WWTP required the excavation of soil containing low level PCB contamination for the construction of new structures and utilities. This

excavated soil (approximately 77,000 cubic yards) is temporarily stockpiled at the southeast corner of the WWTP. The stockpile is being maintained by the construction contractor using temporary erosion controls (i.e. silt fence and hydromulching). However, after completion of the construction project, maintenance of the stockpile will cease and the "no action" alternative will not include implementation of permanent erosion control measures (i.e. not planted, paved, or graveled). A no action alternative would leave the soil stockpile susceptible to wind and soil loss. Erosion of the stockpile may lead to migration of the low level PCB contamination, which may lead to long-term adverse environmental impacts. Therefore, the No Action alternative is considered less favorable than the proposed action and is hereby dismissed from further consideration.

3.8 Alternative Selection

Each remedial option discussed in the previous subsections has associated applicability, requirements, advantages, disadvantages, implementability, costs, time for implementation, and relative risk.

- Applicability – limits of a particular option imposed by federal or state regulations.
- Requirements – long term or short term needs to obtain regulatory approval or to prove technical feasibility of a particular option.
- Advantages – general advantages of proposed remedial measure.
- Disadvantages – general disadvantages of proposed remedial measure.
- Implementability – certainty or likelihood that the treatment option can be implemented or can successfully treat the soil.
- Costs – estimated costs to implement each option.
- Time to Implement – estimated time requirements to start and complete each option.
- Relative Risk – risks weighs the certainty or likelihood of success, potential liability, and health risks to on-site workers, the public, and construction workers.

The applicability, requirements, advantages, disadvantages, implementability, estimated cost, estimated time for implementation, and relative risk, for each disposition option are presented in Table 3-1. The preferred alternative, re-use on-site, was selected based on a comparison of these factors. This alternative presented the lowest relative risk as the soil does not require major handling and transportation off-site, thus reducing potential exposure to the public. The implementability of this alternative was also high. Re-use on-site can be completed relatively

Table 3-1: PCB-Containing Soil Remediation Alternatives

Alternative	Applicability / Description	Requirements	Advantages	Disadvantages
On-Site Reuse	Per 40 CFR 761, soil with PCB concentrations of 50 ppm or less. Re-use soil on-site as backfill for structural excavations or for grading.	Prepare and implement a landscaping and erosion control plan approved by DOH. Provide ground cover to prevent soil run-off. Prepare and execute a long-term maintenance plan approved by DOH Prepare a Human Health Risk Assessment approved by DOH.	Minimal handling and transportation. No additional waste profiling necessary. Relatively low cost.	Soil must be 50 ppm or less. Project site grading requires amount of soil that can be re-used. Landscaping features may be high. Long-term maintenance plan, worker training, will need to be in perpetuity. Future development at the site will not accommodate for the soil re-use. Grading must account for a 78" diameter Ala Moana Fo
Off-Site Reuse	Per DOH negotiations, soil with PCB concentrations of 50 ppm or less. Re-use soil off-site as backfill for structural excavations or for grading.	Obtain DOH approval for off-site use on a case-by-case basis. Prepare and implement a landscaping and erosion control plan approved by DOH. Provide ground cover to prevent soil run-off. Prepare and execute a long-term maintenance plan approved by DOH Prepare a Human Health Risk Assessment approved by DOH.	Minimal to moderate handling and transportation. No additional waste profiling necessary. Relatively low cost. Future development at the WWTP will not have to accommodate for the re-used soil.	Soil must be 50 ppm or less. Will require DOH review and site on a case-by-case basis and tracking of reuse location. Identifying landowner willing to accept soil may be difficult. Will restrict the future "land use site.
Municipal Solid Waste Landfill	Per 40 CFR 761, soil with PCB concentrations of 50 ppm or less. Dispose soil at a municipal solid waste landfill on-island.	Obtain landfill approval on a case-by-case basis. Waste profiling will be required for each contaminated area identified.	Minimal to moderate handling and transportation. Future development of the site does not have to accommodate for PCB contaminated soil reused at the site.	Soil must be less than 50 ppm. Landfill approval on a case-by-case basis requires waste profiling. Waste profiling location may not be available due to capacity reasons. Acceptance may be affected if capacity is not available at the time of disposal. Potential community objection to large quantities of PCB-contaminated soil in their neighborhood.
TSCA-Approved Landfill	All soils regardless of PCB concentration. Dispose soil at a TSCA-approved landfill on the US mainland.	Obtain landfill approval on a case-by-case basis. Waste profiling will be required for each contaminated area identified.	No maximum PCB concentration. Future development of the site does not have to accommodate for PCB contaminated soil reused at the site. Finding a mainland landfill willing to accept the waste should not be a problem.	Extensive handling and transportation. Landfill approval on a case-by-case basis requires waste profiling. Cost prohibitive.

Disadvantages	Implementability	Estimated Relative Costs	Estimated Time to Implement	Relative Risk
<p>Soil must be 50 ppm or less.</p> <p>Project site grading requirements may limit amount of soil that can be reused on-site.</p> <p>Landscaping features may extend up to 5 feet high.</p> <p>Long-term maintenance plan, including worker training, will need to be maintained in perpetuity.</p> <p>Future development at the site will need to accommodate for the soil reused on site.</p> <p>Grading must account for a corridor for 2-78" diameter Ala Moana Force Mains.</p>	Moderate-High	\$66-100/cubic yard	6-10 months (to occur after all construction projects are completed)	Low
<p>Soil must be 50 ppm or less.</p> <p>Will require DOH review and approval of site on a case-by-case basis and will require tracking of reuse location.</p> <p>Identifying landowner willing to accept the soil may be difficult.</p> <p>Will restrict the future "land use" of the reuse site.</p>	Low-Moderate	\$100-150/cubic yard (Cost does not include land leasing or acquisition)	1 year after finding acceptable site assuming 20 15-cubic yard truck loads per day	Low-Moderate
<p>Soil must be less than 50 ppm.</p> <p>Landfill approval on a case-by-case basis that requires waste profiling. Waimanalo Gulch Landfill location may not be an option due to capacity reasons.</p> <p>Acceptance may be affected by capacity available at the time of disposal.</p> <p>Potential community objection to disposal of large quantities of PCB-containing soil in their neighborhood.</p>	Moderate-High	\$200-250/cubic yard	1 year assuming 20 15-cubic yard truck loads per day	Low
<p>Extensive handling and transportation.</p> <p>Landfill approval on a case-by-case basis that requires waste profiling.</p> <p>Cost prohibitive.</p>	Low (due to prohibitive cost)	\$1,000-\$1,500/cubic yard	1 year assuming loading 20 shipping containers per day, each containing 14 one-cubic yard boxes.	Low-Moderate (due to extensive transportation and handling)

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Alternative	Applicability / Description	Requirements	Advantages	Disadvantages
Solvent Extraction	<p>All soils regardless of PCB concentration.</p> <p>Treat soil with a solvent that strips PCBs from the soil. Solvent waste stream is disposed at a Hazardous Waste Landfill on the US mainland.</p>	<p>Perform treatability study.</p> <p>Obtain approval from DOH and EPA for alternative treatment technology.</p> <p>Perform remediation confirmation sampling.</p>	<p>Soil potentially remediated to a point where it may be reused at a site with no restrictions or long-term management requirements (i.e. less than EPA Region 9 residential PRG).</p> <p>If effective, future development will not have to accommodate for contaminated soil.</p> <p>Concentrates the PCBs into a low-volume waste stream.</p>	<p>EPA must authorize any treatment other than TSCA-approved landfill incinerator.</p> <p>Treatability study must be performed to determine the effectiveness of PCB removal.</p> <p>Full scale operation may not be as effective as shown in the treatability study due to heterogeneity of the site soil.</p> <p>Pilot scale test is recommended to determine the effectiveness of PCB removal due to heterogeneity of the site soil.</p> <p>Technology not currently available. High mobilization effort required.</p> <p>Cleanup confirmation testing required. If treated soil does not meet cleanup standards, need to pursue another alternative.</p> <p>Waste solvent stream will likely need to be disposed as a RCRA hazardous waste.</p> <p>DOH may require approval of reuse.</p> <p>Requires a relatively large staging area.</p> <p>Requires storage of hazardous chemicals on site. Poses potential risks to remediation construction workers.</p> <p>Relatively long time to implement.</p>

Disadvantages	Implementability	Estimated Relative Costs	Estimated Time to Implement	Relative Risk
<p>EPA must authorize any treatment alternative other than TSCA-approved landfill or incinerator.</p> <p>Treatability study must be performed to determine the effectiveness of PCB removal.</p> <p>Full scale operation may not be as effective as shown in the treatability study due to the heterogeneity of the site soil.</p> <p>Pilot scale test is recommended to determine the effectiveness of PCB removal due to heterogeneity of the site soil.</p> <p>Technology not currently available on-island, high mobilization effort required.</p> <p>Cleanup confirmation testing required and if treated soil does not meet cleanup goals, may need to pursue another alternative.</p> <p>Waste solvent stream will likely need to be disposed as a RCRA hazardous waste.</p> <p>DOH may require approval of reuse site.</p> <p>Requires a relatively large staging area.</p> <p>Requires storage of hazardous chemicals on site. Poses potential risks to remediation construction workers.</p> <p>Relatively long time to implement.</p>	<p>Low-Moderate</p>	<p>\$10,000 for treatability study</p> <p>\$310,000 for mobilization and \$250/cubic yard for pilot-scale treatment</p> <p>\$500,000 for mobilization and \$200-\$250/cubic yard for full-scale treatment</p> <p>\$35/cubic yard for hauling and reuse off-site</p>	<p>2 years</p>	<p>High (due to uncertainty of effectiveness, storage of hazardous chemicals on-site)</p>

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Alternative	Applicability / Description	Requirements	Advantages	Disadvantages
Thermal Desorption	<p>All soils regardless of PCB concentration.</p> <p>Thermally treat soil with heat to volatilize PCBs from the soil. Gaseous waste stream passes through carbon filters that strip the PCBs from the air. Carbon waste stream is disposed at a Hazardous Waste Landfill on the US mainland.</p>	<p>Perform treatability study.</p> <p>Obtain approval from DOH and EPA for alternative treatment technology.</p> <p>Perform remediation confirmation sampling.</p>	<p>Soil potentially remediated to a point where it may be reused at a site with no restrictions.</p> <p>If effective, future development will not have to accommodate for contaminated soil.</p> <p>Concentrates the PCBs into a low volume waste stream.</p>	<p>EPA must authorize any treatment other than TSCA-approved landfill incinerator.</p> <p>Treatability study must be performed to determine the effectiveness of PCB removal.</p> <p>Full-scale operation may not be as effective as shown in the treatability study due to heterogeneity of the site soil.</p> <p>Pilot scale test is recommended to determine the effectiveness of PCB removal due to heterogeneity of the site soil.</p> <p>Technology not currently available at site. High mobilization effort required.</p> <p>Cleanup confirmation testing required. If treated soil does not meet cleanup standards, need to pursue another alternative.</p> <p>Waste carbon will likely need to be disposed as a RCRA hazardous waste.</p> <p>DOH may require approval of reuse.</p> <p>Requires air permits from the DOH. May require public meetings and community involvement. Permitting process may be very lengthy. May require air monitoring.</p> <p>Requires relatively large staging area.</p> <p>Operation of a thermal desorption unit is relatively dangerous and requires extensive monitoring and health and safety precautions.</p>

Disadvantages	Implementability	Estimated Relative Costs	Estimated Time to Implement	Relative Risk
<p>EPA must authorize any treatment alternative other than TSCA-approved landfill or incinerator.</p> <p>Treatability study must be performed to determine the effectiveness of PCB removal.</p> <p>Full-scale operation may not be as effective as shown in the treatability study due to heterogeneity of the site soil.</p> <p>Pilot scale test is recommended to determine the effectiveness of PCB removal due to heterogeneity of the site soil.</p> <p>Technology not currently available on-island, high mobilization effort required.</p> <p>Cleanup confirmation testing required and if treated soil does not meet cleanup goals, may need to pursue another alternative.</p> <p>Waste carbon will likely need to be disposed as a RCRA hazardous waste.</p> <p>DOH may require approval of reuse site.</p> <p>Requires air permits from the DOH. This may require public meetings and involvement. Permitting process may be very lengthy. May require air monitoring.</p> <p>Requires relatively large staging areas.</p> <p>Operation of a thermal desorption unit is relatively dangerous and requires strict monitoring and health and safety procedures.</p>	<p>Low-Moderate</p>	<p>\$50,000 for treatability study</p> <p>\$350,000 for mobilization and \$500/cubic yard for pilot-scale treatment</p> <p>\$350,000 for mobilization and \$200-\$250/cubic yard for full-scale treatment</p> <p>\$35/cubic yard for hauling and reuse off-site</p>	<p>Approximately 1 year to obtain permits.</p> <p>2 years to treat after obtaining permits</p>	<p>High (due to uncertainty of effectiveness and high operational health and safety risks)</p>

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quickly at a low relative cost, and use of proper engineering controls can eliminate migration of contaminants and exposure to on-site personnel and the surrounding public and environment.

As seen in Table 3-1 above, the thermal desorption and solvent extraction alternatives are not considered feasible options due to their high relative risk, high relative costs, numerous disadvantages, and few advantages. The TSCA-approved landfill alternative is a favorable option because future development on the site would not have to accommodate for PCB contaminated soil. However, the extensive handling and transportation requirements make this alternative not only cost prohibitive but also presents the possibility of off-site migration of PCB contaminated soil during transportation.

Off-site reuse of the soil is a favorable alternative due to its low cost of removal. This alternative may be difficult to implement, however, because it will require a landowner willing to accept the PCB contaminated soil as well as HDOH review and approval. Other disadvantages of this alternative include liability and responsibility for long term maintenance of the soil at the new site and opposition from the public immediately surrounding the reuse site. The municipal solid waste landfill alternative is advantageous in that it removes the PCB contaminated soil from the WWTP site. The greatest disadvantage to this alternative is the uncertainty regarding availability and capacity of the landfill. Public opposition to disposal of PCB contaminated soil at the landfill may also make this alternative unfeasible.

4.0 ASSESMENT OF THE EXISTING NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

4.1 Physical Environment

4.1.1 Topography, Geology, and Soils

Topographic coverage for the project site is provided in design drawings by R.M. Towill Corporation. Elevations on the site range from approximately six to eight feet above mean sea level. The project site slopes gently from the southeast to the northwest.

The majority of what is now Sand Island is man-made created from dredge material placed over a reef platform that extended seaward from the approximate seaward boundary of the present island. The reef platform was known as Kahololoa Island. Dredge material was added to the platform in the late 1800s to form Quarantine Island (also known as Rainbow Island and Anuenue Island). Additional dredge material from Honolulu Harbor was used to expand Quarantine Island in the 1930s, and the 1940s to create what is now Sand Island. The northeast portion of the Sand Island WWTP is located on the southwest side of the former Quarantine Island (EI, 2003a).

Soils at the site are classified as mixed fill land (FL) by the U.S. Department of Agriculture Soil Conservation Service (USDA, 1972) (Figure 4-1). FL consists of areas filled with materials dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources (USDA, 1972).

Potential Impacts and Mitigation

The project site exhibits no unique topographical features. The reuse of the stockpiled soil at the project site will generally involve grading of the stockpiled soil over the entire project site. The ground surface within the project site will be raised by approximately 4 to 10 feet. A remedial design report and construction documents, which include grading and erosion control plans, have been submitted to HDOH for review and approval.

The grading and erosion control plans are designed to minimize exposed soils to erosion by implementing: temporary erosion controls during construction such as use of dust screens, silt fences, storm drain inlet controls, stabilized ingress and egress points, and hydromulching; and permanent erosion control measures by graveling and paving the site. As a result, wind erosion and soil loss are anticipated to be minimal. The control measures will mitigate the effects of fugitive dust and soil erosion on surrounding properties as well as operations at the site. A Long Term Maintenance and Management Plan will also be implemented to address long term inspections and maintenance repairs.

The proposed action is not anticipated to have an adverse impact on the underlying topography, geology, and soils of the project site and surrounding area.

4.1.2 Hydrology

Groundwater at the site consists of two distinct systems, a shallow, perched aquifer and a deeper basal aquifer. The shallow aquifer is unconfined (i.e., not confined by an impermeable layer on top of the aquifer) and occurs at about 3 to 5 feet below ground surface (bgs). This aquifer is classified as a sedimentary aquifer and is hydraulically connected to the ocean, which means that the groundwater elevation is subject to tidal influence. The shallow aquifer is considered non-potable due to its brackish nature. The deep aquifer is classified as a volcanic flank basal, confined aquifer (Mink and Lau, 1990). The depth to the basal aquifer is greater than 1,000 feet below ground surface at the project site (Wentworth 1951).

The Underground Injection Control (UIC) line is established by the HDOH to determine groundwater utility. The UIC line is used to determine the level of protectiveness afforded an aquifer as reflected by water quality standard criteria. In general, groundwater situated mauka (inland) of the UIC line is considered a potential source of drinking water. Groundwater situated makai (seaward) of the UIC line is generally considered not to be a potential source of drinking water. The project site lies makai of the UIC line and groundwater beneath the site is thus not considered a potential source of drinking water (EI, 2005a).

Surface runoff at the project site follows the contour of the ground surface and flows in a north westerly direction into drainage channels along the northwestern portion of the project site. The drainage channels flow in a northerly direction towards Sand Island Access Road and into a drainage channel. There are no rivers, lakes or ponds located on the site or within 150 meters of the site (EI, 2005a).

Potential Impacts and Mitigation

The proposed action could potentially contribute to pollutant loads by way of runoff of soil. Temporary control measures will be implemented during construction to reduce dust and eliminate runoff. The construction contractor will be required to meet all regulatory standards for construction, which will include obtaining a National Pollutant Discharge Elimination System (NPDES) permit. Control measures will include use of dust screens and silt fences, catch basin filters, stabilized ingress and egress points, hydromulching, and limited watering for dust control.

The remedial design calls for permanent engineering controls to eliminate erosion and dust. The side slopes of the newly graded area will be stabilized by a 6-inch thick shotcrete fabric wall. The northern third of the graded area (approximately 3-acres) will be surfaced with asphalt and the remaining southern area will be finished with a filter fabric and 4-inch layer of gravel.

Mobilization of PCBs to the groundwater is not a concern due to the low mobility of PCBs in site soils and low solubility of PCBs in water. Previous studies at the WWTP site have shown that PCBs have not migrated to or below the groundwater.

4.1.3 Flora and Fauna

The majority of what is now Sand Island, including the project site, is created from dredge material placed over a reef platform that extended seaward from the approximate seaward boundary of the present island (EI, 2003a). The project site is also located within the existing Sand Island WWTP, a highly altered and industrial environment.

Potential Impacts and Mitigation Measures

The project site is not known to contain any threatened, endangered, or candidate plant species; therefore, no adverse impacts are anticipated. The project site is not known to contain any threatened, endangered, or candidate avian or mammalian species; therefore, no adverse impacts are anticipated. No mitigation is required.

4.1.4 Ocean Ecosystem

The Sand Island WWTP is located within the East Mamala Bay region, south shore of O'ahu. The quality and diversity of the ocean environment in East Mamala Bay is considerably limited when compared to more rural ocean environments on O'ahu. Urban development in areas surrounding East Mamala Bay has adversely impacted the health of the ocean environment of East Mamala Bay (RMTC, 2001).

Potential Impacts and Mitigation Measures

The proposed action calls for engineering controls (shotcrete fabric walls, gravel and asphalt surfacing) that will control soil erosion and reduce the amount of soil entering storm drainage systems during heavy rains. The Long Term Maintenance and Management Plan will also address periodic inspections and maintenance repairs of the ground cover to ensure maintenance of these control measures. Therefore, the ocean ecosystem is not anticipated to be adversely affected by the proposed action.

4.1.5 Wetland Ecosystem

The majority of what is now Sand Island, including the project site, is man-made created from dredge material placed over a reef platform that extended seaward from the approximate seaward boundary of the present island. The project site is also located within the existing Sand Island WWTP, a highly altered and industrial environment. No federally recognized wetlands are located at or within the vicinity of the project site (EI, 2003a).

Potential Impacts and Mitigation Measures

The proposed action is not anticipated to have an adverse impact on wetland ecosystems. No mitigation is required.

4.1.6 Flood Hazard

The project site is located outside of the tsunami inundation zone. According to the Flood Insurance Rate Map (FIRM, 2000), the project site, with the exception of the northwest corner, is located in Zone A; areas where no base flood elevation has been determined. The northwest corner of the project site is located within Zone X; areas determined to be outside of the 500 year flood plain (FIRM, Community-Panel No 15003C365E, November 20, 2000) (Figure 4-2). Portions of the project site within Zone A have been given a regulatory flood elevation ranging from 5.7 to 5.9 feet above mean sea level (Appendix E). The ground surface elevation of the project site is greater than 5.9 feet, and therefore floods are not anticipated to impact the project site.

According to Mr. Mario Siu-Li of the CCH Department of Planning and Permitting (DPP), a flood determination for parcel TMK 1-5-041:005, which included the project site, was accepted by DPP in 1998. Mr. Siu-Li indicated that the flood determination placed the project site outside of the floodway, and therefore a "no-rise" certification was not necessary (Appendix E). A drainage report will be filed with DPP as part of the proposed action.

Potential Impacts and Mitigation Measures

The proposed action will comply with the Land Use Ordinance (LUO) flood regulations. No mitigation is necessary.

4.1.7 Climate and Air Quality

The climate in the region of Sand Island is warm and relatively dry. Data from the nearby Honolulu International Airport gauging station shows an average temperature of 70.1°F during the winter months and 84.0°F during the summer months, with temperature extremes ranging from 52°F to 95°F throughout the year. The average annual precipitation at the Honolulu International Airport is approximately 20.92 inches. The hottest month is August with a 30 year monthly average of 81.4°F, while the coolest month is January averaging 72.9°F. The wettest month is March averaging 17.07 inches, while the driest month is September averaging 1.49 inches (The State of Hawai'i Data Book, 2004).

Northeasterly trade winds prevail over O'ahu approximately 80 percent of the time, with average wind speeds ranging from 10 to 15 miles per hour. The trade winds blow most strongly and consistently from April through November and consequently air quality is relatively good. Southerly or "Kona" winds occur roughly less than half the time during the months of December through March.

Soil dust and emissions from construction equipment will be generated during construction activities. Currently there is a dust fence located along the eastern and southern borders of the project site. The dust fence is in place to prevent fugitive dust from entering the adjacent Sand Island State Park to the south and adjacent industrial properties to the east. Erosion control plans, which include temporary dust control measures and permanent engineering controls, have been submitted to the HDOH for review and approval.

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The design of the proposed action includes an approximate 330 feet long by 280 feet wide by 4.5 feet deep soil backfill area. The backfill area will accommodate soils that are excavated as a result of future construction projects to be conducted at the Sand Island WWTP after implementation of the proposed action. A silt fence will be placed around the perimeter of the backfill area to prevent soil erosion. Once the backfill area is filled, the surface will be finished with a filter fabric and 6-inch layer of gravel.

Potential Impacts and Mitigation Measures

The major potential short-term air quality impact of the project will occur from the emission of fugitive dust during construction. An effective dust control plan will need to be implemented in order to eliminate emissions of fugitive dust from future construction activities at the property line in order to comply with State of Hawai'i Air Pollution Control regulations.

In order to control dust, the existing dust fence located along the eastern and southern borders of the project site shall be maintained. Active work areas and any temporary unpaved work roads should be watered at least twice daily on days without rainfall. Dirt-hauling trucks will be covered when traveling on roadways to prevent dust generation during transport. A routine road cleaning and/or tire washing program will be required to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Paving and establishment of landscaping early in the construction schedule will also help control dust. Monitoring dust at the project boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program and to adjust the program if necessary.

Upon completion of the proposed action and when soil is backfilled during future construction projects at the WWTP site, it will be the responsibility of the contractor to reduce soil dust and erosion. Best management practices shall be implemented to reduce soil dust and erosion during backfill activities. If backfilling activities are to cease for an extended period of time, the contractor shall hydromulch the backfill area.

During construction phases, emissions from engine exhausts (primarily consisting of carbon monoxide and nitrogen oxides) will also occur both from on-site construction equipment and from vehicles used by construction workers.

After the proposed action is completed, any long term impacts on air quality in the project area due to soil dust and vehicular emissions are not anticipated.

4.1.8 Noise

The project site is located within the Sand Island WWTP and will therefore be subject to existing noises of the WWTP and from construction activities within the WWTP site. Other existing sources of noise include aircraft from the Honolulu International Airport and industrial activities conducted at neighboring properties.

Potential Impacts and Mitigation Measures

During the construction phase of the project, typical construction noise would be audible in the area and in the immediate vicinity of construction work sites. Noise from construction activities must comply with the HDOH noise regulations as specified for construction related activities. Such regulations include the use of properly muffled construction equipment, maintaining hours during which construction is permitted, and ensuring that noise levels fall within permitted levels during those hours. According to HDOH regulations, noisy construction activities are not allowed during the nighttime hours or on Sundays and holidays. Use of curfew periods during the construction phase should help to minimize risks of adverse noise impacts.

4.1.9 Solid and Hazardous Waste

The proposed action calls for reuse of the stockpiled soil located at the project site, and will generally involve grading of the soil over the entire project site. Solid waste will not be generated during construction activities (EI, 2005b). Previous investigations and remedial activities have been conducted at the WWTP to remove identified environmental hazards. Reuse of the stockpiled soil on-site has been approved by the HDOH.

Potential Impacts and Mitigation Measures

Solid and hazardous waste is not anticipated to be generated by the proposed action. The proposed action utilizes engineering controls that will minimize and eliminate runoff and exposure of the soil containing low level PCB contamination. The Long Term Maintenance and Management Plan to be prepared after completion of the construction will address the requirements for handling, placement, and/or disposal for the soil should future activities require excavation and moving of the soil. The plan will also address inspection of the engineering controls and maintenance repairs

4.2 Social Environment

4.2.1 Population and Economy

The project site is located within the existing Sand Island WWTP. The WWTP services the entire urban Honolulu area extending from Kuli'ou'ou Valley in the east to Aliamanu in the west. As of 1998, the estimated population of the WWTP service area was 440,000 people (HDOH, 1998).

Potential Impacts and Mitigation Measures

The proposed action will improve the existing conditions of the Sand Island WWTP through the prevention of degradation of air, land, and water. Therefore, adverse impacts to population are not anticipated. Due to the scale and cost of the proposed action, adverse impacts to the economy are not anticipated.

4.2.2 Land Use and Land Use Designation

The project site encompasses approximately 9 acres of the 50-acre parcel identified as TMK (9) 1-5-041: 005. The parcel is located on Sand Island off the south central coast of O'ahu in Honolulu, Hawai'i.

A review of aerial photographs conducted by Environet, Inc. (EI) shows the project site as undeveloped vacant land from as early as 1952. Aerial photographs from 1961, 1966, 1972, 1976, and 1981 show that the project site remained vacant and undeveloped. By 1976, the Sand Island WWTP is present. The 1990 aerial photograph shows that the entire project site is used for junk car storage. The 1993 aerial photograph shows that the junk cars located on the project site have been removed and the project site has been graded. The most recent aerial photograph, from 1997, shows possible soil piles located in the central and western portions of the project site.

The project site falls within the State Land Use Urban District. The County Zoning is Waterfront Industrial (I-3). The project site is designated on the City and County of Honolulu (CCH) Primary Urban Center Development Plan Maps as industrial (Figure 4-3).

The project site is located within the Special Management Area (SMA). SMAs are specially designated areas governed by specific county guidelines. Any development within an SMA requires a SMA Use Permit from the appropriate county. There are two existing SMA Use Permits for the Sand Island WWTP, file number: 2000 SMA-59; and 2003 SMA-36 (Appendix F). The proposed action will require the approval of a Major SMA Use Permit. The relevance of the SMA as it pertains to the proposed action is discussed in section 5.4 of this EA.

Potential Impacts and Mitigation Measures

The project site is located within the boundaries of an existing wastewater treatment plant, and is zoned for industrial use. The proposed action is consistent with the land use designation as industrial. Future use of the project site and surrounding area is not anticipated to change. The project site is located within the SMA. A Major SMA Use Permit will be obtained as part of the proposed action.

4.2.3 Ownership, Surrounding Land Uses

Ownership history of the project site is from historical records maintained by the CCH Real Property Tax Division. Existing records indicate that the project site is owned by the State of Hawai'i and has been leased to the CCH since 1976 for use as a wastewater treatment plant. The project site and surrounding land has been owned by the State of Hawai'i since the mid 1960's. The previous land owner was the United States of America War Department and Treasury Department (EI, 2003a)

Aerial photographs indicate that the Sand Island WWTP was constructed sometime around 1976. Neighboring areas east and south of the project site were undeveloped until 1981. The 1981 aerial photograph shows that a small number of rectangular buildings have been constructed to the east of the project site. Areas south of the project site remain undeveloped. By 1990, areas

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south of the project site have been developed into the Sand Island State Park. The most recent aerial photograph, from 1997, shows no changes to the surrounding area (EI, 2003a).

Potential Impacts and Mitigation Measures

The project site is located within the boundaries of an existing wastewater treatment plant, which is owned by the CCH. Future use of the project site and surrounding area is not anticipated to change. Therefore, the proposed action is not anticipated to have an adverse impact on ownership and surrounding land use. No mitigation is required.

4.2.4 Historic and Cultural Resources

The majority of what is now Sand Island, including the project site, is man-made created from dredge material placed over a reef platform that extended seaward from the approximate seaward boundary of the present island. The project site is located within the existing Sand Island WWTP, a highly altered and industrialized environment. No known historical or archaeological sites are located on or in the vicinity of the project site. Letters of inquiry were sent to the State Historic Preservation Division (SHPD) and the Office of Hawaiian Affairs (OHA). A response has not yet been received from the SHPD. A response has been received from OHA, and is included in Appendix H.

Potential Impacts and Mitigation Measures

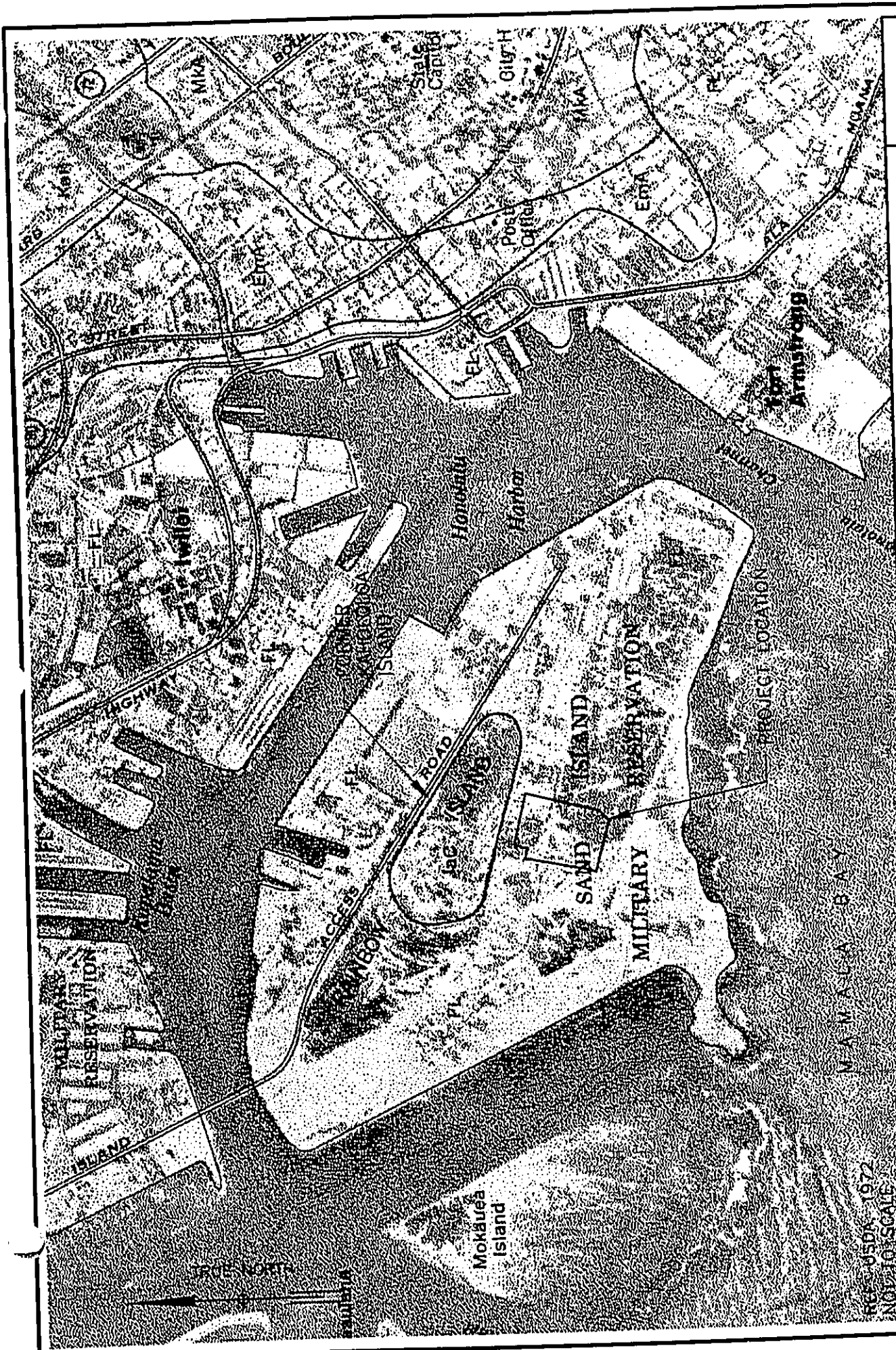
According to the State Historic Preservation Division and the Office of Hawaiian Affairs, there are no known historical or cultural resources at the project site or in the surrounding area. The proposed action is not anticipated to have an adverse impact on historic and cultural resources. No mitigation is required.

4.2.5 Visual and Aesthetic Resources

Views from along the project site boundaries are of the Sand Island WWTP, industrial areas to the east, and the Sand Island State Park to the south. Industrial structures and the state park to the south contribute to the overall aesthetic quality of the project area. The proposed project will raise the ground surface approximately four to ten feet. At this height, the new grade will be below surrounding area structures.

Potential Impacts and Mitigation Measures

The proposed action would not significantly impact important visual and aesthetic resources of the project site and surrounding area such as mauka-makai view corridors, views of significant landmarks or natural resources, or ridge line views from outside or within the project boundaries. No mitigation is required.



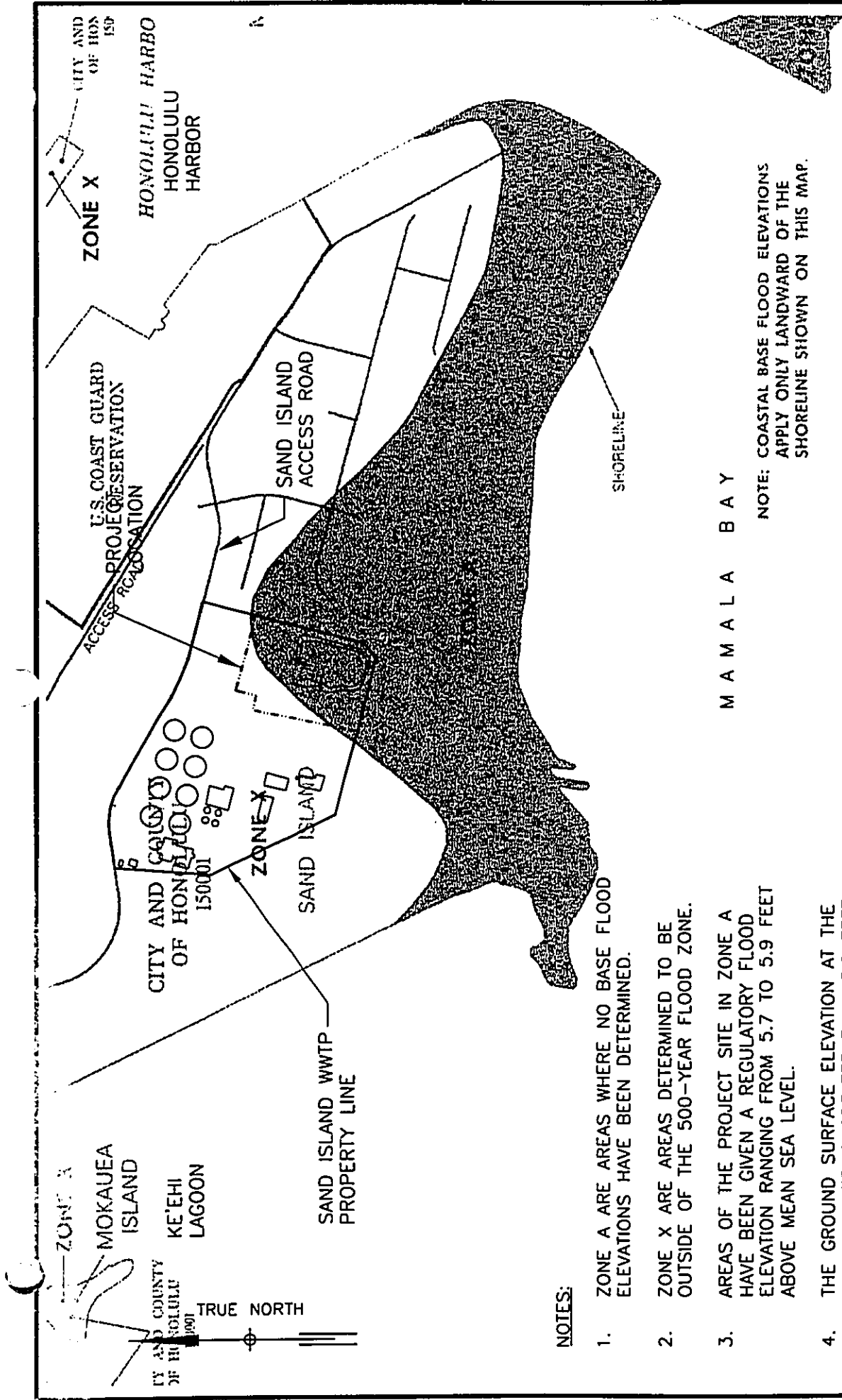
FINAL ENVIRONMENTAL ASSESSMENT

SOIL CLASSIFICATION MAP
 SAND ISLAND WWTP, O'AHU, HAWAII


ENVIRONET, INC.
 PRESERVING EARTH'S RESOURCES FOR
 THE FUTURE

REF: USDA 1972
 NOT TO SCALE

FIGURE
 4-1



M A M A L A B A Y

NOTE: COASTAL BASE FLOOD ELEVATIONS APPLY ONLY LANDWARD OF THE SHORELINE SHOWN ON THIS MAP.

NOTES:

1. ZONE A AREAS WHERE NO BASE FLOOD ELEVATIONS HAVE BEEN DETERMINED.
2. ZONE X ARE AREAS DETERMINED TO BE OUTSIDE OF THE 500-YEAR FLOOD ZONE.
3. AREAS OF THE PROJECT SITE IN ZONE A HAVE BEEN GIVEN A REGULATORY FLOOD ELEVATION RANGING FROM 5.7 TO 5.9 FEET ABOVE MEAN SEA LEVEL.
4. THE GROUND SURFACE ELEVATION AT THE PROJECT SITE IS GREATER THAN 5.9 FEET.

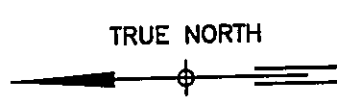
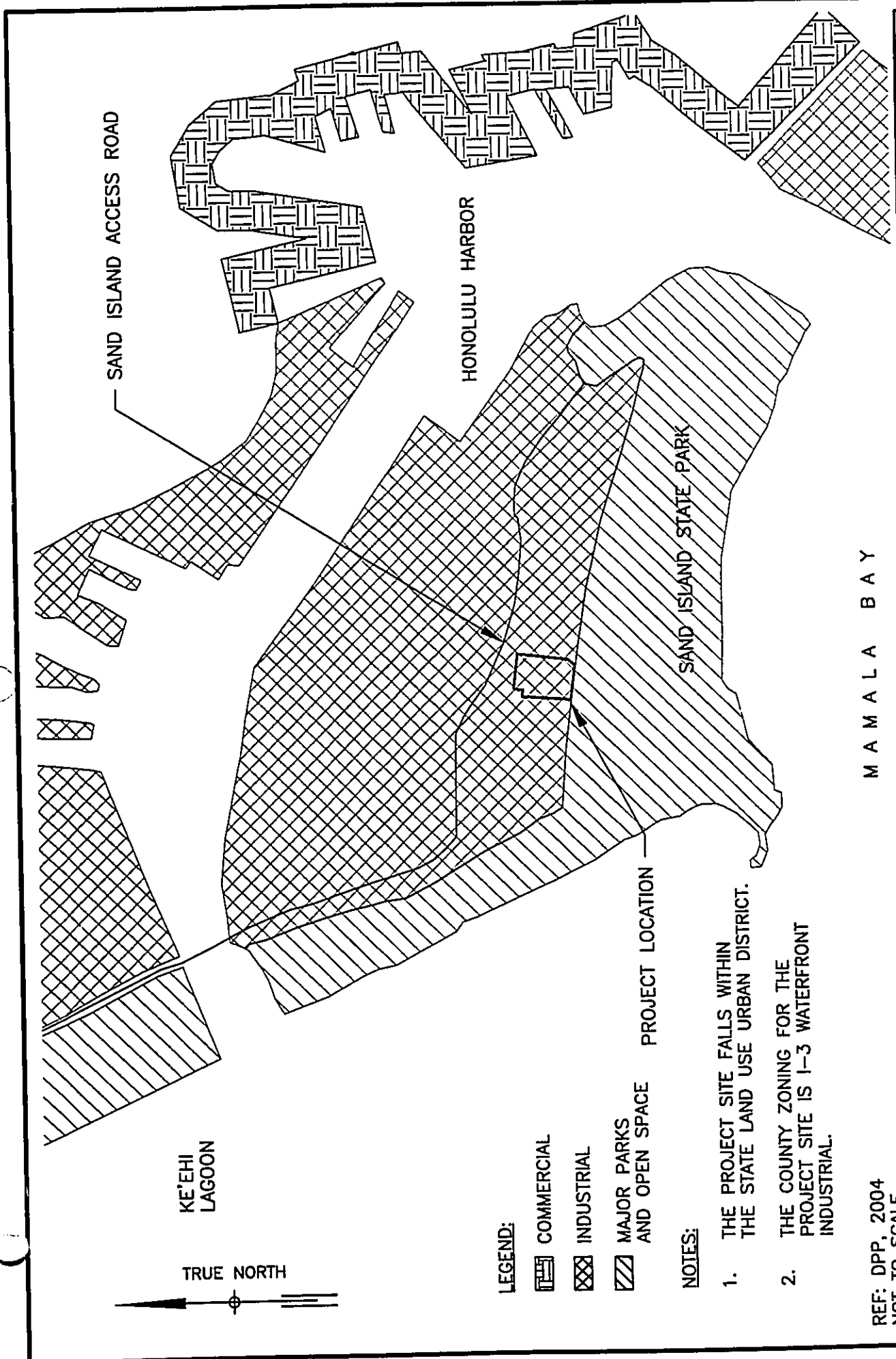
REF: FIRM, 2000; USACE
NOT TO SCALE



FINAL ENVIRONMENTAL ASSESSMENT

FLOOD INSURANCE RATE MAP
SAND ISLAND WWTP, O'AHU, HAWAII

FIGURE
4-2



KE'EH
LAGOON




SAND ISLAND ACCESS ROAD

HONOLULU HARBOR

SAND ISLAND STATE PARK

M A M A L A B A Y

LEGEND:


-  COMMERCIAL
-  INDUSTRIAL
-  MAJOR PARKS AND OPEN SPACE

PROJECT LOCATION

NOTES:

1. THE PROJECT SITE FALLS WITHIN THE STATE LAND USE URBAN DISTRICT.
2. THE COUNTY ZONING FOR THE PROJECT SITE IS I-3 WATERFRONT INDUSTRIAL.

REF: DPP, 2004
NOT TO SCALE

 <p>ENVIRONET, INC. PRESERVING EARTH'S RESOURCES FOR THE FUTURE</p>	<p>FINAL ENVIRONMENTAL ASSESSMENT</p> <p>PRIMARY URBAN CENTER DEVELOPMENT PLAN LAND USE MAP</p> <p>SAND ISLAND WWTP, O'AHU, HAWAII</p>	<p>FIGURE 4-3</p>
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5.0 RELATIONSHIP TO STATE AND COUNTY PLANS, POLICIES, AND CONTROLS

The conformance of the proposed action to state and county policy are described in this section of the report.

5.1 Hawai'i State Plan

The Hawai'i State Plan, Chapter 226, HRS was developed as a guideline for the future growth of the State of Hawai'i. The State Plan identifies goals, objectives, policies, and priorities for the development and growth of the State. It provides a basis for prioritizing and allocating the limited resources such as public funds, services, human resources, land, energy, and water. The State Plan establishes a system for the formulation and program coordination of State and County plans, policies, programs, projects, and regulatory activities. The State Plan also facilitates the integration of all major State and County activities.

The proposed project would be in conformance to the State Plan's objectives and policies for the physical environment, facility systems, and socio-cultural advancement-health through the provision of facilities necessary for public health and welfare.

5.2 State Functional Plan

The twelve State Functional Plans were adopted by the State Legislature in April 1984. These plans were formulated to specify in greater detail the policies, guidelines and priorities set forth in the Hawai'i State Plan. The twelve functional plans include; Energy, Transportation, Water Resources, Historic Preservation, Health, Education, Housing, Conservation Lands, Higher Education, Agriculture, and Tourism.

The proposed action is consistent with the policies and objectives of the State Functional Plan. The proposed action will prevent of degradation of air, land, and water; thereby improving environmental health and enhancing quality of life.

5.3 State of Hawai'i Land Use Law

Chapter 205, HRS promulgates the State Land Use Law. This law is intended to preserve, protect, and encourage the development of lands in the State of Hawai'i for uses that are best suited to the public health and welfare of its people. The State of Hawai'i Land Use Commission (LUC) classifies all land into four districts: Urban, Conservation, Agriculture, and Rural. The project area is designated within the State Urban District. Uses anticipated under the proposed action would be consistent with objectives and policies of the State Land Use Law.

5.4 Coastal Zone Management (CZM) Program

The CZM Program is promulgated by Chapter 205A, HRS. The objectives and policies of the program are administered by the Office of State Planning. The CZM Program promulgates the creation of SMAs. SMAs are specially designated areas governed by specific county guidelines. Any development within an SMA requires a SMA Use Permit from the appropriate county. An accepted EA fulfills a portion of the information necessary to apply for an SMA Use Permit. The project site is located within the SMA that extends primarily along all shoreline areas of

O'ahu; therefore, approval of a Major SMA Use Permit is required for the proposed action (Figure 5-1).

In 2000, an SMA Use Permit (2000 SMA-59) was issued for the modifications and expansion project at Sand Island WWTP. In 2003, an SMA Use Permit (2003 SMA-36) was issued for the construction of an In-Vessel Bioconversion Facility at the Sand Island WWTP. Also in 2003, a minor modification was made to 2003 SMA-36 to allow for the construction of two storage silo tanks at the WWTP. A Major SMA Use Permit will be filed as part of the proposed action.

5.5 City and County of Honolulu General Plan and Development Plan

The CCH General Plan and Development Plan addresses land uses, public infrastructure, cultural resources, environmental concerns, and desired population. More specifically, the Primary Urban Center (PUC) Development Plan is intended to help guide public policy, investment, and development decisions for the areas including the project site. The proposed action will be consistent with the existing I-3 Waterfront Industrial zoning of the project site. In addition, the proposed action will be consistent with the policies and guidelines for wastewater systems through improvement of the existing Sand Island WWTP.

5.6 Necessary Permits and Approvals

Several permits and approvals would be required prior to implementation of the project. Application for most of these permits cannot be made until the environmental review process (HRS Chapter 343) is completed. They are listed here under their granting agencies.

State

Clean Water Branch

National Pollutant Discharge Elimination System Permits for grading

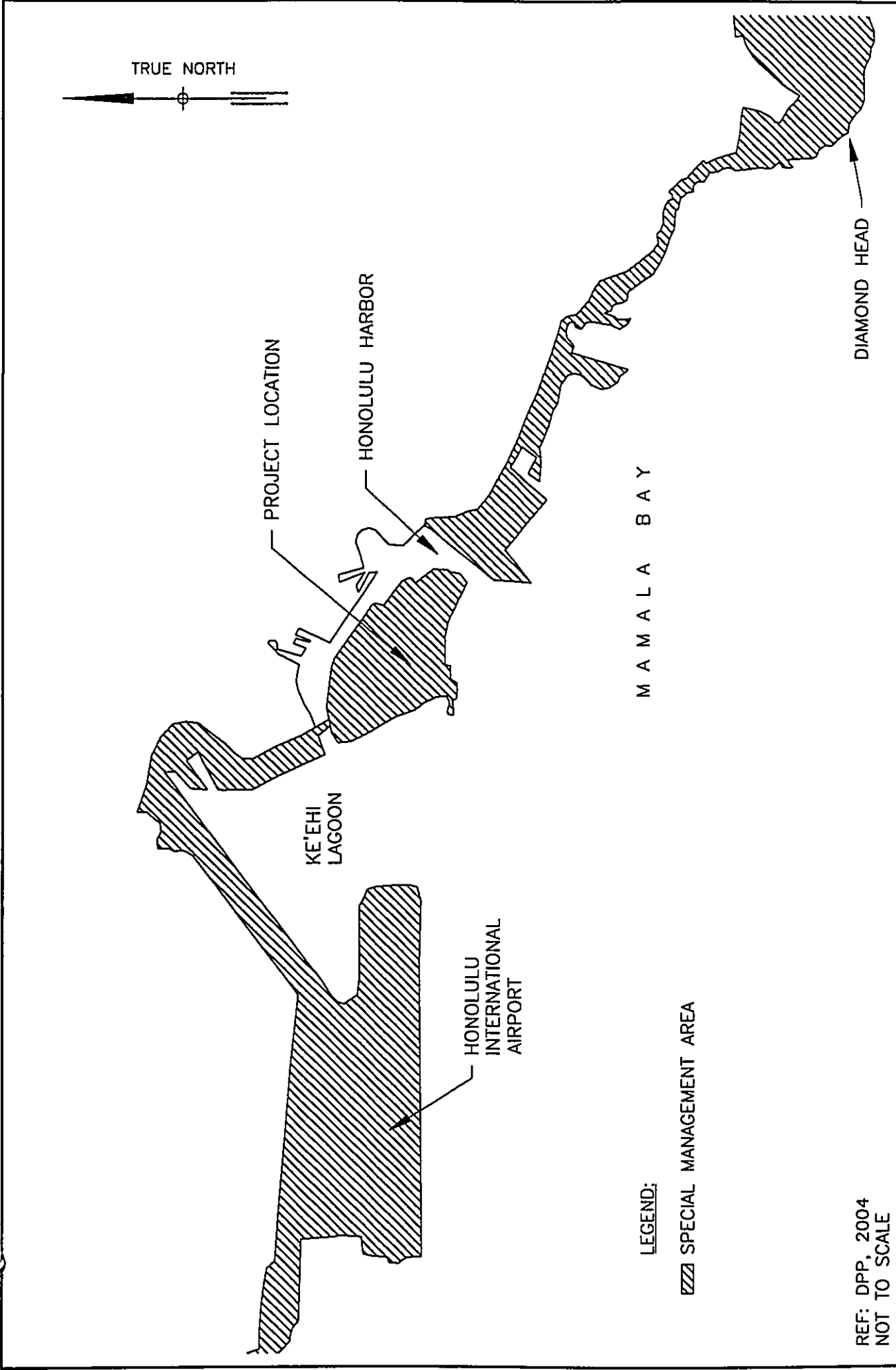
Department of Public Works

Grading Permit

City and County of Honolulu

Department of Planning and Permitting

Approval of a Major Special Management Area Use Permit



REF: DPP, 2004
NOT TO SCALE



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THE FUTURE

FINAL ENVIRONMENTAL ASSESSMENT

SPECIAL MANAGEMENT AREA MAP
SAND ISLAND WWTP, O'AHU, HAWAII

FIGURE
5-1

6.0 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY.

The proposed action will improve the existing conditions of the Sand Island WWTP through the prevention of degradation of air, land, and water. The proposed action is consistent with existing land use policies and is not anticipated to adversely impact surrounding areas. The anticipated future use of the project site as part of the Sand Island WWTP will provide the facilities necessary for public wastewater services. Therefore, enhancement of public health and welfare, enhancement of long-term productivity, and continued economic development is anticipated.

7.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES BY THE PROPOSED ACTION.

Implementation of the project will commit irretrievable loss of construction materials and capitol resources. However, the commitment of these irretrievable resources will provide for the benefit and enhancement of public wastewater services. The long term benefit of the proposed action will outweigh the irretrievable loss anticipated during construction.

8.0 FINDINGS AND DETERMINATIONS

In accordance with the provisions set forth in Chapter 343, Hawai'i Revised Statutes, this EA has determined that the project will not have significant adverse impacts on the environment. The Draft EA was published in the Environmental Notice of the Office of Environmental Quality Control on September 23, 2005. Ten comment letters were received. The letters and the responses to them are attached as Appendix H. Substantive changes to the EA based on these comment letters are indicated in the Final EA by underlined text, as in this paragraph. The CCH Department of Design and Construction (DDC) has issued a Finding of No Significant Impact. The anticipated impacts will be temporary and will not adversely impact the environmental quality of the area. Therefore, it is recommended that an Environmental Impact Statement (EIS) not be required.

A review of the "Significance Criteria" used as a basis for the above determination is presented below. An action is determined to have a significant impact on the environment if it meets any one of the thirteen (13) criteria.

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

Development of the project will not involve the irrevocable loss or destruction of any natural or cultural resources.

Act 50, enacted by the Legislature of the State of Hawai'i (2000) requires state agencies and other developers to assess the effect of proposed land use or shoreline developments on the "cultural practices of the community and State as part of the HRS Chapter 343 environmental review process (2001). Its purpose has broadened, "to promote and protect cultural beliefs, practices and resources of native Hawaiians and other ethnic groups, and it also amends the

definition of 'significant effect' to be re-defined as "the sum of effects on the quality of the environment including actions that are...contrary to the State's environmental policies...or adversely affect the economic welfare, social welfare, or cultural practices of the community and State" (H.B. 2895, Act 50, 2000).

As suggested in the "Guidelines for Assessing Cultural Impacts" (OEOC 1997), consultation with organizations familiar with cultural practices and features associated with the project area is permissible in the process of determining the project's impacts on cultural practices in the area. According to the OEOC (1997), a "good faith effort" is required to investigate the potential cultural impact on a property. In the case of the present site, limited archival research was conducted, and copies of the Draft Environmental Assessment were sent to the O'ahu Office of Hawaiian Affairs and the State Historic Preservation Division. The responses obtained, included in Appendix H, provide a good faith level of effort.

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

The proposed action will not curtail the range of beneficial uses of the environment. The existing use of the project site and the Sand Island WWTP are for industrial activities.

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 project would be in conformance to the Chapter 344, HRS, State Environmental Policy, to enhance the quality of life. It is the long-term goal of the project to prevent degradation of air, land, and water.

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

The proposed action is not anticipated to have significant effects on the economic or social welfare of the community or the state.

5. Substantially affects public health;

The proposed action is not anticipated to have substantial effects on public health. Short-term impacts associated with construction are generally unavoidable and would be mitigated according to the measures described in Chapter 4.0 of this EA. The proposed action will prevent degradation of air, land, and water.

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

The proposed action is not anticipated to involve substantial secondary impacts, such as population changes or effects on public facilities.

7. Involves a substantial degradation of environmental quality;

The proposed project is not anticipated to involve a substantial degradation of environmental quality. The project site is currently part of the existing Sand Island WWTP. The proposed action will prevent degradation of air, land, and water.

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

The proposed action is not anticipated to result in cumulative effects; therefore, it would not involve a commitment to larger actions.

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

The proposed project is not anticipated to have substantial effects on a rare, threatened, or endangered species, or its habitat. The majority of what is now Sand Island, including the project site, is man-made created from dredge material placed over a reef platform that extended seaward from the approximate seaward boundary of the present island. There are no known threatened or endangered species or habitats located at or within the vicinity of the project site.

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

No significant impacts on the area's long-term air or water quality or ambient noise levels are anticipated to result from the project. There will be some short-term impacts on the air quality and noise levels as a result of project construction. Adequate mitigation measures will be implemented as described in Section 4.0 of this EA.

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, freshwater, or coastal waters;

The project is not anticipated to affect environmentally sensitive areas. However, the proposed action is located within the Special Management Area (SMA). The proposed action is consistent with ROH, Chapter 25, Section 3.2 and is not anticipated to: restrict access to beaches, recreation areas, and natural reserves; alter existing land forms; or block scenic views and vistas. A Major SMA Use Permit will be filed as part of the proposed action.

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

The proposed action will not significantly affect the area's visual resources including scenic vistas or view planes.

13. Requires substantial energy consumption.

The proposed action will not require substantial energy consumption relative to other similar projects.

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9.0 AGENCIES AND ORGANIZATIONS CONSULTED

	Consulted Agency or Group	Response Received
Federal Agencies	U.S. Army Corps of Engineers	✓
	U.S. Fish and Wildlife Service	
	U.S. Environmental Protection Agency	
	Federal Aviation Administration	✓
State Agencies	Department Business Economic Development and Tourism	✓
	Department of Health	✓
	Department of Land and Natural Resources	✓
	Department of Transportation	✓
	Office of Environmental Quality and Control	✓
	Office of Hawaiian Affairs	✓
	State Historic Preservation Division	
	University of Hawaii Environmental Center	✓
County of Honolulu	Board of Water Supply	✓
	Department of Environmental Services	✓
	Department of Facility Maintenance	✓
	Department of Parks and Recreation	✓
	Department of Planning and Permitting	✓
	Department of Public Works	
	Department of Research and Development	
	Department of Transportation Services	✓
	Honolulu Fire Department	✓
	Honolulu Police Department	
Individuals and Groups	State Senator Suzanne Oakland	✓
	Representative Romy Cachola	✓
	EnviroWatch	
	Hawai'i Electric Light Company	
	Kalihi Palama Neighborhood Board	
	Sand Island Business Association	✓
	Sand Island Treatment Center	
	Sierra Club	

10.0 REFERENCES CITED

- Department of Business, Economic Development and Tourism (DBEDT), 2004. State of Hawai'i Data Book, State of Hawai'i, 2004
- Department of Housing and Urban Development (HUD), 1984. Department of Housing and Urban Development Environmental Criteria and Standards, Title 24, CFR, Part 51, 44 FR 40860, July 12, 1979; Amended by 49 FR 880, January 6.
- Department of Planning and Permitting (DPP), 2004. Oahu General Plan, City and County of Honolulu, 2004
- Department of Planning and Permitting (DPP), 2004. Primary Urban Center Development Plan, City and County of Honolulu, 2004.
- Department of Transportation (DOT), 1977. Noise Analysis and Abatement Policy, Highways Division, State of Hawai'i, June.
- Department of Transportation (DOT), 1982. Federal Highway Administration Procedures for Abatement of Highway Traffic Noise, Title 23, CFR, Chapter 1, Subchapter J, Part 772, 38 FR 15953, June 19, 1973; Revised at 47 FR 29654, July 8 1982.
- Environet, Inc., 2003a. *Phase 1 Environmental Site Assessment, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Report prepared for R.M. Towill Corporation.
- Environet, Inc., 2003b. *Soil Management Plan, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Report prepared for R.M. Towill Corporation.
- Environet, Inc., 2003c. *Human Health Risk Assessment, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Report prepared for R.M. Towill Corporation.
- Environet, Inc., 2005a. *Additional Soil Sampling Investigation, Soil Management Project, Eastern Investigation Area, Sand Island, Honolulu, Hawai'i*. Report prepared for City and County of Honolulu, Department of Design and Construction.
- Environet, Inc., 2005b. *Remedial Design Report, Soil Management Project, Sand Island, Honolulu, Hawaii*. Report prepared for the City and County of Honolulu Department of Design and Construction.
- Mink, J.F. and Lau, L.S. 1990. *Aquifer Identification and Classification for O'ahu: Groundwater Protection Strategy for Hawai'i*. Water Resources Research Center Technical Report No. 179.
- R.M. Towill Corp., 2001. *Final Environmental Assessment, Sand Island Wastewater Treatment Plant Modifications and Expansion, Honolulu Hawai'i*. Report prepared for the City and County of Honolulu Department of Design and Construction.

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State of Hawai'i Department of Health, 1998. Fact Sheet, Draft, Authorization to Discharge under the National Pollutant Discharge Elimination System and Zone of Mixing for the City and County of Honolulu, Department of Environmental Services, Sand Island Wastewater Treatment Plant.

U.S. Department of Agriculture Soil Conservation Services and the University of Hawai'i Agricultural Experiment Station, *Soil Survey of Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lana'i*, State of Hawai'i. August 1972.

United States Environmental Protection Agency. 1995. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition, AP-42. Report prepared by the EPA, Research Triangle Park, North Carolina, January 1995.

United States Environmental Protection Agency. 2002. User's Guide to MOBILE6.0, Mobile Source Emission Factor Model. Report prepared by EPA Office of Transportation and Air Quality, Assessment and Standards Division, Ann Arbor, Michigan, January 2002.

Wentworth, C.K. 1951. *Geology and Groundwater Resources of the Honolulu-Pearl Harbor Area, O'ahu, Hawai'i*. Report prepared by the Board of Water Supply, City and County of Honolulu, Honolulu, Hawai'i.

Appendix A

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Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

APPENDIX A

FINAL ENVIRONMENTAL ASSESSMENT, SAND ISLAND WASTEWATER TREATMENT
PLANT, HONOLULU, HI APRIL 2001

FINAL ENVIRONMENTAL ASSESSMENT
PREPARED IN ACCORDANCE WITH CHAPTER 343 HAWAII REVISED STATUTES

SAND ISLAND WASTEWATER TREATMENT PLANT MODIFICATIONS AND EXPANSION

HONOLULU, OAHU, HAWAII

April 2001

City and County of Honolulu
DEPARTMENT OF DESIGN AND CONSTRUCTION
650 South King Street
Honolulu, Hawaii 96813



R. M. TOWILL CORPORATION
420 Waikamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

1-17932-1E

FINAL
ENVIRONMENTAL ASSESSMENT


SAND ISLAND WASTEWATER
TREATMENT PLANT MODIFICATIONS AND
EXPANSION
Honolulu, Oahu, Hawaii

TMK: 1-5-41: 05

This document is prepared pursuant to Chapter 343, Hawaii Revised Statutes

Proposing Agency:
City and County of Honolulu
DEPARTMENT OF DESIGN AND CONSTRUCTION
650 South King Street
Honolulu, Hawaii 96813

RESPONSIBLE OFFICIAL:



RAF M. LOUI, P.E.
Director

4/17/01
DATE

Prepared by:
R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

April 13, 2001

REPLY TO
ATTENTION OF

WES		KTS	
R-F	YES	NM	
ATT		BRT	
RECD APR 17 2001			AMTC

Regulatory Branch

Mr. Brian Takeda
R.M. Towill Corporation
420 Waikamilo Street, Suite 411
Honolulu, Hawaii 96817-4941

Dear Mr. Takeda:

This letter is in response to your request for a jurisdictional determination regarding the construction of an access road between the Sand Island Wastewater Treatment Plant and the rehabilitation facility.

In a meeting held on April 5, 2000 with Ms. Lolly Silva of my staff, it was pointed out that the area where the road access will be constructed was determined to be a wetland by Ms. Evangeline Funk. However, in an earlier site visit conducted in August 2000 by Ms. Silva, this area was not considered a water of the U.S., as there was no indication of an ordinary high water mark, therefore is not subject to any Department of the Army (DA) permit requirements. If activities are conducted further east of this location, where the ditch makes a 90 degree turn, a DA permit would be required as waters of the U.S. are present and activities may be subject to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

Should you have further questions, you may contact Ms. Silva at 438-7023 or by FAX at 438-4060.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

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APPENDICES

APPENDIX A - WETLAND SURVEY: Sand Island Wastewater Treatment Plant
Wetland Survey, Botanical Consultants, September 12, 2000.

APPENDIX B - PHASE I, ENVIRONMENTAL SITE ASSESSMENT: Sand Island
Wastewater Treatment Plant, R.M. Towill Corporation, March 1999.

PROJECT SUMMARY

Project Name: Sand Island Wastewater Treatment Plant
Modifications and Expansion

Applicant: City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, Hawaii 96813

Agent: R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941
Contact: Brian Takeda, Senior Planner
Phone: (808) 842-1133 Fax: (808) 842-1937

Property Owner: State of Hawaii (Lessee: City and County of
Honolulu)

Approving Agency: Same as Applicant

Tax Map Key: 1-5-41: 05

Location: 1350 Sand Island Parkway
Sand Island, Honolulu, Oahu

Property Acreage: 50.0 Acres

State Land Use District: Urban

Existing County Zoning: I-3 - Waterfront Industrial District

Development Plan Land Use Designation: Sand Island, Public Facility

Special Designation: Special Management Area

Anticipated Determination: Finding of No Significant Impact (FONSI)

SECTION 1 INTRODUCTION

1.1 PURPOSE AND NEED FOR ACTION

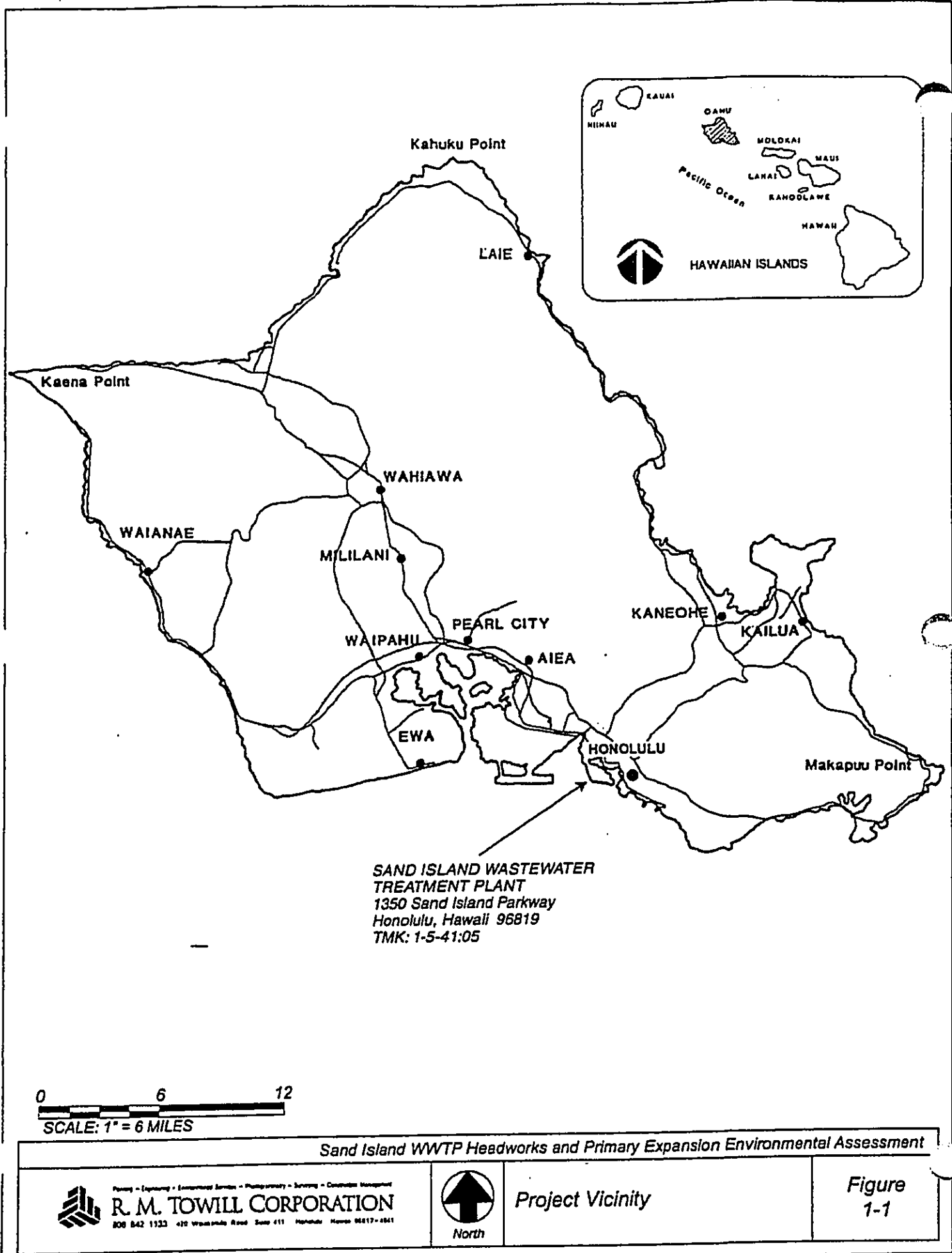
The Sand Island Wastewater Treatment Plant (SIWWTP) is an 82 million gallon per day (mgd) primary treatment facility serving metropolitan Honolulu. The facility is located on Sand Island (Figure 1-1 and Figure 1-2) and serves an area that extends from Moanalua-Aliamanu to Niu Valley-Paiko Peninsula. SIWWTP is owned and operated by the City and County of Honolulu (City), Department of Environmental Services.

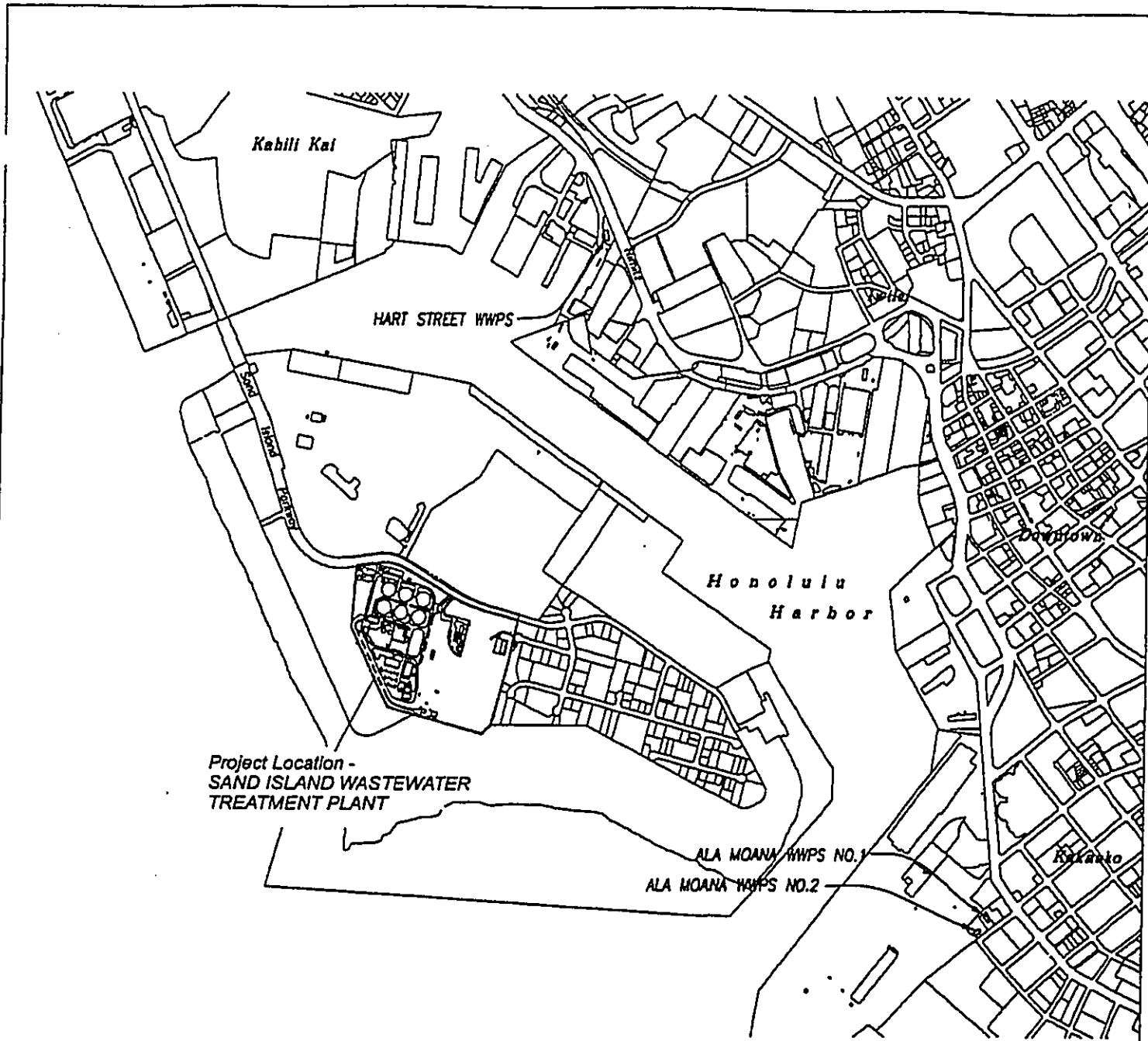
The plant has been in operation since 1981 and currently treats an average daily wastewater flow of 74 mgd. Treated effluent is discharged through the Sand Island Ocean Outfall. The outfall is approximately 12,350 feet long and equipped with multiport diffusers located at depths ranging from 225 to 240 feet. The quality of the plant effluent is regulated by National Pollutant Discharge Elimination System (NPDES) Permit Number HI 0020117 (Specific treatment requirements for compliance with the NPDES permit may be found in the Preliminary Engineering Report for the Sand Island Wastewater Treatment Plant Modifications, Unit 1, Phase 2A, September 1999).

The City and County of Honolulu plans to modify SIWWTP to achieve the following:

- Increase the treatment capacity from 82 mgd to 90 mgd;
- Increase the hydraulic capacity from 200 mgd to 271 mgd;
- Improve the performance of the facility; and,
- Improve the reliability of the facility.

The objectives of this project are to comply with the requirements of the NPDES permit for this facility.





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North

Project Location

Figure
1-2

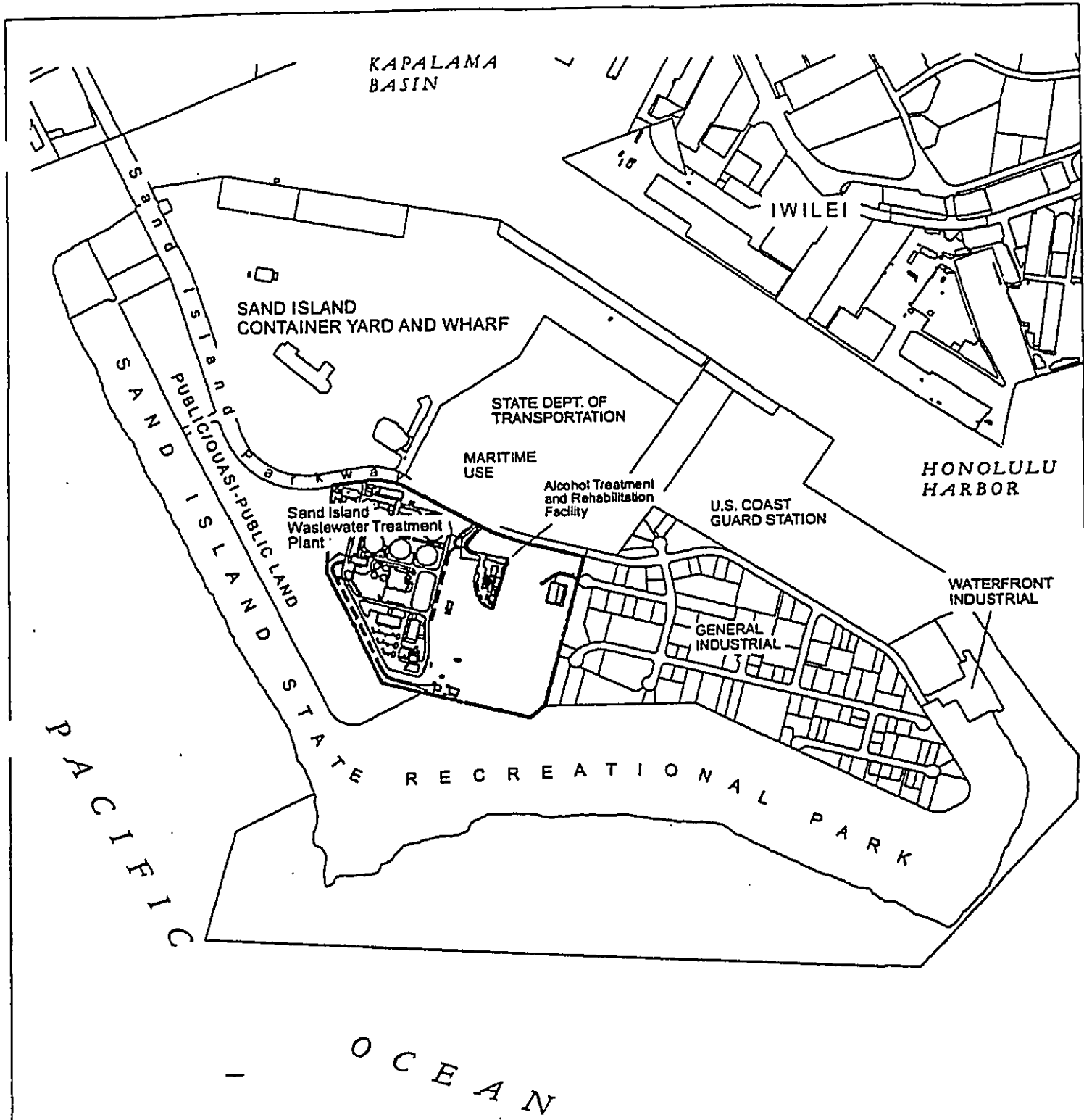
This Environmental Assessment (EA) is prepared based on the use of State lands and City and County of Honolulu funds for development pursuant to requirements of Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules (HAR), of the State Department of Health. The proposed modifications and expansion will be constructed in two separate construction contracts: "New Headworks and Primary Clarifiers 7 & 8" and "New Odor Control System and Modifications to Primary Facilities". The proposed action is based on and consistent with the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, December 1993, prepared for the Department of Wastewater Management (now, Department of Environmental Services), City and County of Honolulu.

Two other Environmental Assessments have recently been completed for projects at SIWWTP. The SIWWTP Disinfection Facility and Effluent Pump Station Environmental Assessment, prepared by Brown and Caldwell describes a proposed ultraviolet disinfection facility and a new effluent pump station. A FONSI was issued for the project in September 2000.

The second EA is the Sand Island Parkway Wastewater Pump Station Modifications Environmental Assessment, prepared by GMP Associates. The proposed project involves modifications to the Sand Island Parkway Wastewater Pump Station. A FONSI was issued for the project in January 2001. Both Environmental Assessments were prepared for the City and County of Honolulu (see Section 12, References).

1.2 DESCRIPTION OF SITE

The project area is located on the south coast of the Island of Oahu. SIWWTP is situated on Sand Island and bordered by the Matson Navigation Company and the U.S. Coast Guard Station Honolulu to the north, Sand Island District Park to the south, Sand Island Industrial Park to the east, and vacant State land to the west (Figure 1-3). Sand Island is bounded by Mamala Bay to the south and west and Honolulu Harbor to the north and east.



1000' 500' 0 1000'
 SCALE: 1" = 1000'

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Land Use Map

Figure
 1-3

Access to SIWWTP is directly from Sand Island Parkway. The Sand Island Parkway is under the jurisdiction of the Department of Transportation, State of Hawaii.

1.3 SCHEDULE AND CONSTRUCTION COST

Construction work is tentatively scheduled to start in November 2001 and is expected to continue until February 2004. The contractor will schedule general work activities between 7:00 am and 3:00 pm, weekdays. Work that is required beyond regularly scheduled hours and on weekends will be coordinated with the State DOH, to ensure that all conditions of the Community Noise Permit and Community Noise Variance are met.

The estimated construction cost is approximately \$200 to \$300 million, which will be paid for by City and County of Honolulu, Capital Improvement Project (CIP) funds.

SECTION 2 PROJECT DESCRIPTION

2.1 TECHNICAL CHARACTERISTICS

2.1.1 PROJECT CHARACTERISTICS

The proposed project will consist of construction of a number of major new facilities and the modification of a major portion of the existing facilities. The new and modified facilities are designed to expand treatment and hydraulic capacity of the plant and to improve operational efficiency and reliability. The proposed modifications will be constructed in two separate phases. The following is a summary of system improvements by category:

Liquid Stream Improvements:

- Expand and improve screenings facility;
- Expand and improve grit removal facility;
- Improve chemical feed facility and improve mixing; and,
- Conversion of the plant from a dissolved air flotation primary treatment system to a conventional gravity type primary treatment system.

Solids Handling Stream Improvements:

- Expand and refurbish the gravity thickening system;
- Refurbish and improve sludge holding and mixing systems;
- Expand and improve the dewatering system which will reduce the moisture content and volume of sludge to be handled; and,
- Provide a new modern incinerator which will burn the sludge and reduce sludge volume by an order of magnitude.

Auxiliary System Improvements:

- New and improved odor control systems are to be provided for facilities covered in this document; and,
- A new in-plant wastewater reclamation system is to be installed to provide for higher in-plant wastewater reuse quality.

The new and modified facilities are further discussed in detail in Table 2-1.

TABLE 2-1 NEW AND MODIFIED FACILITIES	
IMPROVEMENTS	PURPOSE AND DESCRIPTION
New Headworks Facility	New facility to replace the existing screenings building. Facility includes new and expanded screenings facility, new grit removal facilities, new chemical mixing facilities, new flow measurement facilities. Facility provides pretreatment, which is designed to remove large solids, rags and grit. These items can damage and reduce the service life of downstream equipment and piping.
Existing Flotator Clarifiers and New Clarifiers	The primary treatment process will be expanded and upgraded to increase solids removal capacity and performance. Two new clarifiers will be added. The 6 existing flotator clarifiers will be converted to conventional clarifiers. The hydraulic system will be modified to additionally improve performance. Existing sludge pumps and piping will be upgraded.
Existing Interim Chemical Treatment Facility	Enhances primary treatment by improving solids removal—Project involves adding one new polymer storage tank and one new aging tank to the existing facility.
Existing Gravity Thickeners and New Thickeners	Thickens primary sludge solids by gravity. Reduces water content and reduces volume of sludge to be handled. The 2 existing gravity thickeners will be upgraded. The system will be expanded by converting the 2 existing unused decant tanks to new gravity thickeners.

TABLE 2-1
NEW AND MODIFIED FACILITIES

Sludge holding tanks (Existing)	Provides for mixing and storage of sludge to provide for a consistent quality of sludge and a consistent feed rate—Project requires replacing the existing equipment and instrumentation system. Improved mixing and pumping systems to match future needs will be the end result.
Sludge conditioning system	Conditions the sludge to aid in improved water content reduction from sludge—A completely new chemical sludge conditioning system will be provided, replacing the existing. In addition, the existing thermal conditioning process will be demolished.
Sludge dewatering system	Provides for further water content reduction from sludge through, in this case, centrifugal action—Project calls for a reconstruction of the sludge dewatering (centrifuge) system. The centrifuge system will be relocated and the existing centrifuge facility will be demolished. New mezzanines and equipment rooms will be built within the existing Solids Handling Building and will house the planned 3 new high-solids centrifuges. All new associated equipment and piping will be installed as a result.
Incineration system	New incinerator is designed to significantly reduce the volume of sludge while significantly improving the air quality from emissions—Project will call for replacement of two existing multiple hearth incinerators with one new fluidized bed incinerator. Planned new mezzanines to be provided will also house new incinerator equipment and instrumentation.
Plant Wide Odor Control Systems	Comply with State Dept. of Health Air Quality Requirements for Odors—New odor control facilities will be provided for all of the facilities in this project for which it is required. Approximately 3 new odor systems will be installed.

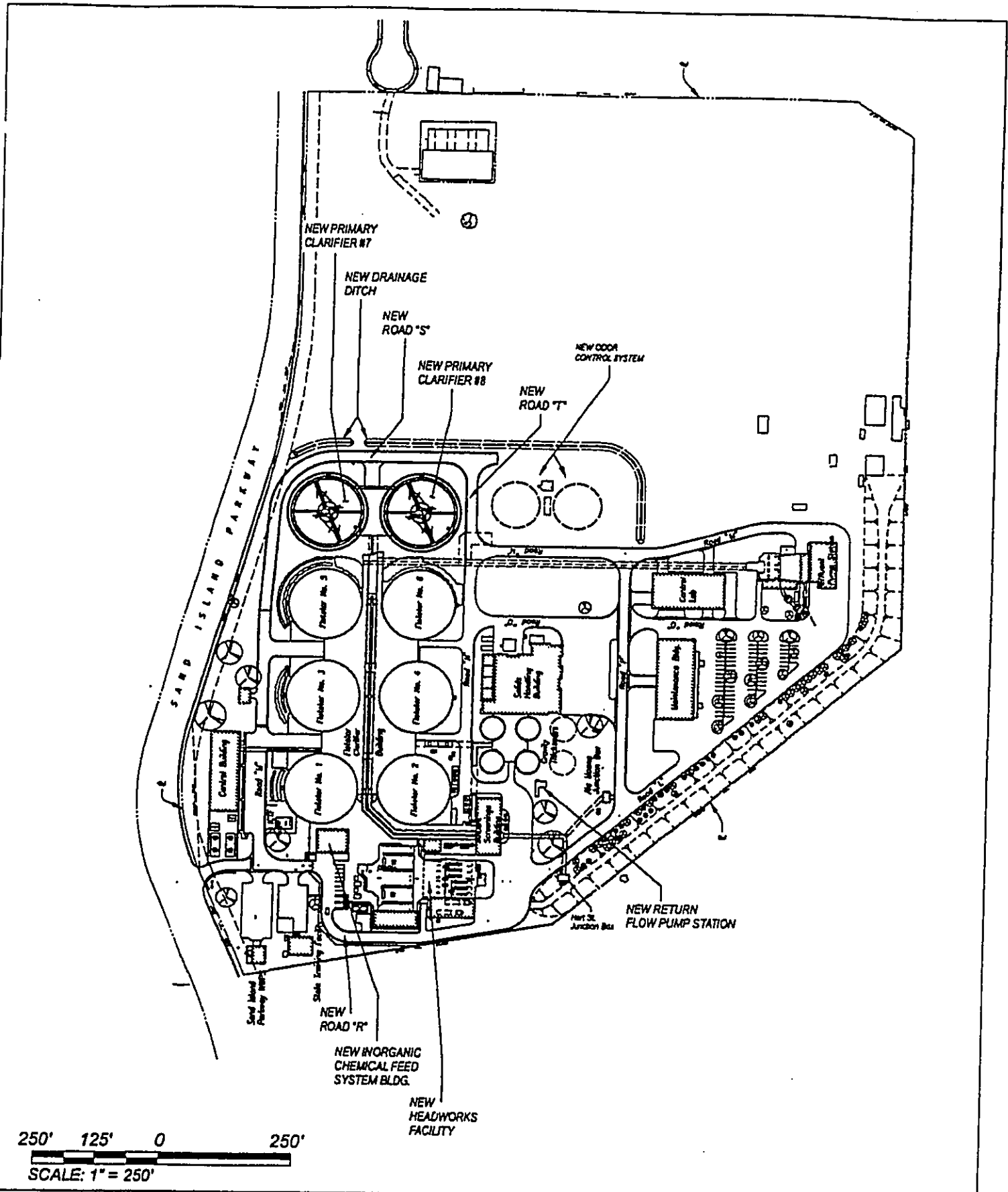
TABLE 2-1
NEW AND MODIFIED FACILITIES

Plant Reuse System and Odor Control System	The system will have combined functions including being one of several new odor control systems. This odor control system will also provide R-2 water for in-plant reuse. Odors from the primary clarifiers and solids handling system will be accommodated by this system.-This system will consist of trickling filters, pump stations, and secondary clarifiers and disinfection system. Reclaimed effluent from this system will be used for plant operations. The trickling filter will also serve as the first stage of a two-stage odor control system. The second stage of the odor control system will consist of activated carbon vessels.
--	--

2.1.2 CONSTRUCTION CHARACTERISTICS

The proposed construction plan is identified in Figure 2-1, and indicates locations for each of the project improvements. The demolition site plan is indicated in Figure 2-2. All demolition work will comply with Federal and State regulations.

According to results of a Phase I, Environmental Site Assessment (ESA), completed in March 1999 (see Appendix B for report and site locations investigated), there are no significant environmental concerns and no further environmental evaluation is required at this time. However, testing and monitoring activities will be undertaken in suspect locations, such as the old incinerator. As required, investigation will be made for asbestos, lead paint, and other hazardous materials to ensure the safety of work crews and the public. DOH, Solid and Hazardous Waste Branch, will be consulted if required, to ensure that appropriate steps and measures are taken. Disposal of hazardous materials, if necessary, will be sent to an approved disposal facility authorized by Federal, State and County agencies.



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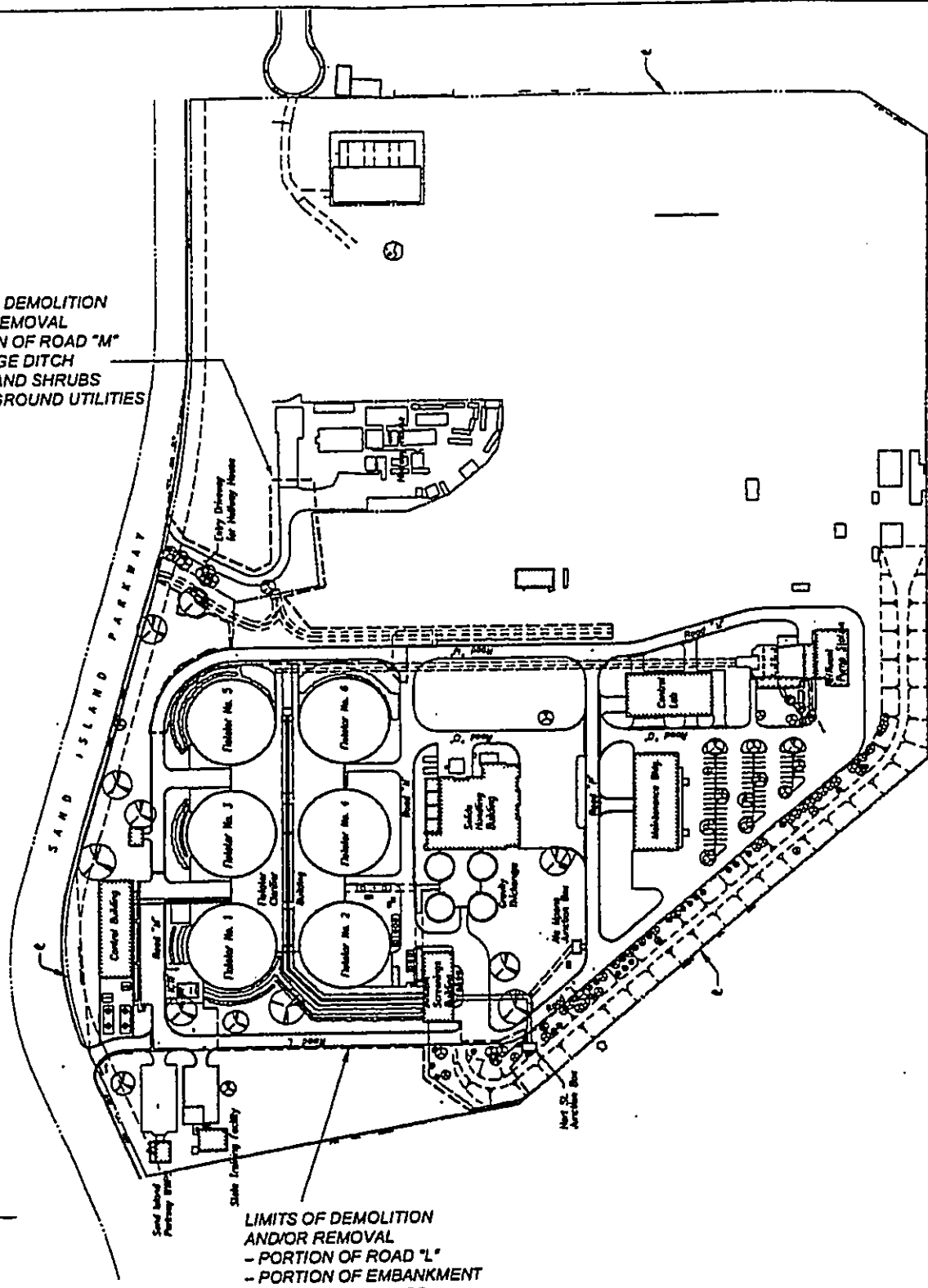


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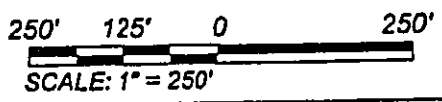
Proposed Construction Plan

Figure 2-1

LIMITS OF DEMOLITION
AND/OR REMOVAL
- PORTION OF ROAD "M"
- DRAINAGE DITCH
- TREES AND SHRUBS
- UNDERGROUND UTILITIES



LIMITS OF DEMOLITION
AND/OR REMOVAL
- PORTION OF ROAD "L"
- PORTION OF EMBANKMENT
- TREES AND SHRUBS
- UNDERGROUND UTILITIES



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Demolition Plan

Figure 2-2

Grading and excavation will be required for the construction of the new facilities and roadways. The grading requirements are still being developed, but are expected to be minimal because the site is relatively flat. The excavation quantities are also under development, but a preliminary estimate is 125,000 cubic yards. This quantity includes the excavation work needed to construct and install the underground utilities, headworks structure, two clarifiers, odor control system, pump stations, and other various structures. This quantity may increase or decrease as the project's design is developed. All renovations and new construction will be designed and constructed to development standards, rules, and regulations of the State and City and County of Honolulu. Precautions and alternate access routes will be provided to prevent adverse impacts to plant operations from grading and excavation activities.

As appropriate, construction of new facilities and roadways will be coordinated with agencies including State Department of Transportation, City and County of Honolulu, Department of Planning and Permitting, and other agencies as required.

2.1.3 UTILITIES

Water is provided to SIWWTP through an existing 8-inch water main which is connected to a Board of Water Supply (BWS) 16-inch water main located along Sand Island Parkway. According to BWS, there is sufficient existing water capacity to accommodate the proposed project (BWS letter to Dept. of Design and Construction, March 9, 2001).

Electricity is provided by overhead service lines which are metered by Hawaiian Electric Company (HECO) at the Switchgear Building of the plant. New backup emergency generators will be installed to serve the future facilities. In the event of a utility power outage the generators will automatically start and provide power to the essential equipment of the plant. The City is presently evaluating the potential to convert bio-gas to electricity. This type of conversion facility will be pursued for this project if it is deemed cost effective.

According to HECO, a new distribution substation is planned to serve increasing load in the Sand Island area. This will include the addition of two new 46 kilovolt (kV) circuits which

will be extended from the existing Sand Island substation to the proposed new substation (HECO letter to Dept. of Design and Construction, March 22, 2001).

Surface drainage will be accomplished by replacing an existing unlined ditch with a lined ditch. Surface drainage will enter the proposed ditch through existing culverts (90% of drainage) and curb and gutter drains. The proposed ditch will drain into an existing man-made ditch which eventually discharges into Honolulu Harbor.

2.1.4 SOLID WASTE

Plant Operations Solid Waste:

The existing solids handling treatment units include sludge screening and grit removal, gravity thickeners, wet sludge storage tanks, thermal conditioning, dewatering, and incineration (currently not in use). Dewatered sludge, screenings and grit are currently hauled to the Waimanalo Gulch Sanitary Landfill for disposal. The auxiliary systems include the effluent reuse system and the various odor control systems.

Although plant expansion and improvements will result in more solids being removed from the liquid stream, with the implementation of new sludge dewatering facilities and a new incineration system, the amount of solids requiring disposal will decrease significantly.

The new screenings facility (at the new headworks) will significantly increase the amount of screenings removed. The new grit removal facility (also at the new headworks), will also significantly increase the amount of grit removed. The screenings and grit is planned to be hauled to County landfill facilities. From a screenings and grit standpoint, the amount of these solids requiring disposal will increase significantly. However, these solids, represent but a small fraction (less than 10%) of the total solids requiring disposal.

The larger amount of solids are to be generated from the removal of suspended solids at the primary clarifiers. With the improvements and expansion of the facility, the expected performance improvement, the amount of solids being removed from the liquid stream will

increase measurably, in the order of 15% to 20% in dry weight. However with the improved clarifier process, the improvements in the solids handling stream, the amount of solids requiring disposal to County facilities will significantly decrease because of the following:

- Improved thickening and dewatering processes which will reduce the water content, and therefore the overall sludge volume requiring disposal.
- Incineration will reduce the solids dry weight by 80% to 90% (versus 20% for thermal conditioning) and wet volume for disposal by over an order of magnitude (over 10 times).

Construction Solid Waste:

Waste generated by the contractor during construction will be disposed of at an approved City facility.

2.1.5 LIQUID WASTES

Plant Operations Liquid Wastes:

The existing SIWWTP provides for primary treatment prior to disposal through a deep ocean outfall. Liquid stream treatment processes at the facility include bar screens, flotator clarifiers, an interim chemical treatment system, effluent screens, an effluent pump station, and the chlorination system. The proposed improvements will continue to provide primary treatment. The new headworks, improved inorganic chemical feed system, new primary clarifiers, modifications to the existing primary clarifiers, and new plant reuse system will improve the performance and reliability of the facility. The proposed treatment capacity will increase from the current 82 mgd to 90 mgd by the year 2020 (projected).

Construction Liquid Wastes:

Liquid wastes are not expected to be generated by the contractor during construction.

SECTION 3
AFFECTED ENVIRONMENT, POTENTIAL IMPACTS,
AND MITIGATION MEASURES

3.1 PHYSICAL ENVIRONMENT

3.1.1 CLIMATE

SIWWTP is located at Sand Island within an industrialized sector of urban Honolulu. Winds are primarily northeasterly tradewinds which are the result of the Northern Hemisphere Hadley Cell. Occasionally, during the winter months, storms are accompanied by winds from the south which are sometimes referred to as Kona winds. Average wind speeds for Honolulu range from approximately 10 to 15 miles per hour with occasional gusts of +40 miles per hour. Temperatures range from the mid-70s to the upper 80s with occasional reaches into the +90 degrees Fahrenheit range (Atlas of Hawaii, 1998). The average annual temperature recorded at Honolulu International Airport was 78.6 degrees Fahrenheit.

Rainfall for the Honolulu area ranges from approximately 4 to 5 inches monthly during the winter months, November through January, to less than 1 inch during the drier months. Annual rainfall averages approximately 15 to 20 inches throughout the remainder of the year. Average relative humidity in Honolulu has historically ranged from a high of 77.2% during January, to a low of 64.8% which is typically reached in June. The average annual humidity level is approximately 69 to 70% (Atlas of Hawaii, 1998).

—
POTENTIAL IMPACTS AND MITIGATION MEASURES

No impacts to the area climate will occur as a result of the proposed project.

3.1.2 TOPOGRAPHY, GEOLOGY, AND SOILS

The proposed project will be developed within the existing SIWWTP. The overall terrain and geology of Sand Island is primarily made up of fill land. The project site is virtually flat with

ground elevations ranging from 5 to 10 feet relative to mean sea level (msl). This is due to prior grading activities when Sand Island was enlarged using primarily dredged materials upon which the SIWWTP facilities were built.

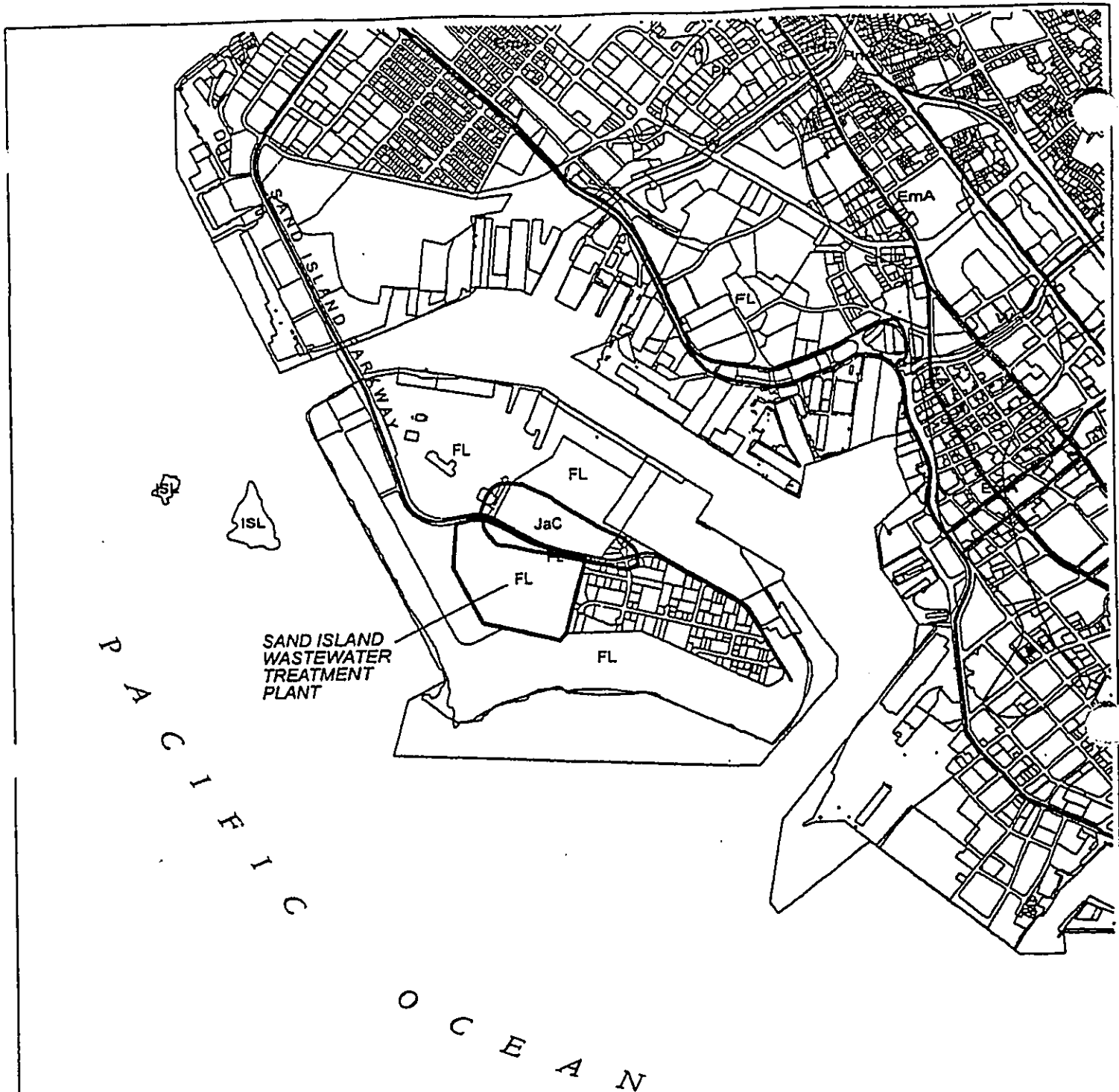
Soils found at the project site include Fill Land, mixed (FL) and Jaucas Sand (JaC) (Figure 3-1). Fill land consists of areas filled with material from dredging, excavation from adjacent uplands, garbage and bagasse and slurry from sugar mills.

The Fill Land, mixed (FL) land type occurs mostly near Pearl Harbor and in Honolulu, adjacent to the ocean. It consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources. This land type is used for urban development including airports, housing areas and industrial facilities (Soil Conservation Service, 1972).

Jaucas Sand, 0 to 15 percent slopes (JaC), occupies a small area of the plant near the Sand Island Parkway. In most places at SIWWTP the slope does not exceed 7 percent. In a representative profile JaC is single grain, pale brown to very pale brown, sandy, and more than 60 inches deep. In places the surface layer is dark brown as a result of accumulation of organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile. Permeability is rapid and runoff is very slow to slow. The hazard of water erosion is slight, but wind erosion is a severe hazard where vegetation has been removed. The available water capacity is 0.5 to 1.0 inches per foot of soil. This soil is used for pasture, sugarcane, truck crops, and urban development (Soil Conservation Service, 1972).

POTENTIAL IMPACTS AND MITIGATION MEASURES

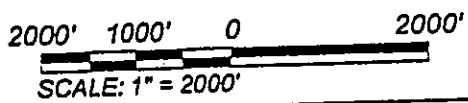
The proposed project is not expected to have a significant impact on the topography of the area. This is due to proposed construction activities which will primarily be located within the existing wastewater treatment plant facility. Minimal earthwork will consequently be required to accommodate the proposed facilities.



LEGEND

- JaC - Jaucas sand, 0-15 percent slopes
- FL - Fill land, mixed

Source: Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, U.S. Dept. of Agriculture, Soil Conservation Service, August 1972



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North

Soils Map

Figure
3-1

As required, project Best Management Practices (BMPs) and soil erosion control measures will be practiced to minimize potential for adverse impacts.

3.1.3 HYDROLOGY

According to the Flood Insurance Rate Map (FIRM 1998), the project site is located within Zone X and Zone A (Figure 3-2). Zone X defines areas outside of the 500 year flood and Zone A defines areas where no base flood elevations have been determined (Flood Insurance Rate Map, Community-Panel No. 15003C0365E, July 31, 1998). New FIRM data, provided after completion of the 1998 FIRM maps, however, have since determined the regulatory flood elevations for the area of SIWWTP contained in Zone A, to range from 5.9 feet to 5.7 feet above mean sea level (Dept. of Planning and Permitting letter to Dept. of Design and Construction, March 19, 2001).

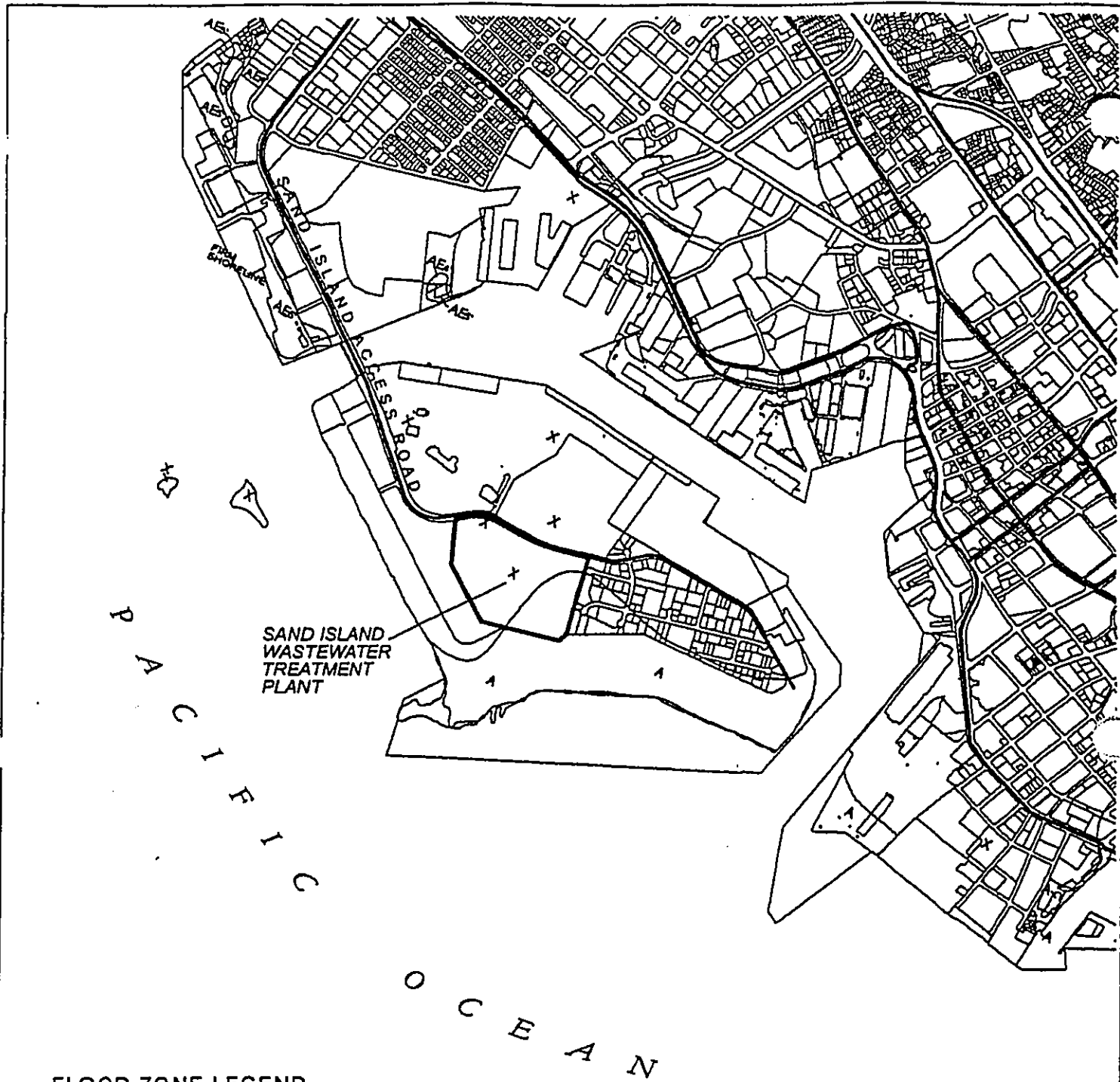
The proposed project modifications are located in Zone X. Zone A contains land in an unused portion of the project site. The overall project site is located outside the tsunami inundation zone.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed project is not expected to have adverse impacts to hydrology as work activities will be limited to areas defined as Zone X. As appropriate, a Flood District Certification will be filed to ensure that planned facilities are constructed at an acceptable elevation.

3.1.4 FLORA AND FAUNA

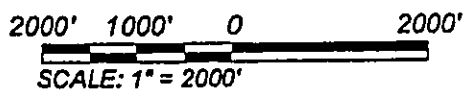
The proposed project is located within an existing wastewater treatment facility in a highly altered environment. Consequently, no rare, threatened or endangered flora or fauna species have been observed to exist at the project site. Species most commonly frequented at the site include introduced and exotic flora and fauna. Several introduced fauna including the Common Indian Mynah (*Acridotheres tristis*), House Sparrow (*Passer domesticus*), Spotted or Lace-necked Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), and Cardinal (*Cardinalis cardinalis*) have been observed at the project location. Mammals such as stray cats, rats and mice have also been observed in the vicinity.



FLOOD ZONE LEGEND

Special Flood Hazard Areas Inundated by 100-Year Flood	
ZONE A	No base flood elevations determined.
Other Areas	
ZONE X	Areas determined to be outside 500-year flood plain.

Source: National Flood Insurance Program, Flood Insurance Rate Map
Community-Panel Number 15003C0365E, July 31, 1998,
Federal Emergency Management Agency.



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North

Flood Insurance Rate Map

Figure
3-2

Flora species surrounding an existing wetland site (drainage ditch) are identified in Section 3.1.6-Wetland Ecosystem.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed project site is located within the SIWWTP. Rare, threatened, or endangered flora or fauna are not known to utilize the site for either habitat or for foraging purposes. Potential for adverse impacts are not anticipated.

3.1.5 OCEAN ECOSYSTEM

The SIWWTP is located within the East Mamala Bay region. According to the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, 1993, the variety of aquatic fauna in East Mamala Bay is considerably limited when compared to coastal areas in more rural portions of Oahu. The cumulative impact of approximately 200 years of urban development on the bay's reef ecosystem, as well as development pressures placed upon the food chain by extensive fishing and food gathering, have left the marine biota relatively depleted when compared to other areas around Oahu.

The effluent will be discharged through the existing 84 inch ocean outfall. Additional specific information on the outfall and effluent water quality may be obtained from the SIWWTP Disinfection Facility and Effluent Pump Station Environmental Assessment, September 2000, and the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, December 1993.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed project is not expected to result in potential for adverse environmental impacts to the ocean ecosystem due to the expected overall improvement in effluent quality that will result from the proposed project. There are no known threatened or listed endangered species present which would be subject to potential negative adverse impacts associated with the proposed project. The proposed liquid stream upgrades are anticipated to reduce the amount

of Biochemical Oxygen Demand (BOD) and Suspended Solids (SS) discharged through the ocean outfall.

3.1.6 WETLAND ECOSYSTEM

The project site was preliminarily evaluated by the Army Corps of Engineers to ascertain potential for impacts to a nearby drainage ditch which was constructed during establishment of the SIWWTP. Although it was preliminarily determined that there would be no adverse impacts due to the proposed project a followup wetlands survey was undertaken by Botanical Consultants in September 2000. The purpose of the survey was to ascertain the presence and potential for disturbance to existing wetland resources within the project area. The findings of the survey served to indicate that while the proposed work would be located up to the boundary of the wetland area, that the proposed project would be located outside of the wetland. As noted by the survey, although some of the mangrove trees and some of the pickle weed extend beyond the marked boundary, all of the wetland associated flora are rooted within the wetland area. (See Appendix A - Wetland Survey, and attached note).

The following is a summary of the survey findings:

1. A portion of the site southwest of the drainage canal was found to be partly taken up by equipment and waste concrete storage with bare open land covered in places with alien vegetation. Alien vegetation consisted of widely separated kiawe trees (*Prosopis pallida* (Numb. & Bonpl. ex Willd.) Kunth), some as much as thirty-five feet in height. The shrub layer consisted of a few widely scattered castor bean shrubs (*Ricinus communis* L.), koa haole (*Leucaena leucocephala* (Lam.) deWit), wild tobacco (*Nicotiana glauca* R. C. Graham), and Indian fleabane (*Pluchea Indica* (L.) Less.). The ground layer was comprised of low growing weeds including:

Australian saltbush (*Atriplex semibaccata* R Br.)
Flaveria trinervia (Spreng) C. Mohr.
Bidens alba (L.) DC
 Golden crown beard (*Verbesina encelioides* (Cav.) Benth. & Hook.)
 'aheahea (*Chenopodium murale* L.)
Trianthema portulacastrum L.
Sida ciliaris L.
 spiny amaranth (*Amaranthus spinosus* L.)
 khaki weed (*Alternanthera pungens* Kunth)
Chamaesyce maculata (L.) Small
Sporobolus pyramidatus (Lam.) Hitchc.

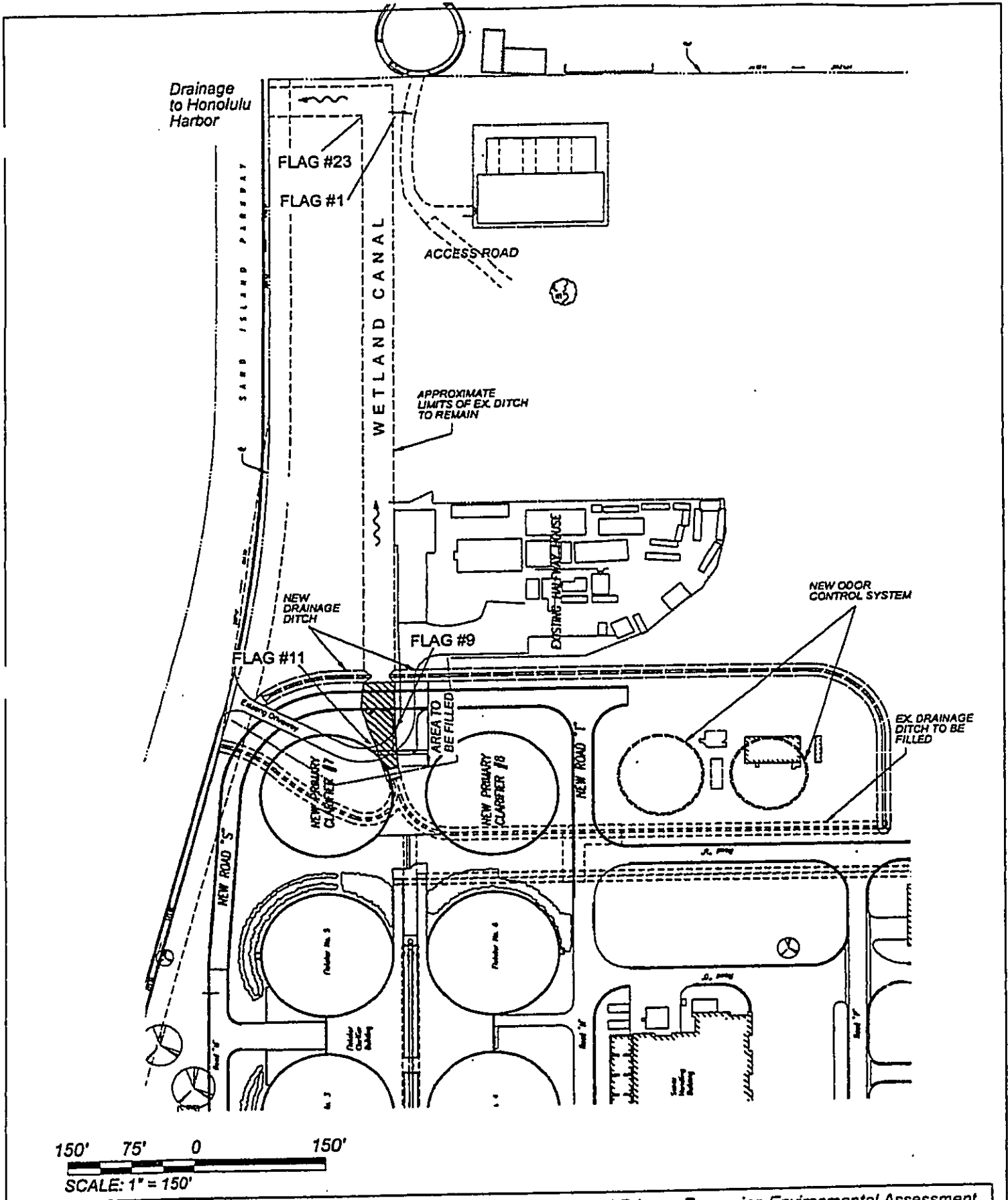
All species found appeared to be very stressed.

2. The strip of land between the canal and Sand Island Parkway contains open space surrounded primarily by kiawe trees, some koa haole bushes, a few grasses such as Guinea grass (*Panicum maximum* Jacq.), swollen fingergrass (*Chloris barbata* (L.) Sw.), and stargrass (*Chloris divaricata* R. Br.). *Boerhavia coccinea* Mill. and ivy gourd (*Coccinia grandis* (L.) Voight.) are well established in this area. Long branches of pickle weed (*Basis maritima* L.), some ten to twelve feet in length were seen growing out of the canal border.
3. The canal vegetation consisted of two obligate wetland species, pickle weed and red mangrove (*Rhizophora mangle* L.) (obligate species are those associated with a 95% probability that they will be found under wetland conditions). The facultative wetland shrub Indian fleabane is also plentiful along the canal (facultative species have a 34 to 66% probability of occurring under wetland conditions). In addition several weed species occur on the banks of the canal. They included wild tobacco, stargrass, spiny amaranth, kiawe trees, and bristly foxtail (*Setaria verticillata* (L.) P. Beauv.).

4. None of the vegetation found at the site is native to the Hawaiian Islands. There were no proposed or listed threatened or endangered species present on this site.

5. The wetland area is a trapezoidal shaped drainage ditch with steeply inclined banks about four or five feet in height. The canal was partly created by very old fill which was used to develop the flat land that surrounds the waterway. Of the three Corps of Engineers criteria that define a wetland, i.e. hydrophytic vegetation, standing water within 18 inches of the surface for at least three weeks of the growing season (hydrology), and the presence of hydric soils, two are met on this site.

The hydrophytic vegetation criterion is met by the presence in all parts of the canal by the aforementioned obligate and facultative plant species. The hydrology criterion is met by the presence of standing water in the full length of the canal. The depth of the water varies from a few inches to several feet. The third criterion, hydric soils, cannot be tested due to the drastic topographic change created by the steep banks of the canal and the fact that the soil surrounding the canal appears to be old fill. However, since the soil was saturated almost to the top of the inclined banks the upper lip of the bank was taken to be the edge of the wetland. The wetland area has been flagged with numbered blue flags. Flag #1 is located on the makai side of the wetland near the entrance of the site access road (Figure 3-3). From Flag # 1 along the rim of the wetland to the half-way house fence there is to be found flags #1 through #9. Flag #11 is located at the junction of the half-way house driveway and the wetland fence on the mauka side. Flags #11 through #23 mark the mauka rim of the wetland.



Sand Island WWTP Headworks and Primary Expansion Environmental Assessment

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Wetland Site
 Source: Sand Island Waste Water Treatment Plant
 Wetland Survey, Botanical Consultants,
 Sept. 12, 2000, Honolulu, Hawaii. Rev. 4/2001.

Figure 3-3

POTENTIAL IMPACTS AND MITIGATION MEASURES

The wetland located within the plant site and described by the survey is shown on Figure 3-3. The Army Corps of Engineers was again consulted concerning results of the botanical report on April 5, 2001. According to Ms. Lolly Silva, Corps of Engineers, the portion of the project site adjacent to Flag #11 and Flag #9 have been determined by the Corps to be outside the wetland area. Figure 3-4: Wetland Exclusion Area, identifies this area. The wetland is in a man-made drainage ditch which was part of the original plant construction in 1974. Based on results of the wetland survey and Corps of Engineers consultation, the proposed action which will include work to fill portions of the project site are not anticipated to result in potential for negative adverse impacts to wetlands.

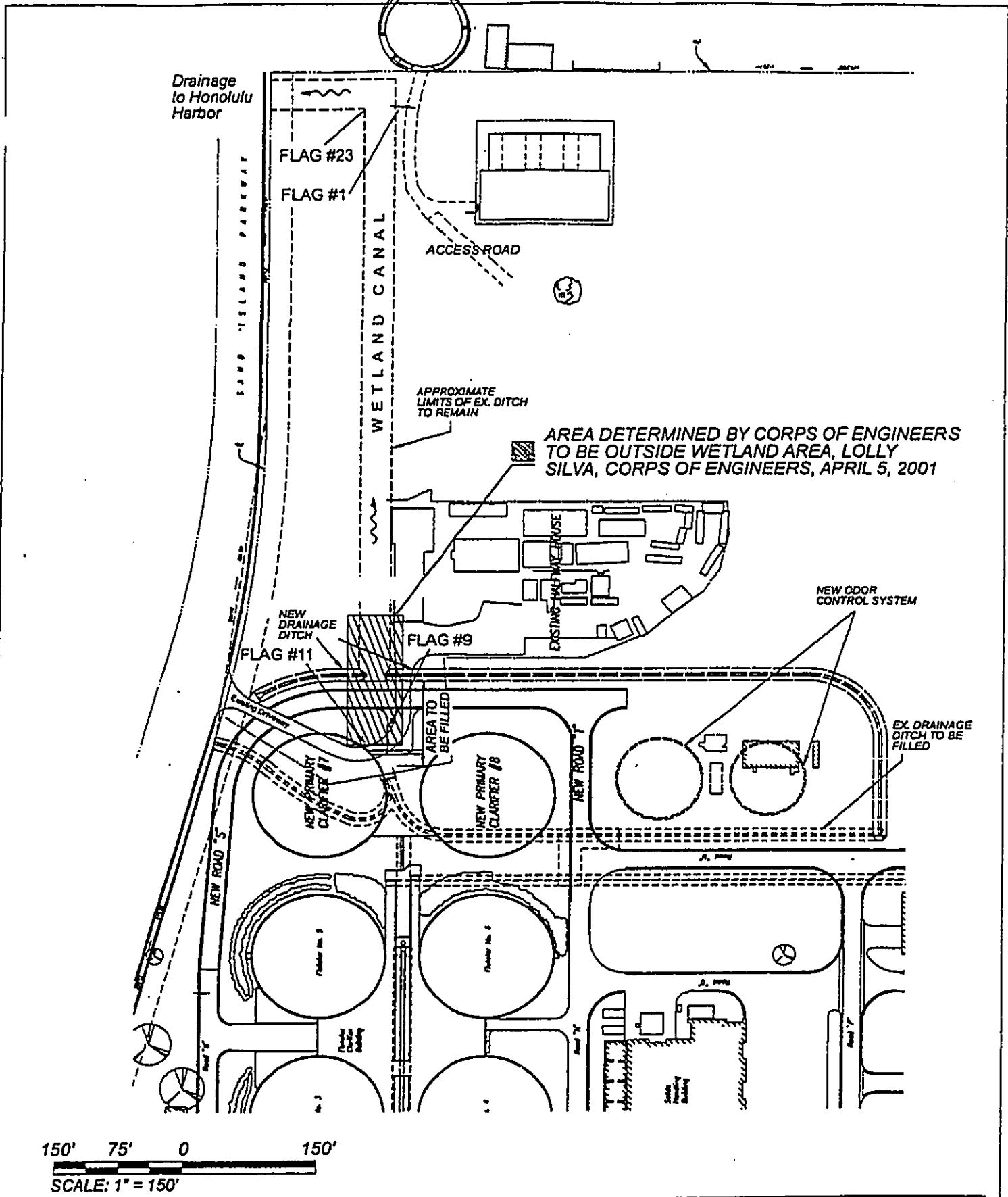
To further minimize potential for adverse impacts to adjoining areas construction will be sequenced and scheduled to avoid placement of materials, equipment, and demolition debris in locations subject to storm runoff which could enter the drainage ditch. This will also help to ensure against the creation of pools of impounded water which would facilitate the breeding of mosquitoes.

3.1.7 ARCHAEOLOGY

The project site is comprised of Fill Land, mixed (FL), and has been previously disturbed during construction of the existing SIWWTP. No archaeological sites are known within the area and none are expected due to the nature of Sand Island which was primarily constructed of fill material.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed project is not expected to result in potential for negative adverse impacts to archaeological resources. This is due to soils found at the project site which is comprised of fill land and mixed filled land. A review of records with the Department of Land and Natural Resources, State Historic Preservation Division, also indicates that there are no known historic sites at the project location (State Historic Preservation Division letter to Dept. of Design and Construction, March 5, 2001).



Sand Island WWTP Headworks and Primary Expansion Environmental Assessment



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North

Wetland Exclusion Area

Source: Sand Island Waste Water Treatment Plant Wetland Survey, Botanical Consultants, 9/12/2000, and Army Corps of Engineers, 4/5/2001, Rev. 4/2001.

Figure
3-4

However, in the event of unexpected discovery of historic or archaeological resources the Department of Land and Natural Resources, State Historic Preservation Division, will be notified at (808) 692-8026 for appropriate response and action.

3.1.8 AIR QUALITY

Hawaii lies within the Northern Hemisphere Hadley Cell, which is responsible for persistent northeast trade winds. Consequently, air quality is relatively good with the exception of occasional Kona or leeward storms that produce a low pressure system that brings southerly winds and precipitation. The Sand Island area is located within an industrial area that generally receives favorable trades.

Dust and emissions will be generated from construction vehicles and equipment including backhoes, trucks, pile driving equipment, generators, fuel tanks, etc., during construction. Fugitive dust, and vehicle and construction equipment will be sources of air pollution.

Three new odor control systems will replace existing odor control systems and provide odor control for facilities covered by this project.

The incinerator has been an area of air quality concern. The new incinerator is of a different type than the existing incinerator. It is of the "fluidized bed" type which is much cleaner and operates with emission levels lower than the existing multiple hearth type. The new incinerator will comply with 40 CFR Part 503 regulations of the Environmental Protection Agency (EPA) relating to the incineration of municipal sludge. The existing air permit issued by the State Department of Health will be modified to accommodate the new incinerator and odor control systems prior to construction.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigation of fugitive dust generated during construction will be handled through the use of periodic site watering and applicable on-site Best Management Practices (BMPs). Additional

measures as provided in Hawaii Administrative Rules (HAR) Chapter 11-60.1 - Air Pollution Control will also be followed and will include, but not be limited to, the following:

- The planning of project construction phasing should focus on: minimizing the amount of dust-generating materials and activities; centralizing material transfer points and on-site vehicular traffic routes; and, locating potentially dusty equipment in areas of least impact;
- An adequate water source at the site should be provided prior to start-up of construction activities;
- The project site should be landscaped with rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Dust should be controlled from shoulders, project entrances, and access roads; and,
- Adequate dust control measures should be provided on weekends, after hours, and prior to daily start-up of construction activities.

Vehicle and construction equipment exhausts will be a source of air pollution. Mitigation of potential adverse impacts associated with use of construction equipment, fuel tanks, and vehicle exhausts will be handled through adherence to applicable Federal, State and County regulations. As required, all machinery and vehicles will be required to be in proper working order with appropriate use of mufflers.

The proposed project modifications when completed are expected to result in improved ambient air quality with positive long term impacts on air quality surrounding the treatment plant.

3.1.9 NOISE

The project site is subject to noise generated from the existing SIWWTP. Other existing sources of noise include overflights of aircraft within the 70 DNL noise contour of Honolulu International Airport (DNL is a measure of the decibel noise level within an area surrounding

airports); industrial activities from light industrial parcels located east of the site involving auto repair, metals recycling and recovery, and related activities; and traffic from the nearby Sand Island Parkway.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Short term noise impacts associated with the proposed project will result from construction activity. Construction related noise will be generated by use of construction equipment and machinery such as bulldozers, backhoes, compressors, and pile driving equipment.

Management of short term noise impacts will involve use of mufflers and related noise reduction technologies. As required, construction equipment with mufflers in poor working condition shall be replaced or repaired. Possible preconsultation with the nearby Alcohol and Rehabilitation Facility may also be practiced due to the location of the facility to the proposed construction site.

When connections to existing wastewater facilities are necessary, construction will be scheduled during night hours to minimize impacts to wastewater service. Connections to the existing SIWWTP facilities will thereby be simplified since wastewater flows are significantly lower during the early morning hours. As required, a Noise Variance issued by the State Department of Health (DOH) will be filed.

Potential for long term noise impacts may result from operation of new equipment. This would include the use of machinery in the various buildings and tanks at the facility. All noise generated however, will be required to be at levels that are consistent with existing rules and standards of the State and County, including HAR, Chapter 11-46, Community Noise Control, which provides for the prevention, abatement and control of noise pollution in the State from stationary, agricultural, and industrial activities.

Mitigative measures to address noise generated by new SIWWTP machinery will include enclosure of noise generating machinery and use of acoustical walls. Prior use of these practices at the existing SIWWTP have helped to reduce noise to acceptable safe workplace

levels. It is expected that continued use of these practices by the City and County of Honolulu, Department of Environmental Services, will be sufficient for the proposed project.

3.1.10 SOLID AND HAZARDOUS WASTE

Solid waste will be generated during construction and during operation of the proposed modifications at SIWWTP. A Phase I, Environmental Site Assessment (ESA), to identify and assess potential for hazardous materials, and to determine if disposal will be required, was conducted in March 1999 (see Appendix B for report and site locations investigated). The locations for excavation and construction work are identified in Figure 2-1 and Figure 2-2.

The Phase I, ESA reviewed portions of SIWWTP which included: 1) Pretreatment Facility area; 2) Influent Screens Building area; and, 3) Flotator Clarifier Building area. Data collected and evaluated included a site reconnaissance to observe existing conditions, review of available Federal, State, and local records, and interviews with personnel having knowledge of potential environmental hazards in the area. According to the Phase I, ESA, there was no evidence of recognized environmental conditions in connection with affected areas of the property. Hazardous materials, consisting of suspect asbestos-containing materials and lead-containing paint were observed in a structure on the property, as were scattered areas of debris and solid waste.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Solid waste in the form of demolition debris which cannot be recycled for on-site purposes, e.g., landscaping or for use as fill, will be disposed of at an authorized City facility by the construction contractor. Wastewater sludge, which is a by-product of waste water treatment will continue to be processed and disposed of at an approved sanitary landfill facility.

The Phase I, ESA, indicates that the proposed project has no significant environmental concerns and recommends that no further environmental evaluation be required at this time. Given the current use of the site for a wastewater treatment facility, no hazardous materials beyond possible new discovery of asbestos and lead paint within the existing facility are

expected to be found. Potential for environmental concerns involving asbestos-containing and lead paint-containing constituents will be addressed through testing and monitoring activities in suspect areas that would be modified during construction. In the event that hazardous constituents are discovered appropriate measures will be taken to ensure the safety of work crews and the public. DOH, Solid and Hazardous Waste Branch, will be consulted if required, to ensure appropriate steps and measures are taken. Should disposal of hazardous materials be necessary, an approved disposal facility authorized by Federal, State and County agencies will be used.

3.1.11 SCENIC RESOURCES

Visually, the location surrounding SIWWTP is of an industrial area with land uses that are generally similar (Figure 1-3):

- North of the site and across from Sand Island Parkway is the Sand Island Container Yard and Wharf, and State Department of Transportation, maritime use area;
- Immediately east within the SIWWTP site is an alcohol treatment and rehabilitation facility surrounded by land that is currently undeveloped. Further east, outside of the SIWWTP site is a general industrial subdivision with auto repair, metals recycling and waste reclamation, and related industrial and light industrial uses;
- West of the site is the Sand Island Parkway, and uncleared public lands which are at the boundary of the Sand Island State Recreational Park; and,
- South and west of the site is the Sand Island State Recreational Park.

The proposed project will involve the development of structures which will support operations of SIWWTP. Existing structures at the site are approximately 30 to 80 feet high. Dimensions of major proposed structures will be as follows (all heights are from grade):

Flotator Clarifiers:	± 150 feet in diameter x ± 30 feet in height
Trickling Filters:	± 110 feet in diameter x ± 55 feet in height
Secondary Clarifiers:	± 100 feet in diameter x ± 30 feet in height

Heights for all structures will be limited to 60 feet, which is the maximum permissible in the I-3 (Waterfront Industrial District) zoning district.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed project is not anticipated to adversely impact the public's enjoyment of view planes from the SIWWTP to views of urban Honolulu and the Pacific Ocean beyond. Similarly, the proposed modifications are not expected to reduce or impede views from urban Honolulu to the SIWWTP and surrounding area. The site is within the I-3, Waterfront Industrial District designation of the City and County of Honolulu, Land Use Ordinance (LUO). The existing and proposed use of the site for expansion of the wastewater treatment plant will be consistent with this zoning designation.

Although the surrounding area is used for industrial purposes there is the nearby Sand Island Recreational Park. It is anticipated that most of the uses at the recreational area will be primarily directed within the park and to the beaches along the shoreline. Although park users will be able to view portions of the proposed expansion, potential for negative adverse view impacts are not expected.

3.2 POPULATION AND SOCIOECONOMIC CHARACTERISTICS

3.2.1 POPULATION AND ECONOMY

The existing Sand Island WWTP serves metropolitan Honolulu from Moanalua-Aliamano to Niu Valley-Paiko Peninsula and includes U.S. Army facilities at Fort Shafter and Tripler Army Medical Center. According to the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, 1993, the estimated population of the SIWWTP service area was 417,407 persons.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Potential for negative adverse impacts to the area population are not anticipated. This is because the purpose of the project is to meet conditions of the NPDES permit for the SIWWTP, to provide for future wastewater treatment needs, and to replace equipment that is nearing the end of its useful life.

The greatest potential impact from the project will be economic due to the cost of constructing the proposed modifications. Cost control will be handled through the use of value engineering and design approaches that will maximize the operating efficiency of the plant. The City will benefit by providing for improvements that will reduce future litigation due to violations of the: 1) Federal Clean Water Act and related water quality operating permits such as the SIWWTP National Pollutant Discharge Elimination System (NPDES) permit; and 2) air permits.

3.2.2 LAND OWNERSHIP, SURROUNDING LAND USE, AND LAND USE DESIGNATION

The Sand Island WWTP site is located on a 50 acre parcel (Figure 1-3) in the Honolulu judicial district identified as Tax Map Key (TMK): 1-5-41: 5. The parcel is owned by the State of Hawaii and leased to the City and County of Honolulu under General Lease No. S-4341. SIWWTP is located in the approximate midpoint of Sand Island. To the north are maritime facilities owned by the State Department of Transportation (DOT). Further to the northwest is the Sand Island Container Yard, and to the northeast is the U.S. Coast Guard Station. To the South is the Sand Island State Recreational Park under jurisdiction of the State of Hawaii. Immediately east of the facility is the Sand Island Treatment Center (an alcohol treatment and rehabilitation facility) occupying 70,567 square feet. Further east of the site are general industrial parcels used for auto repair, metals recycling and recovery, and related light industrial uses.

The State Land Use designation of the site is Urban. City and County of Honolulu Zoning for the parcel is I-3-Waterfront Industrial District. The current State Land Use designation

and City Zoning of the site supports continued use of the site for a wastewater treatment facility.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed project will modify and expand the existing wastewater treatment plant and is therefore not anticipated to result in potential for negative adverse impacts to existing land uses in the area.

The nearby Sand Island Treatment Center, which has been in operation since 1960, already operates within proximity to the wastewater treatment plant.

Potential impacts to the Sand Island Treatment Center are anticipated to be caused by additional odor and noise, both during construction and during operation of the modified SIWWTP facility. Potential for adverse impacts caused by odor and noise can be addressed somewhat by use of appropriate controls to limit vehicle and equipment exhausts and noise. This will include adherence by the construction contractor to Federal and State laws and regulations governing use of dust screens, mufflers, and proper upkeep of vehicles and equipment.

The proposed project will also remove and use the northwest corner of the Sand Island Treatment Center for the new clarifiers, drainage ditch, and road. This area is presently used by the Sand Island Treatment Center for parking during weekly family meetings. The City is currently investigating use of land adjacent to the treatment center to accommodate the needed parking space.

In the future, the relocation of the Sand Island Treatment Center may be considered to prevent any continuous adverse impacts to the facility, or to expand the treatment plant. The City, however, recognizes the important service that the Sand Island Treatment Center provides to the community, and any relocation actions will be closely coordinated between the City and the Sand Island Treatment Center to minimize impacts to its residents.

Surrounding land uses including industrial, light industrial, and commercial uses are not anticipated to be adversely impacted due to existing use of the site for the current SIWWTP.

SECTION 4
RELATIONSHIP TO STATE AND COUNTY
LAND USE PLANS AND POLICIES

4.1 HAWAII STATE PLAN

The Hawaii State Plan, Chapter 226, Hawaii Revised Statutes, serves as a written guide for the future long range development of the State. The Plan identifies statewide goals, objectives, policies, and priorities as policy statements to facilitate a future desired "Hawaii". The proposed project would be in conformance with the State Plan's objectives and policies for the physical environment, facility system, and sociocultural advancement through the provision of basic infrastructure necessary for public health and welfare.

"Section 226-13 - Objectives and policies for the physical environment-land, air, and water quality. 226-13 (a) Planning for the state's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:

- (1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.
- 1-5 Greater public awareness and appreciation of Hawaii's environmental resources."

"226-13 (b) To achieve the land, air, and water quality objectives, it shall be the policy of this state to:

- (2) Promote the proper management of Hawaii's land and water resources.
- (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.

- (4) Encourage actions to maintain or improve aural and air quality levels, to enhance the health and well-being of Hawaii's people.
- (6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities."

"Section 226-14 - Objective and policies for facility systems-in general. 226-14 (a) Planning for the state's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

- (1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.
- (2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.
- (3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.
- (4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems."

"Section 226-15 Objectives and policies for facility systems-solid and liquid wastes. 226-15 (a) Planning for the state's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:

- (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.
- (2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility and other areas."

"226-15 (b) To achieve solid and liquid waste objectives, it shall be the policy of this state to:

- (1) Encourage the adequate development of sewerage facilities that complement planned growth.
- (2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.
- (3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes."

"Section 226-20 Objectives and policies for socio-cultural advancement-health.

226-20 (a) Planning for the state's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:

- (1) Fulfillment of basic individual health needs of the general public.
- (2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.

226-20 (b) To achieve the health objectives, it shall be the policy of this state:

- (5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions."

4.2 STATE FUNCTIONAL PLANS

The proposed project is consistent with the State Health Functional Plan, 1989, which provides for further identification of objectives, policies, and implementing actions to address statewide needs, problems and issues relative to the provision of health services and health related facilities for the State. Objectives, policies, and implementing actions which support this project include, but are not limited to, the following:

"5. Objective: Environmental Programs to Protect and Enhance the Environment. Continued development of new environmental protection and health services programs to protect, monitor, and enhance the quality of life in Hawaii.

5.A. Policy: Air, Land, and Water Quality Programs.

The DOH will develop and implement new programs to prevent degradation and enhance the quality of Hawaii's air, land and water.

5.A.3 Implementing Action: Develop and implement a comprehensive Recreational Water Quality Monitoring Strategy.

5.A.4 Implementing Action: Develop and implement a Non-Point Source Pollution Program to protect recreational and other surface waters."

The proposed project will facilitate the monitoring of water quality at SIWWTP and the adjoining Sand Island State Recreational Park through adherence to water quality monitoring requirements as part of the National Pollutant Discharge Elimination System (NPDES) permit.

4.3 COASTAL ZONE MANAGEMENT (CZM)

The State Department of Business, Economic Development, and Tourism (DBEDT), through the State Planning Office administers the Federal CZM program in Hawaii. The proposed project modifications do not directly involve use of Federal lands or agency involvement, which would ordinarily require the filing of a CZM Federal Consistency Review. However, the proposed project will involve lands within Hawaii's coastal zone. The proposed project is consistent with the Hawaii Coastal Zone Management Program in the following areas:

"Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public."

The proposed project will be consistent with the objective of maintaining the coastal recreational resources of the adjacent Sand Island State Recreational Park. Public access and use of the park will remain open and unaffected by operations of SIWWTP.

Historic Resources

Objective: Protect, preserve, and where desirable, restore those natural and man-made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

The project site is comprised of Fill Land, mixed (FL), and has been previously disturbed during construction of the existing SIWWTP. No archaeological sites are known within the area and none are expected due to the nature of Sand Island which was primarily constructed of fill material. No potential for negative impacts are therefore anticipated or expected.

Scenic and Open Resources

Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

The proposed project calls for construction of facilities which are not anticipated to affect the public's enjoyment of scenic vistas or view planes from the SIWWTP to views of urban Honolulu and the Pacific Ocean. The proposed modifications are also not expected to reduce or impede views from urban Honolulu to the SIWWTP and the surrounding area. The site is currently used for a wastewater treatment plant. Although the surrounding area is used for industrial purposes there is the nearby Sand Island Recreational Area. Most of the uses at the recreational area are primarily directed within the park and to the beaches along the shoreline. No potential negative adverse impacts to views are therefore anticipated or expected.

Coastal Ecosystems

Objective: Protect valuable coastal ecosystems from disruption & minimize adverse impacts on all coastal ecosystems.

The proposed project will not adversely impact the existing ecosystem of Sand Island or the surrounding nearshore waters. Monitoring of water quality will continue to be conducted as part of the NPDES permit for the SIWWTP facility to ensure acceptable standards of the Federal Environmental Protection Agency (EPA) and State DOH.

The existing land portion of the site also does not provide habitat for endangered flora or fauna species.

Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

The proposed activity will require expenditure of City and County of Honolulu funds for development. The requirement for this expenditure is the result of a prior NPDES permit, as well as need to maintain adequate and sufficient levels of wastewater treatment service for the area extending from Moanalua-Aliamanu to Niu Valley and Paiko Peninsula. The project modifications when completed, will provide for the safe and effective treatment of municipal wastewater necessary for the public health and welfare.

Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

The project site is designated as lying within Zone X and Zone A, of the Flood Insurance Rate Map, of the Federal Emergency Management Agency (FEMA). Zone X

is an area which is identified as lying outside the 500-year flood zone, and Zone A is an area where no base flood elevations have been determined.

The project site is located outside the tsunami inundation zone.

Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

The proposed project conforms to all State and County land use designations. Permits required for the proposed action have been identified and are listed in Section 8. Public notification of this EA will also be provided by publication of the proposed action in the Office of Environmental Quality Control (OEQC) Bulletin.

4.4 CITY AND COUNTY OF HONOLULU GENERAL PLAN AND DEVELOPMENT PLAN

The City and County of Honolulu General Plan and Development Plan for the area covers desired population, land uses, public infrastructure, environmental concerns, and cultural resources. Under the Primary Urban Center (PUC) Development Plan, the proposed infrastructure facility use of the land will be consistent with the existing I-3 - Waterfront Industrial District zoning of the site.

The proposed project is also consistent with the wastewater treatment plant modification symbol as indicated on the Primary Urban Center Development Plan Public Facilities Map. A Development Plan Amendment, therefore, will not be required (Dept. of Planning and Permitting letter to Dept. of Design and Construction, March 19, 2001).

4.5 CITY AND COUNTY OF HONOLULU ZONING

TMK: 1-5-41:05 is zoned I-3 - Waterfront Industrial District. Public uses and structures are a permitted use subject to development standards which include minimum lot sizes and setbacks. Because there are no adjoining residential, apartment, or resort uses, yards will not be required. The floor area ratio, or the ratio of floor area to total area of the zoning lot, is limited to a maximum of 2.5, with a maximum height restriction of 60 feet for structures.

According to the City and County of Honolulu, Land Use Ordinance (LUO), the proposed facility is considered a public use. The LUO indicates that a Conditional Use Permit (CUP) - Minor, would ordinarily be required for a utility installation. However, because the proposed modifications are to an existing facility which is considered a public use, a new permit will not be necessary (Dept. of Planning and Permitting letter to Dept. of Design and Construction, March 19, 2001).

The entirety of Sand Island is within the City and County of Honolulu, Special Management Area (SMA). A SMA permit for the proposed modifications will be filed as part of the proposed project. Information that will be submitted as part of the SMA permit will include, but not be limited to: 1) a site plan identifying all permitted uses and structures on the lot; and, 2) building elevations and sections with dimensions and heights meeting appropriate I-3 (Waterfront Industrial District) height requirements.

SECTION 5
ALTERNATIVES TO THE PROPOSED ACTION

There are three alternatives to the proposed action:

- No action;
- Construction of Secondary Treatment Facility; and,
- Expansion of the existing primary treatment facility.

5.1 NO ACTION ALTERNATIVE

The No Action alternative would involve no further action to upgrade or modify the existing SIWWTP. The No Action alternative is anticipated to result in the following:

- There would be failure to address requirements of the NPDES permit for the SIWWTP. According to the Environmental Protection Agency (EPA), there would also be failure to accommodate the flows caused by a 2-year, 6-hour storm event;
- There would be failure to meet regulations of EPA and the State Department of Health (DOH) which calls for implementation of capacity upgrades when wastewater flows reach 90 percent of the design capacity of the plant. Measured average annual flows have reached 80 mgd, well over 90 percent of the design capacity of the facility. Current flows, due to extended dryer weather in recent years, have averaged 74 mgd, slightly below the 90 percent criteria;
- There would be failure to meet the future hydraulic requirement which requires the facility to accommodate peak flows of 271 mgd, up from the existing estimated 200 mgd;

- There would be failure to provide for improved handling of potential air pollutants through the new fluidized bed incinerator which is much cleaner and operates with lower emission levels than the existing multiple hearth type incinerator;
- No further action would lead to eventual overloading and failure of equipment and machinery, some of which are approaching the end of their design life expectancy for effective and efficient operation. Failure of various treatment processes within the plant would lead to increased incidences of improperly or untreated effluent being released into offshore State waters. The release of improperly or untreated effluent would constitute a violation of existing NPDES permit conditions as well as regulations of Hawaii Administrative Rules (HAR), Chapter 11-54, Water Quality Standards, and the Federal Clean Water Act (CWA), and could result in fines of \$22,400, or more, per day. Environmental consequences could also involve increased health and safety risks to the public and marine life in the form of contaminated coastal and offshore waters; and,
- The failure of equipment approaching the design life expectancy would require additional maintenance and repair. Costs associated with use of dilapidated and substandard equipment can be expected to eventually exceed the cost of replacement. This is an inefficient and unsatisfactory use of the public treasury.

The No Action Alternative, in summary, would result in failure to meet regulations and legal requirements of the NPDES permit; pose increased risk to public health, safety and welfare; result in potential for adverse impacts to the environment; and involve higher operating costs while failing to meet Federal and State regulations. Impacts including resultant legal penalties associated with this alternative, therefore, discount it from further consideration.

5.2 SECONDARY TREATMENT FACILITY ALTERNATIVE

The Secondary Treatment Facility Alternative would involve major expansion of the current Sand Island site with demolition of portions of the existing facility to accommodate new construction. New equipment, machinery, and personnel would be required to operate the facility. In addition, the Secondary Treatment Facility Alternative would:

- Constitute an over-design of treatment as this would be well in excess of regulatory requirements of both the EPA and State DOH;
- Require an estimated construction cost of nearly \$1 billion dollars; and,
- Require a major capital expenditure cost to the City and County of Honolulu which would probably involve high taxpayer or user fee subsidization.

The conditions of the NPDES permit and governmental regulations of the EPA and State DOH do not now require that SIWWTP be upgraded to secondary treatment levels. Although the secondary upgrade would provide improved treatment of wastewater, a sufficient alternative exists that would meet regulatory and environmental requirements, while fulfilling the mandate of the City and County of Honolulu to provide infrastructure services that are safe, effective, and represent an optimum use of public resources.

5.3 PREFERRED ALTERNATIVE - SAND ISLAND WASTEWATER TREATMENT PLANT MODIFICATIONS AND EXPANSION

The preferred alternative involves modifications and expansion of the existing SIWWTP which will provide for improved primary treatment. The estimated \$200 to \$300 million dollar construction cost will provide improved handling of wastewater flows within the tributary area from Niu Valley to Aliamanu, and provide an environmentally effective and cost efficient solution to long term wastewater treatment needs at Sand Island. The facility modifications are based on the Preliminary Engineering Report for the Sand Island Wastewater Treatment Plant Modifications, Unit 1, Phase 2A, September 1999, and the

Design Report for the Sand Island Wastewater Treatment Plant Expansion, October 2000.

Because this alternative will fulfill conditions of the NPDES permit; regulatory requirements of the EPA and State DOH; promote public health, welfare, and safety of the environment; and, provide the most efficient use of public resources, it is the preferred alternative.

SECTION 6
RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S
ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF
LONG TERM PRODUCTIVITY

Development of the project will commit the necessary construction effort and fiscal resources in order to complete the project. Development of the proposed project modifications will provide for improved operating characteristics of the SIWWTP which is important not only for public health and welfare, but to the provision of a basic infrastructure service which makes possible the conditions for continued economic development. Construction of the facility modifications will take place within an existing wastewater treatment facility and will not constrain uses within or surrounding the site. This long term use of the site for public infrastructure purposes will provide for the enhancement of long term productivity through the efficient use of both the public treasury and the land resources of Sand Island.

SECTION 7
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF
RESOURCES BY THE PROPOSED ACTION

Development of the project will involve the irretreivable loss of certain material and financial resources. However, the costs associated with the use of these resources should be evaluated in light of ongoing benefits through the continued use of the site to meet the major portion of Honolulu's wastewater treatment needs.

Necessary taxpayer dollars will be used in the purchase of construction materials and labor to complete the proposed modifications. Materials and labor will be used for construction purposes. Labor will also be necessary for construction and operation of the completed modifications. While reuse for most of these resources is not practicable, payments for labor will benefit the local economy during project development and during operation of the proposed modifications.

SECTION 8
REQUIRED PERMITS AND APPROVALS

The following permits and approvals are expected to be required to allow for development of the proposed project:

FEDERAL

Department of the Army Corps of Engineers

- Wetlands coordination, as required

STATE OF HAWAII

Department of Health

- NPDES Notice of Intent (NOI) Form C - Construction Stormwater Discharges
- NPDES Notice of Intent (NOI) Form G - Discharges Involving Construction Dewatering
- NPDES Notice of Intent (NOI) Form F - Hydrotesting Discharges
- Community Noise Permit/Community Noise Variance
- Construction Plan Review and Approval
- Air Quality Permit (update of existing permit)

Department of Transportation

- Right of Way Coordination (for relocation of driveway)

CITY AND COUNTY OF HONOLULU

Department of Planning and Permitting

- Special Management Area Use Permit
- Construction Plan Review and Approval (including Grading and Erosion Control Plan Review as appropriate with concurrent review by Department of Design and Construction)
- Building Permit

- Grading, Grubbing and Stockpiling Permit
- Construction Dewatering Permit
- Permit for (Clarifier) Tank Installation
- Flood District Certification (if required)

Honolulu Fire Department

- Application for Tank Installation

SECTION 9
FINDINGS AND REASONS
SUPPORTING DETERMINATION

In accordance with the content requirements of Chapter 343, Hawaii Revised Statutes, and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, it is anticipated that this project will have no significant adverse impact to water quality, air quality, existing utilities, noise, archaeological sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area. According to the significance criteria:

1. *Irrevocable commitment to loss or destruction of natural or cultural resources -*

The proposed project is not expected to adversely impact any natural or cultural resources. The proposed activity will involve use of fill land on Sand Island. This area contains the existing wastewater treatment plant which has already been subject to extensive grading and land disturbance.

2. *Curtailment of the range of beneficial uses of the environment -*

The proposed project will involve use of disturbed areas of land within the existing SIWWTP site. No curtailment of the range of beneficial uses that may be exercised at the site are therefore expected. With or without the project, the SIWWTP will continue to handle a major part of the wastewater processing needs of the City and County of Honolulu.

3. *Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, 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 Chapter 343, HRS, and the National Environmental Policy Act. 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 or social welfare of the community or state -*

The proposed project is expected to enhance the future long term stability of the City and State through the provision of basic public works infrastructure necessary to the health, welfare, and future growth of the community and region.

5. *Substantially affects public health -*

The proposed project will be constructed in accordance with Federal, State, and City and County of Honolulu, rules and regulations governing public safety and health. Concerns involving air, water, noise, and traffic impacts have been addressed in this EA document by use of appropriate mitigation measures as described. Upon completion the proposed modifications will improve public health through improved treatment of wastewater.

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

The proposed project will involve the construction of modifications necessary for improved operations of a wastewater treatment facility which is consistent with the

General Plan, Population, Objectives and Policies. Although the proposed project will involve employment, however, it will not generate new population growth. Public infrastructure requirements, including power and water services, which will be utilized as part of this proposal have been evaluated and appropriate actions will be made to ensure no negative adverse impacts to the public.

7. *Involves substantial degradation of environmental quality -*

The proposed project will be developed in accordance with the environmental policies of Chapter 343, HRS, and the National Environmental Policy Act. The project will also utilize an existing site with minimal development requirements. No degradation of environmental quality is, therefore, anticipated or expected.

8. *Is individually limited but cumulatively has considerable effects on the environment, or involves a commitment for larger actions -*

The proposed project is primarily intended to meet requirements of the SIWWTP NPDES permit for treatment of wastewater. The cumulative effect of implementing improvements related to the NPDES permit will result in improved wastewater effluent quality while meeting the anticipated needs of a major portion of Honolulu's population. Based on the description of the proposed action and mitigation measures identified in this document, potential for considerable adverse environmental effects and a commitment for larger actions, are neither anticipated nor expected.

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

There are no endangered flora or fauna species within the project site.

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

As required, any potential impacts to air, water quality, or noise levels will be addressed through the implementation of appropriate mitigation measures described in this document.

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, freshwater, or coastal waters -*

The proposed activity will be undertaken within an existing industrial area which is home to SIWWTP. The site contains no especially sensitive environmental characteristics which would detract from continued use for this activity.

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

The proposed project is not expected to adversely affect the public's enjoyment of scenic vistas or view planes from the SIWWTP site to views of urban Honolulu and the Pacific Ocean beyond. The project is consistent with the industrial zoning designation of the site which allows for a wastewater treatment facility. The proposed project will also be consistent with the building height restriction of 60 feet.

Although the surrounding area is used for industrial purposes there is the nearby Sand Island Recreational Park. It is anticipated that most of the uses at the recreational area will be primarily directed within the park and to the beaches along the shoreline. Although park users will be able to view portions of the proposed expansion, potential for negative adverse view impacts are not expected.

13. *Requires substantial energy consumption -*

The facilities identified in this project will utilize the same or less energy than the existing facilities. The flotator clarifier, a high source of energy usage, will be removed. The primary clarifiers, which are to replace the flotator clarifiers will use substantially less energy. The new incinerator and conditioning systems are also expected to use substantially less energy than the existing systems. The City is also presently evaluating the potential to convert bio-gas to electricity. This type of conversion facility will be pursued for this project if it is deemed cost effective.

Based on the above evaluation and the information contained in this Environmental Assessment it is anticipated that an Environmental Impact Statement (EIS) will not be required and that a recommended Finding of No Significant Impact (FONSI) be published for this project.

SECTION 10
AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED

10.1 FEDERAL AGENCIES

Environmental Protection Agency, Region IX
Federal Aviation Administration (height clearance)
U.S. Army, Corps of Engineers

10.2 STATE AGENCIES

Department Business, Economic Development and Tourism

- State Planning Office

Department of Health

- Clean Air Branch
- Clean Water Branch
- Solid and Hazardous Waste Branch
- Waste Water Branch

Department of Land and Natural Resources

- Land Division
- State Parks Division

Department of Transportation

- Harbors Division
- Right of Way Branch

Office of Environmental Quality Control (OEQC)

10.3 CITY AND COUNTY OF HONOLULU

Department of Environmental Services

Department of Parks and Recreation

Department of Planning and Permitting

Department of Transportation Services

Board of Water Supply
Department of Facility Maintenance

10.4 PRIVATE

Sand Island Treatment Center
Sand Island Business Association
Hawaiian Electric Company
Kalihi-Palama Neighborhood Board No. 15

SECTION 11
COMMENTS AND RESPONSES TO THE
DRAFT ENVIRONMENTAL ASSESSMENT

This section reserved for comments and responses to comments to the Draft EA.

04/03/2001 07:05 FAX 000 021 0111



U.S. Department
of Transportation
Federal Aviation
Administration

Western-Pacific Region
Real Estate and Utilities Team, AHNL-548

01-0743
DEPT OF TRANSPORTATION
P. O. Box 50109
Honolulu, Hawaii 96850-5000
01 APR -5 PM 1:29

01 APR -5 2001

USE
312
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April 3, 2001

Ms. Rae M. Loui, P. E. *RL*
Director, Department of Design
and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

Dear Ms. Loui:

Your letter of February 13, 2001, requested review and comment of your Draft Environmental Assessment for the "Sand Island Wastewater Treatment Plant Modifications and Expansion" project.

The Federal Aviation Administration has reviewed the subject document and has no comments or concerns.

We appreciate this opportunity to review your project. Please contact me at 541-1236, if there are any questions.

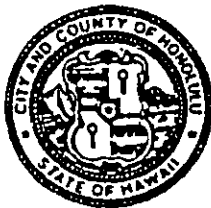
Sincerely,

Darice B. N. Young

Darice B. N. Young
Realty Contracting Officer

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-182

April 12, 2001

Mr. Darice B.N. Young
Realty Contracting Officer
Federal Aviation Administration
P.O. Box 50109
Honolulu, Hawaii 96850

Dear Mr. Young:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated April 3, 2001. We acknowledge your review of the subject DEA and that you have no comments or concerns.

We appreciated your review of our project DEA. Should you have any further comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Raem Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

04/19/2001 10:58 FAX 808 527 5142

C&C DESIGN & CONSTR. - K.M. TOWILL

01-0767

BRIAN K. MINAII
DIRECTOR

DEPUTY DIRECTORS
GLENN M. OKIMOTO
JADINE Y. URASAKI

BENJAMIN J. CAYETANO
GOVERNOR



RECEIVED
DEPT OF DESIGN & CONSTR
C & C OF HONOLULU

01 APR 10 AM 8:02

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
75 SO. NIMITZ HWY. • HONOLULU, HAWAII 96813-4898

IN REPLY REFER TO:

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RECEIVED

DESIGN & CONSTRUCTION
DIV. OF TRANSPORTATION
DESIGN & CONSTRUCTION

April 5, 2001

Ms. Rae M. Loui, P. E., Acting Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Ms. Loui:

Subject: Sand Island Wastewater Treatment Plant
Modifications and Expansion
Draft Environmental Assessment

Thank you for allowing us to review the Draft Environmental Assessment for the subject project. We have the following comments for your consideration.

1. The proposed modifications appear to be confined within the limits of the existing facility. Thus, they should not impact our new annex facility or operations of our tenants. However, we would appreciate a copy of updated schedules to keep apprised of impending work to anticipate potential impacts to traffic due to construction.
2. Please provide us a copy of the Findings of No Significant Impact (FONSI) upon completion.

If you have any questions, please call Ms. Angela Kunioka of the Harbors Engineering Design Section at 587-1959.

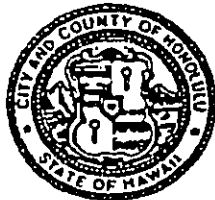
Very truly yours,

Thomas Fujikawa
Harbors Administrator

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-196

April 16, 2001

Mr. Thomas Fujikawa
Harbors Administrator
State Department of Transportation
Harbors Division
79 South Nimitz Highway
Honolulu, Hawaii 96813

Attention: Ms. Angela Kunioka

Dear Mr. Fujikawa:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP)
Modifications and Expansion

Thank you for your response letter dated April 5, 2001, concerning the subject DEA. We acknowledge that the proposed project will remain within the limits of the existing SIWWTP site. A copy of our updated project schedules and Finding of No Significant Impact (FONSI) will be provided to your office.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rae M. Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTc

01-0732

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA - 711 KAPIOLANI BOULEVARD, SUITE 1200 - HONOLULU, HAWAII 96813
TELEPHONE: 18081 523-4529 • FAX: 18081 523-4730 • INTERNET: www.cc.honolulu.hi.us

01 APR -5 PM 12:38

JEREMY HARRIS
MAYOR



CHERYL D. SOON
DIRECTOR

GEORGE 'KEDAKI' MIYAMOTO
DEPUTY DIRECTOR

April 3, 2001

TP2/01-00718R
TPD01-00070

MEMORANDUM

TO: RAE M. LOUI, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: CHERYL D. SOON, DIRECTOR

SUBJECT: SAND ISLAND WASTEWATER TREATMENT PLANT
MODIFICATIONS AND EXPANSION

In response to your February 13, 2001 memorandum, the draft environmental assessment (EA) for the subject project was reviewed. According to the draft EA, the access to the project site is directly from Sand Island Parkway, which is under the jurisdiction of the State of Hawaii Department of Transportation. Therefore, the project should have minimal impact on roadways under City jurisdiction.

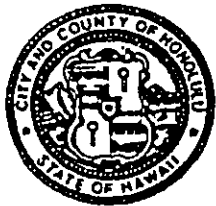
One of the projects being proposed by this department is a Sand Island Scenic Parkway that would be located along the southern boundary of the wastewater treatment plant. According to the information provided, the subject project improvements are not within the alignment of the Sand Island Scenic Parkway and would, therefore, not have an impact on plans for this roadway. We would appreciate close coordination on projects involving the wastewater treatment plant with this department.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at Local 6976.

CHERYL D. SOON

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-181

April 12, 2001

MEMORANDUM

TO: MS. CHERYL D. SOON, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

ATTN: MS. FAITH MIYAMOTO

FROM: RAE M. LOUI, P.E., DIRECTOR *faith miyamoto*
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
SAND ISLAND WASTEWATER TREATMENT PLANT (SIWWTP)
MODIFICATIONS AND EXPANSION

Thank you for your response letter dated April 3, 2001. We acknowledge your review of the subject DEA and the following:

Access to the project site is from the Sand Island Parkway. There are no new plans to modify the existing access to the site;
Per your review the proposed project is not within the alignment of the planned Sand Island Scenic Parkway; and,
The Department of Design and Construction will continue to coordinate plans concerning modification of facilities at SIWWTP with your Department.

We appreciated your review of our project DEA. Should you have any further comments please contact Ms. Cindy Masuoka of our office at 527-5843.

cc: Leighton Lum, Ph.D., RMTC

03/28/2001 15:52 FAX 808 527 5142

C&C DESIGN & CONSTR. - R.M. TOWILL 002
Hawaiian Electric Company, Inc. • PO-Box 2750 • Honolulu, HI 96840-01

GEN-6 (EA/EIS)

01-0651
12



'01 MAR 27 09:36

DESIGN
DIV
E

March 22, 2001

City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, Hawaii 96813

Attention: Ms. Cindy Masuoka

Subject: Sand Island Wastewater Treatment Plant

Thank you for the opportunity to comment on your January 2001 EA for the Sand Island Wastewater Treatment Plant, proposed by the City and County of Honolulu Department of Design and Construction. We have reviewed the subject document and would like to mention that HECO will be developing a new distribution substation to serve the increasing load in the area. In addition, two new 46kV circuits will be extended from Sand Island substation to the new substation.

Our point of contact for this project, and the originator of these comments, is Ronald Wong (543-7714) principal planning engineer. I suggest your staff and consultants deal directly with Ronald to coordinate HECO's continuing input on this project.

Sincerely,

Kirk Tomita
Senior Environmental Scientist

cc: R. Wong

OEQC

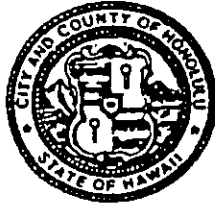
WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP



DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
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Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-187

April 12, 2001

Mr. Kirk Tomita
Senior Environmental Scientist
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840

Dear Mr. Tomita:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated March 22, 2001, concerning the subject DEA. We acknowledge your comment that HECO will be developing a new distribution substation to serve increasing load in the area. Two new 46 kilovolt (kV) circuits will be extended from Sand Island substation to the new substation. We will coordinate electrical power requirements with Mr. Ronald Wong, Principal Planning Engineer, HECO, to ensure uninterrupted service.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rae M. Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET - HONOLULU, HAWAII 96813
TELEPHONE: (808) 522-4414 • FAX: (808) 527-8743 • INTERNET: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K C CHEE
DEPUTY DIRECTOR

2001/CLOG-732(RY)

March 19, 2001

MEMORANDUM

TO: RAE M. LOUL, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: *Randall K. Fujiki* RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: SAND ISLAND WASTEWATER TREATMENT PLANT MODIFICATIONS
AND EXPANSION DRAFT ENVIRONMENTAL ASSESSMENT, SAND
ISLAND, HONOLULU, OAHU
TAX MAP KEY 1-5-041: 005

We have reviewed the Draft Environmental Assessment (DEA) for the modification and expansion of the Sand Island Wastewater Treatment Plant (SIWWTP) and have the following comments:

SECTION 1 INTRODUCTION

Section 1.1 - The Final EA should be expanded to more thoroughly describe the existing facilities and the specific requirements of the NPDES permit that this project needs to comply with.

SECTION 2 PROJECT DESCRIPTION

Section 2.1.2 - This section should be expanded to provide estimates on the amount of grading and excavation required for the proposed project. Will plant operation be affected?

Section 2.1.3 - The utility requirements and adequacy of the existing utilities should be discussed.

Section 2.1.5 - Will the proposed project result in an increase of liquid waste generated by the facility?

Rae M. Loui, P.E., Director
Department of Design and Construction
Page 2
March 19, 2001

SECTION 3 AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

Section 3.1.3 - The Federal Insurance Rate Map (FIRM) Number (effective November 20, 2000) should be provided.

(Note: A flood determination application No. 98/FD-8 has been accepted by the Department of Planning and Permitting (DPP). Based on the flood study prepared by the U.S. Army Corps of Engineers, the portion of the parcel designated on the FIRM as Zone A, is located in a Flood Fringe District with a regulatory flood elevation which ranges from 5.9 feet to 5.7 feet above mean sea level. How surface runoff and drainage at the project site is accommodated and whether any drainage improvements are proposed should also be addressed.)

Section 3.1.5 - This section should be expanded to discuss where and how the effluent from the SIWWTP will be discharged and the effect on water quality. Are there any known rare, threatened or endangered species living in the outfall area?

Section 3.1.11 - Scenic resources in the coastal zone management area should be identified and the impact of the proposed project on scenic views discussed. The heights, bulk and design of the proposed structures should be addressed.

Section 3.2.2 - Please be aware that according to our records (see attached 9/9/94 DLU letter), the Sand Island Treatment Center (alcohol treatment and rehabilitation facility) is a nonconforming use and subject to the nonconforming use provisions of the Land Use Ordinance (LUO). Relocation of the facility within the site will not be permitted without a zoning variance.

SECTION 4 RELATIONSHIP TO STATE AND COUNTY LAND USE PLANS AND POLICIES

Section 4.4 - The project is consistent with the wastewater treatment plant modification symbol shown on the Primary Urban Center Development Plan Public Facilities Map and as such, an amendment to said public facilities map is not required.

Section 4.5 - The SIWWTP is considered a public use under the LUO. Therefore, a Conditional Use Permit-Minor (CUPm) is not required.

Rae M. Loui, P.E., Director
Department of Design and Construction
Page 3
March 19, 2001

The project site is within the Special Management Area (SMA) and an SMP is required. Therefore, if the intent is that the Final EA will satisfy the requirements of Chapter 25, ROH, it should include the following drawings/plans:

1. A site plan identifying all permitted uses and structures on the lot.
2. Building elevations and sections with dimensions and heights meeting appropriate district height requirements.

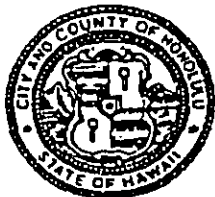
If you have any questions, please contact Raymond Young of our staff at 527-5839.

RKF:lh
Attach.
80524, 80545

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4584 • Fax: (808) 523-4567
Web site: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-183

April 16, 2001

MEMORANDUM

TO: MR. RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: RAE M. LOUI, P.E., DIRECTOR *[Signature]*
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
SAND ISLAND WASTEWATER TREATMENT PLANT (SIWWTP)
MODIFICATIONS AND EXPANSION

Thank you for your response letter dated March 19, 2001, concerning the subject DEA. We have prepared the following itemized response to your comments:

1. A description of existing facilities at the SIWWTP will be provided in the forthcoming Final Environmental Assessment.

The Preliminary Engineering Report for the Sand Island Wastewater Treatment Plant Modifications, Unit 1, Phase 2A, Honolulu, Oahu, Hawaii, September 1999, which is cited in the references section of the DEA, provides a detailed description of both existing facilities at SIWWTP and requirements for compliance with the National Pollutant Discharge Elimination System (NPDES) Permit.

A summary of the major NPDES treatment requirements include:

Item	Biochemical Oxygen Demand	Suspended Solids
Monthly Removals	≥30%	≥60%
Monthly Ave. Effluent Concentration Limit	116 mg/l	69 mg/l
Weekly Average Effluent Concentration Limit	160 mg/l	104 mg/l

Mr. Randall K. Fujiki

-2-

April 16, 2001

2. The grading requirements are anticipated to be minimal because the site is relatively flat.

The present excavation requirement estimate is 125,000 cubic yards. This quantity is considerable because excavation is required for the construction and installation of underground piping, a Headworks structure, two clarifiers, a trickling filter, a secondary clarifier, dewatering systems, pump station, and other various structures. The project's design has and will attempt to limit the quantity of excavation to the least amount required, and the above quantity may increase or decrease as the design is developed.

Precautions and alternate access routes will be provided to prevent adverse impacts to Plant operations from grading and excavation activities.

3. Utility requirements and adequacy of existing utilities - Adequacy of existing utilities for the proposed Unit 1, Phase 2A project has been coordinated with the Honolulu Board of Water Supply (BWS) and Hawaiian Electric Company (HECO). According to both parties there is sufficient capacity to accommodate the proposed project. A new onsite HECO electrical substation will provide sufficient step down power. Water meter modifications will also be made in conjunction with comments from BWS.
4. Increase of liquid waste generated by the facility - The treatment capacity will increase from the current 82 million gallons per day (mgd) to 90 mgd by the year 2020 (projected).
5. Surface drainage - Surface drainage will be accomplished by replacing an existing unlined ditch with a lined ditch. Surface drainage will enter the proposed ditch through existing culverts (90% of drainage) and curb and gutter drains. The proposed ditch will drain into an existing man-made ditch which eventually discharges into Honolulu Harbor.
6. Effluent Water Quality - The proposed project will involve improvements to the processing of waste water flows in accordance with conditions of the existing SIWWTP NPDES Permit. Water quality, therefore, will be in accordance with applicable Federal, State, and City and County of Honolulu regulations. There are no known rare, threatened or endangered species that will be adversely affected by the proposed project.

The effluent will be discharged through the existing 84 inch ocean outfall. Additional specific information on the outfall and effluent water quality may be obtained from the SIWWTP Disinfection Facility and Effluent Pump Station

Mr. Randall K. Fujiki

-3-

April 16, 2001

Environmental Assessment, September 2000, and the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, December 1993, which is referenced in our Draft EA.

7. Scenic Resources - As indicated in Section 3.1.11, the site is located in the I-3, Waterfront Industrial District designation of the City and County of Honolulu, Land Use Ordinance (LUO). All proposed structural characteristics including design, height limitations, setbacks, and front yard requirements, will be in accordance with the LUO. Existing structures at the site are approximately 30 to 80 feet high. Dimensions of major proposed structures will be as follows (all heights are from grade):

Flotator Clarifiers: ± 150 feet in diameter x ± 30 feet in height
Trickling Filters: ± 110 feet in diameter x ± 55 feet in height
Secondary Clarifiers: ± 100 feet in diameter x ± 30 feet in height

Heights for all structures will be limited to 60 feet, which is the maximum permissible in the I-3 zoning district.

As noted in the DEA, although the surrounding area is used for industrial purposes, there is the nearby Sand Island Recreational Park. It is anticipated that most of the users will be primarily directed within the park and to the beaches along the shoreline. It is expected that while park users will be able to view portions of the proposed SIWWTP expansion, potential for negative adverse impacts to scenic views are not anticipated. This is primarily because mauka views from the park toward the SIWWTP modification and expansion area will continue to be of the SIWWTP and other industrial developments located beyond.

8. Sand Island Treatment Center - We acknowledge that the treatment center is subject to provisions of the LUO. Relocation within the site, therefore, will require filing and approval of a zoning variance permit application.
9. Development Plan Public Facilities Designation and LUO Public Use Facility - We acknowledge that the proposed project will not require a DP Amendment or a Conditional Use Permit - Minor, since SIWWTP is an existing designated public use facility.
10. We acknowledge the requirement for a SMA permit and have filed a permit application with your Department. A site plan and project description identifying necessary informational requirements will be provided.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

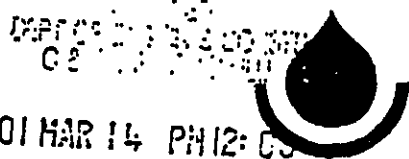
cc: Leighton Lum, Ph.D., RMTC

01-0584

WDC

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
10 SOUTH BERETANIA STREET
HONOLULU, HI 96843



01 MAR 14 PM 12:05

March 9, 2001

JEREMY HARRIS, Mayor

EDDIE FLORES, JR., Chairman
CHARLES A. STED, Vice-Chairman
JAN M.L.Y. AMI
HERBERT S.K. KAOPIA, SR.
BARBARA KIM STANTON

BRIAN K. MINAII, Es-Officio
ROSS S. SASAMURA, Es-Officio

CLIFFORD S. JAMBLE
Manager and Chief Engineer

TO: RAE M. LOUL, ACTING DIRECTOR *RM*
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: FOR CLIFFORD S. JAMBLE, MANAGER AND CHIEF ENGINEER

SUBJECT: YOUR TRANSMITTAL OF FEBRUARY 13, 2001 OF THE
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE SAND
ISLAND WASTEWATER TREATMENT PLANT MODIFICATIONS
AND EXPANSION, HONOLULU, OAHU. TMK: 1-5-41: 05

Thank you for the opportunity to review the subject document for the proposed wastewater treatment plant improvements.

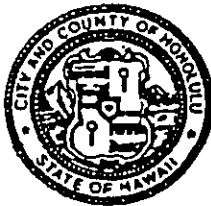
We have the following comments to offer:

1. The existing off-site water system is presently adequate to accommodate the proposed project.
2. The availability of water will be determined when the Building Permit Applications are submitted for our review and approval. If water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.
3. There are four existing services to the subject TMK parcel. Three are active, while one is inactive. Only one of the active services, six-inch compound meters installed in a siamese connection, serves the project site.
4. If additional three-inch or larger meters are required, the construction drawings showing the installation of the meter(s) should be submitted for our review and approval.
5. The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.
6. Board of Water Supply approved Reduced Pressure Principle Backflow Prevention Assemblies are required to be installed immediately after all meters serving the project site.

If you have any questions, please contact Scot Muraoka at 527-5221.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
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JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-186

April 12, 2001

MEMORANDUM

TO: MR. CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: RAE M. LOUI, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
SAND ISLAND WASTEWATER TREATMENT PLANT (SIWWTP)
MODIFICATIONS AND EXPANSION

Thank you for your response letter dated March 9, 2001, concerning the subject DEA. We have prepared the following itemized response to your comments. We acknowledge the following:

1. The existing off-site water system is presently adequate to accommodate the proposed project. However, water availability will be determined when Building Permit Applications are submitted for review and approval. If approved, SIWWTP will be subject to a Water System Facilities Charge;
2. There is only one active water meter system which serves the project site. If additional meters are required, construction drawings showing the installation of the meter(s) must be submitted for your review and approval;
3. On-site fire protection requirements pertaining to fire flow will continue to be coordinated with the Honolulu Fire Department, Fire Prevention Bureau; and,
4. Reduced Pressure Principle Backflow Prevention Assemblies will be installed immediately following the installation of all water meters serving the project site.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

cc: Leighton Lum, Ph.D., RMTC

01-0530
B

SITC

THE HAWAII ALCOHOLISM FOUNDATION
PO BOX 3045
HONOLULU, HAWAII 96802

71 MAR 8 2001

March 8, 2001

DESIGN & CONSTRUCTION
DIV OF INFRASTRUCTURE
DEPARTMENT OF DESIGN & CONSTRUCTION

To: Ms. Cindy Masuoka
Wastewater Design and Engineering Division
Department of Design and Construction
City and County of Honolulu

From: L. Mason Henderson CSAC, CSAPA
Chief Executive Officer
The Hawaii Alcoholism Foundation dba The Sand Island Treatment Center
1240 Sand Island Parkway
Honolulu, Hawaii 96819

Re: Environmental Impact Assessment:
Proposed Expansion of Sand Island Wastewater Treatment Facility.

Dear Ms. Masuoka,

I read, with great interest, the document your agency was kind enough to forward for my review. I would like to commend your staff for the obvious thoroughness and professionalism shown in the preparation of this draft environmental assessment. I realize that a great deal of thought and careful planning has gone into this substantial and important project.

Of course, my specific area of interest would be in how this expansion, as currently proposed, would potentially impact the operation of one of the largest, busiest and most effective drug treatment facilities in the State of Hawaii. You can imagine my concern when I found that this potentially crippling impact upon Hawaii's ability to treat its citizens suffering from Drug related disorders, was addressed only in passing, and then only to the extent to say, "the Halfway House could be relocated, if necessary".

Based upon my meeting with Ms. Rae Loui, Acting Director of Planning and Design, it is clear that callousness and indifference played absolutely no part in the understatement of a substantial negative Public Health impact which would result from an interruption of the services provided at the Sand Island Treatment Center. I realize, as a result of that meeting, that there is a high degree of sensitivity to the legitimate drug treatment needs of our fellow citizens. I believe that the author of this report was simply unaware of certain facts that, if shared, would tend to more fully illuminate the terrain and bring into focus the profound and dramatic consequences implicit in the statement "relocate, if needed"

The Sand Island Treatment Center was the first Licensed Special Treatment Facility in the State of Hawaii and is currently licensed and accredited to provide a full continuum of care for our citizens suffering from Substance Related Disorders. Last year alone, citizens of the State of Hawaii were provided with well over 50,000 individual days of professional substance abuse rehabilitation services at this site. That is not a small number.

The Alcohol and Drug Rehabilitation Facility on Sand Island Parkway has been in continuous operation, at this site, since October of 1960 ... long before the University of Hawaii, or the State, considered leasing the land to the City and County for the purposes of building a sewage treatment plant. Continuous operation since 1960 would indicate that the initial construction of the Wastewater Treatment Plant, after 1970, did not prove to be an intolerable intrusion on the important work being done by the Foundation.

Were the medical, psychiatric and drug rehabilitation services currently offered at the Sand Island Treatment Center to be interrupted, there would be an immediate and significant negative public health impact in the State of Hawaii. While it is impossible to gauge on an individual, citizen by citizen, basis the depth and breadth of that impact, some of the ways in which Public Health would suffer are readily apparent. A few of the more obvious are listed below.

An immediate, and prolonged, 20% - 25% reduction in overall licensed and accredited drug treatment capacity in the State of Hawaii.

An immediate, and prolonged, 50% reduction in true long-term residential drug treatment in the State of Hawaii.

An immediate, and prolonged, 100% reduction in true long-term residential drug treatment for Hawaii citizens who have otherwise expended limited insurance benefits, or other sources of funding. Each year we provide in excess of \$3,000,000.00 worth of unreimbursed treatment services to Hawaii citizens.

An immediate, and prolonged, loss of one of the major drug treatment resources for the Judiciary of the State of Hawaii.

An immediate, and prolonged, loss of the principal Dual Diagnosis Treatment Program in the State of Hawaii. Programs designed for Hawaii citizens suffering from chronic mental disorders as well as chronic substance related disorders.

An immediate, and prolonged, loss of an increasingly important Drug Treatment Program for 18 year old males and females connected with the Hawaii Youth Correctional Facility.

An immediate, and prolonged, loss of a significant resource for primary medical and psychiatric care for indigent Hawaii citizens.

An immediate, and prolonged, loss of extensive free family counseling services for family members of the Patients at SITC.

An immediate, and prolonged, loss of a significant free supplemental feeding program for the children of Patients at SITC.

When we begin to speak about negatively impacting a major component in Hawaii's response to our State's worsening drug problem, we aren't even required to speak in the hypothetical. We have a fairly recent example of the impact of casually dismantling elements of our State's drug treatment strategy. Less than ten years ago a decision was made to upgrade the facilities on the grounds of the Hawaii State hospital, in Kaneohe. Impressive environmental impact statements were pulled together, many jobs were created, nice new buildings were designed but, in the process, a major drug treatment center was required to close its residential facility with the promise that a nice new building would be provided in short order. Hina Mauka's residential facility was closed for over five years due to cost overruns, changes made to the original plans, all the things that happen on projects of this type, (e.g. the construction of the Nimitz by-pass and H-3.) By the time the facility was reopened, the taxpayers of the State of Hawaii were left holding the bag for a net loss of five residential beds ... at a cost of over \$6,000,000.00.

In the case of Hina Mauka we're talking about a facility that originally had (50) beds, the Sand Island Treatment Center received a Certificate of Need from the State Health Planning and Development Agency in 1995 for (123) beds. Factoring in inflation, and more than double the number of beds involved, the math does look fairly significant.

When Hina Mauka closed, there was a stampede for residential treatment services. Our request for a CON increase from SHPDA sailed through in record time due to the severity of the problem and due to the fact that the Hawaii Alcoholism Foundation provided (93) additional treatment slots to the State of Hawaii ... at no charge. It's important to remember that the (45) replacement beds at Hina Mauka cost the taxpayers \$6,000,000.00 and five years of the reduced availability of those critically needed services.

In attempting to determine that which would contribute to the greater future good of the community we must carefully look where we are about to place our feet in our journey toward that future. When we, through a lack of understanding or insight, devalue or diminish the potential for negative impact from a project, such as the one proposed, we cease working for the public good and find ourselves in the position of seeking to impose our own view of what would be good for the public. There is a difference.

It's true that public works projects benefit the community, but it's critically important that such projects refrain from doing unforeseen and unanticipated damage to suffering members, of that same community in the process. Citizens, who by the very nature of their disease, have been stigmatized and marginalized to the point that proposing to whittle away at, or dismantle, one of the best chances they have for reclaiming their lives can be reduced to a few lines in a very impressive report.

The "half-way house", as it is termed in the report, was a compassionate effort to help our Grandfathers when it opened in 1960. The Sand Island Treatment Center of today is one of the most effective and vibrant centers for recovery in the Pacific region. To trample on such a vital

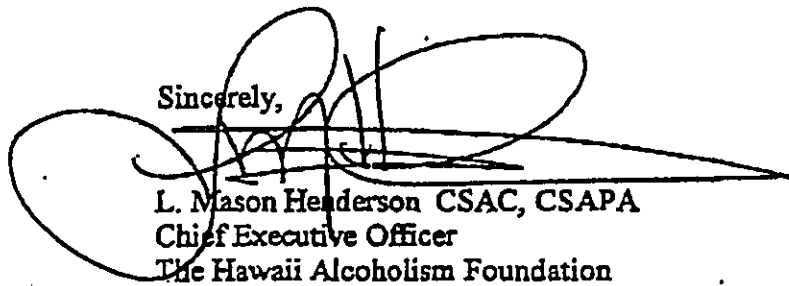
and valuable resource is unthinkable when the magnitude of loss and suffering that would be experienced by our people is clearly and cleanly considered.

One can dismiss Kiawe and weeds and non-native Mangrove ... One can sweep aside trash and squalor if the narrative description is blandly dismissive or perjorative enough ... When one considers the real suffering of real people, the process becomes more real and the evaluation of negative impact becomes more important and more accurate and more humane.

I fully agree that the expansion of human waste treatment capacity and the reduction of biological contaminants in our near ocean environment are very important considerations, but I am extremely gratified by the sensitivity to the reclamation of wasted human potential that is being shown by your agency. It is clear that we are all involved in trying to help our fellow citizens and improve the quality of life we share here, in Hawaii. I look forward to a continuing collaboration as this project moves forward.

Again, thank you for providing me with the opportunity to review this draft assessment and add my comments. If I can be of any further service or provide you with any additional information, please feel free to contact me at any time.

Sincerely,

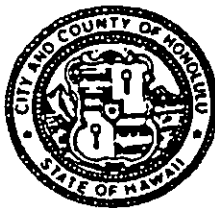


L. Mason Henderson CSAC, CSAPA
Chief Executive Officer
The Hawaii Alcoholism Foundation
The Sand Island Treatment Center Programs

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

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JEREMY HARRIS
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DIRECTOR
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DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-184

April 12, 2001

Mr. L. Mason Henderson, CSAC, CSAPA
Chief Executive Officer
The Hawaii Alcoholism Foundation
The Sand Island Treatment Center
1240 Sand Island Parkway
Honolulu, Hawaii 96819

Dear Mr. Henderson:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated March 8, 2001, concerning the subject DEA. We acknowledge the important public service your facility provides to the community and appreciate your constructive review of the subject DEA. Should you wish to provide further comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rae M. Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTTC

BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

March 8, 2001

Ms. Rae Loui, P.E., Acting Director
City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, HI 96813

Dear Ms. Loui:

Subject: Draft Environmental Assessment for the Sand Island Wastewater Treatment Plant
Modifications and Expansion

Thank you for the opportunity to review and comment on the subject document. We have the following comments.

1. Please discuss alternatives to incinerating the sludge. What are the costs and benefits of the various sludge handling alternatives?
2. What is the additional cost of producing reuse water just enough for irrigating an 18-hole golf course adjacent to the Sand Island facility?
3. Currently, there are several projects that are happening concurrently related to the Sand Island Wastewater Treatment Facility. To ensure that all related projects are analyzed as a whole and to ensure adequate disclosure of cumulative impacts, we recommend that all these current projects and anticipated future projects be covered under a single environmental impact assessment.

Should you have any question, please call Jeyan Thirugnanam at 586-4185.

Sincerely,


Genevieve Salmonson
Director

c: R.M. Towill

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.usJEREMY HARRIS
MAYORRAE M. LOUI, P.E.
DIRECTORGEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTORERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-193

April 16, 2001

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant Modifications and Expansion

Thank you for your response letter dated March 8, 2001, concerning the subject DEA. We have prepared the following itemized response to your comments:

1. Sludge Handling Alternatives - Alternatives to incineration that were evaluated by the Department of Design and Construction included: a) continued heat treatment; and, b) anaerobic digestion.

- a) Continued heat treatment: Heat treatment is a sludge conditioning step that, when included in the overall sludge handling process results in the most costly alternative of the 3 systems. It requires significant fuel, energy and manpower costs. The original selection of the system was based on its compatibility with the old "multiple hearth" incineration system. The heat treatment system was intended to produce a highly dewaterable product that would allow the old "multiple hearth" incineration system to operate without the addition of fuel. Currently the incineration system is not operable and the heat treated sludge is disposed of after dewatering.

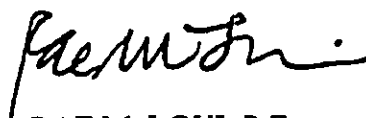
The new dewatering systems available today and the new and modern "fluidized bed" type incineration systems combine to eliminate the need for heat treatment. A higher sludge disposal requirement is also another major disadvantage. With the limited life remaining in current landfills and the uncertainty of the availability of new landfills, the much higher amount of sludge required for disposal than the incineration process is a significant disadvantage.

Ms. Genevieve Salmonson
Page 2
April 16, 2001

- b) Anaerobic Digestion: Anaerobic digestion involves a solids reduction and stabilization step in the overall solids handling process. It is one of the most commonly used processes. This process was not chosen for the following reasons:
- Higher life cycle cost. The capital cost and life cycle costs are higher than the new "fluidized" bed incineration. The new incineration system makes use of existing buildings, thereby significantly lowering capital costs.
 - Higher sludge disposal requirement. Same as alternative a).
 - Higher land requirements. In an already land constrained site, anaerobic digestion would require a significant amount of land
2. Additional Cost of Producing Reuse Water for Irrigation of 18-Hole Golf Course Adjacent to Sand Island. There is not enough information to develop a reasonable cost estimate at this time. SIWWTP receives wastewater that is high in chlorides (~8,000 parts per million), thus R-1 water will be too toxic for plants or grass. It is therefore not feasible to reuse SIWWTP effluent unless a more expensive reverse osmosis system is used in combination with R-1, secondary treatment, filtration, and disinfection.
3. Projects at Sand Island Wastewater Treatment Plant (SIWWTP) - The EA references the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, December 1993, which discussed overall upgrades and improvements to the East Mamala Bay district's wastewater facilities, including the SIWWTP. The Final EA for the Sand Island WWTP Disinfection Facility and Effluent Pump Station, supplements the East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, which did not discuss a UV disinfection facility in detail. The Sand Island WWTP Disinfection Facility and Effluent Pump Station is referenced in our EA.

We appreciate this opportunity to respond. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,


RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTc

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



21-0603
BRUCE S. ANDERSON, PH.D. M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

March 6, 2001

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copy, please refer to:
EMD - CAB
01-94 CAB

Ms. Rae M. Loui, P.E. *RML*
Acting Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Ms. Loui:

Subject: Comments on the "Draft Environmental Assessment
for the Sand Island Wastewater Treatment Plant
Modifications and Expansion Project"

Thank you for allowing the Department of Health, Clean Air Branch, to review and comment on the Draft Environmental Assessment for the "Sand Island Wastewater Treatment Plant Modifications and Expansion" project. The project proposes the construction of a number of new facilities and major modifications to the existing facility. Due to the nature of the project, there is a significant potential for fugitive dust to be generated during the removal of debris and during the grading, trenching, and construction activities that would impact nearby businesses and thoroughfares. It is suggested that a dust control management plan be developed which identifies and addresses activities that have a significant potential for fugitive dust to be generated. Implementation of adequate dust control measures during all phases of the project is warranted.

Construction activities must comply with provisions of Hawaii Administrative Rules §11-60.1-33 on Fugitive Dust. The contractor should provide adequate means to control dust from road areas and during the various phases of construction activities, including but not limited to:

- a. planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing material transfer points and on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- b. providing an adequate water source at the site prior to start-up of construction activities;

Ms. Rae M. Loui, P.E.
March 6, 2001
Page 2

- c. landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d. controlling of dust from shoulders, project entrances, and access roads; and
- e. providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities.

If you have any questions regarding fugitive dust, please contact Mr. Calen Miyahara of the Clean Air Branch at 586-4200.

Sincerely,

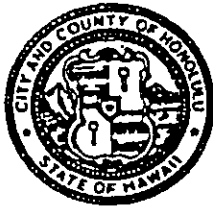


BRUCE S. ANDERSON, Ph.D., M.P.H.
Director of Health

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
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Phone: (808) 523-4564 • Fax: (808) 523-4567
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JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-190

April 12, 2001

Dr. Bruce S. Anderson, Ph.D., M.P.H.
Director of Health
State Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Attention: Calen Miyahara, CAB

Dear Dr. Anderson:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated March 6, 2001, concerning the subject DEA. We acknowledge our requirement for compliance with Hawaii Administrative Rules (HAR), Chapter 11-60.1-33, concerning fugitive dust. We will ensure the contractor(s) for the proposed activity is made aware of this requirement through the specification of HAR 11-60.1-33, in the project construction drawing notes.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Rae M. Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

FILE

BENJAMIN J. CAYetano
GOVERNOR OF HAWAII
OFFICE OF THE GOVERNOR
1505 KALANOAUAVI DRIVE
HONOLULU, HAWAII 96813



GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELD
UNNEL HISHIOKA

01 MAR 15 PM 1:16

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kekuhihewa Building, Room 565
601 Kamohala Boulevard
Kapolei, Hawaii 96707

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS

March 5, 2001

Rae M. Loui, Acting Director
Department of Design and Construction
City & County of Honolulu
650 South King Street, 11th floor
Honolulu, Hawaii 96813

LOG NO: 27043 ✓
DOC NO: 0102ELL5

Dear Ms Loui:

SUBJECT: Chapter 6E-8 Historic Preservation Review - Draft Environmental
Assessment for the Sand Island Wastewater Treatment Plant,
Modifications and Expansion
Honolulu, Kona, O'ahu
TMK:1-5-041:005

RECEIVED
MAR 15 2 37 PM '01
DIV. OF SURVEY
AND ACQUISITION

Thank you for the opportunity to comment on the DEA for the Sand Island Wastewater Treatment Plant Modifications and Expansion. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the project areas.

The DEA is correct in stating that the project site is comprised of fill lands and mixed fill lands. A review of our records shows that there are no known historic sites at the project location. This area of Sand Island has been in-filled to enlarge the shoreline. Since modifications are proposed for the existing Sand Island WWTP, and the plant is built upon fill soils, we believe that this project will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 692-8027.

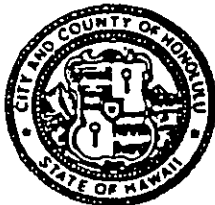
Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.co.honolulu.hi.us



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-185

April 12, 2001

Mr. Don Hibbard, Administrator
State Historic Preservation Division
State Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Attention: Elaine (Muffet) Jourdane

Dear Mr. Hibbard:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated March 5, 2001, concerning the subject DEA. We acknowledge your statement that the State Historic Preservation Division believes that the proposed project will have "no effect" on historic sites.

In accordance with existing construction practice the contractor for the proposed project will be instructed that should any potentially significant cultural resources or burials be discovered that work in the immediate area will temporarily cease until your Division is notified for further instructions.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rae M. Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTc

03/10/2001 10:00 AM

01-0539
R

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

01 MAR -9 10 53

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
EMD/SMW

March 5, 2001

SO304LO

Ms. Rae M. Loui, P.E.
Acting Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

Dear Ms. Loui:

Subject: Sand Island Wastewater Treatment Plan
Modifications and Expansion
Draft Environmental Assessment

Thank you for the opportunity to review the Draft Environmental Assessment for the Sand Island Wastewater Treatment Plan Modifications and Expansion project. The Solid and Hazardous Waste Branch has no comments at this time.

Please contact Mr. Lane Otsu of the Office of Solid Waste Management at 586-4240 if there are any questions.

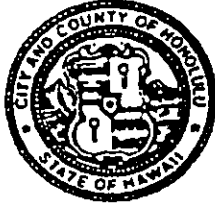
Sincerely,

STEVEN Y.K. CHANG, P.E., CHIEF
Solid and Hazardous Waste Branch

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-188

April 12, 2001

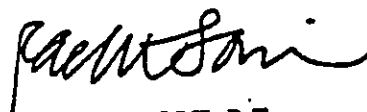
Mr. Steven Y.K. Chang, Chief
Solid and Hazardous Waste Branch
State Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Chang:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant Modifications and Expansion

Thank you for your response letter dated March 5, 2001, concerning the subject DEA. We acknowledge that the Solid and Hazardous Waste Branch, DOH, has no comments to offer at this time. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,


RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

01-0581

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD 1788

March 5, 2001

O1054105.wpd WP1
010166

Ms. Rae M. Loui, P.E.
Acting Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Ms. Loui:

Subject: Draft Environmental Assessment
Sand Island Wastewater Treatment Plant Modifications and Expansion
1350 Sand Island Parkway, Sand Island, Honolulu, Oahu
TMK: (1) 1-5-41: 05

We have reviewed subject project.

We concur with the modifications to the Sand Island Wastewater Treatment Plant which will improve the treatment and disposal of domestic wastewater and comply with the requirements of the National Pollution Discharge Elimination System (NPDES) permit.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules.

Should you have any further questions, please contact Mr. Dennis Tulang, Branch Chief of our Wastewater Branch at 586-4294.

Sincerely,

A handwritten signature in cursive script that reads "Thomas E. Arizumi".

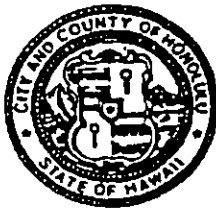
THOMAS E. ARIZUMI, P.E., CHIEF
Environmental Management Division

LNK:erm

Enclosure

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us



JEREMY HARRIS
MAYOR

RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-191

April 12, 2001

Mr. Thomas E. Arizumi, P.E., Chief
Environmental Management Division
State Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Arizumi:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated March 5, 2001, concerning the subject DEA. We have prepared the following itemized response to your comments:

1. We acknowledge your comment that the proposed modifications to SIWWTP will improve the treatment and disposal of domestic wastewater and comply with requirements of the National Pollutant Discharge Elimination System (NPDES) Permit.
2. We acknowledge that all wastewater plans must conform to applicable provisions of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in black ink, appearing to read "Raem Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

007/07/2001 12:00 PM 000 001 0124

000 DESIGN & CONSTR. - R.B. TORILL

01-0504
B

BENJAMIN J. CAYETANO
GOVERNOR



BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

'01 MAR -6 10:14

In reply, please refer to:
ENDCWB

02073PJS.01

February 27, 2001

DEPT OF HEALTH
02/27/01

Ms. Rae M. Loui, P.E.
Acting Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Attention: Ms. Cindy Masuoka
Wastewater Design and Engineering Division

Dear Ms. Loui:

**Subject: Draft Environmental Assessment for
Sand Island Wastewater Treatment Plant Modifications and Expansion
1350 Sand Island Parkway
Sand Island, Honolulu, Oahu, Hawaii
TMK: (1) 1-5-41:05
NPDES Permit No. HI 0020117**

The Department of Health (Department), Clean Water Branch has reviewed the February 13, 2001 transmittal of the subject document received on February 20, 2001. The document was prepared for "two separate construction contracts: 'New Headworks and Primary Clarifiers 7 & 8' and 'New Odor Control System and Modifications to Primary Facilities'." The Department has the following comments:

1. The Army Corps of Engineers should be contacted to identify whether a Federal permit (including a Department of Army permit) is required for the construction project. If it is determined that a Federal permit is required for the subject project, then a Section 401 Water Quality Certification would also be required from our office.
2. If the construction project involves any of the following discharges into Class A or Class 2 State waters, a National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for each activity:

Ms. Rae M. Loui, P.E.

February 27, 2001

Page 2

- a. Storm water runoff associated with "[c]onstruction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than five (5) acres of total land area." The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale.

Note: After March 10, 2003, NPDES general permit coverage will be required for discharges of storm water associated with construction activities, including clearing, grading, and excavation that result in the disturbance of one (1) acre or more.

- b. Hydrotesting water; and
- c. Construction dewatering effluent.

Notices of Intent (NOI) for NPDES general permit coverages should be submitted at least 30 days before the discharge is to occur. NPDES individual permit applications should be submitted at least 180 days before the discharge is to occur. NOI and NPDES individual permit application forms can be downloaded from the Clean Water Branch website at <http://www.state.hi.us/doh/eh/cwb/forms/index.html>.

Section 1.3 states that "[c]onstruction is tentatively scheduled to start in November 2001 and is expected to continue for approximately three years to February 2004." The NPDES Notice of General Permit Coverages will expire at midnight September 21, 2002 or when amendments to Chapter 11-55, Appendices (the NPDES general permits) are adopted, whichever occurs first. Therefore, the Permittee would need to reapply for all NPDES general permit coverages prior to the expiration date. An NPDES individual permit coverage may be issued for a term of less than five (5) years and would eliminate the requirement to reapply for any NPDES general permit coverages if construction was completed within the term of the NPDES individual permit.

If you have any questions, please contact Ms. Joanna L. Seto, Engineering Section of the Clean Water Branch, at 586-4309.

Sincerely,



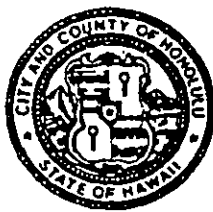
DENIS R. LAU, P.E., CHIEF
Clean Water Branch

JLS:cr

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu,hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

April 12, 2001

WWDE.PD 01-189

Mr. Denis R. Lau, P.E., Chief
Clean Water Branch, Environmental Management Division
State Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Attention: Ms. Joanna L. Seto

Dear Mr. Lau:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated March 22, 2001, concerning the subject DEA. We have prepared the following itemized response to your comments:

1. Coordination with the Army Corps of Engineers was completed during calendar year 2000. The Corps issued a determination on August 23, 2000, that a Department of the Army permit will not be required since waters of the U.S. will not be affected by construction activities; and,
2. We acknowledge that National Pollutant Discharge Elimination System (NPDES) permits will be required since construction stormwater, construction dewatering, and hydrotesting discharges will eventually be directed to waters of the State, at Honolulu Harbor.

We appreciated your review of the subject document. Should you have any future comments, please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rae M. Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

WDE

Sand Island Business Association

01 FEB 28 PM 2:23

01 MAR -1 10:00

01-0484

2

February 26, 2001

DESIGN
JVA
RE

Rae M. Loui, P.E./Acting Director
Dept. of Design & Construction
City & County of Honolulu
650 S. King St., 11th Fl.
Honolulu, HI 96813

RE: Sand Island Wastewater Treatment Plant Modifications & Expansion

Dear Director Loui:

Thank you for allowing us to review the Draft Environmental Assessment for this project.

We have reviewed the report and have no comments or questions.

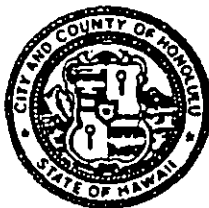
Very truly yours,


Rodney Kim
Executive Director

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-192

April 12, 2001

Mr. Rodney Kim
Executive Director
Sand Island Business Association
P.O. Box 17603
Honolulu, Hawaii 96817

Dear Mr. Kim:

Subject: Draft Environmental Assessment (DEA)
Sand Island Wastewater Treatment Plant (SIWWTP) Modifications and
Expansion

Thank you for your response letter dated February 26, 2001, concerning the subject DEA. We acknowledge that you have no comments or questions concerning our proposed project.

We appreciated your review of the subject document. Should you have any future comments please contact Ms. Cindy Masuoka of our office at 527-5843.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Raem Loui".

RAE M. LOUI, P.E.
Director

cc: Leighton Lum, Ph.D., RMTC

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 • FAX: (808) 523-4567
WEB SITE ADDRESS: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR

'01 FEB 26 01:57

DESIGN
DIV
DEPT



01-0229
To: Laverne
[Signature]

RAE M. LOUI, P.E.
Acting Director
GEORGE T. TAMASHIRO, P.E.
Deputy Director

01-0446

WWDE.PD 01-054

February 13, 2001

MEMORANDUM

TO: MR. ROSS S. SASAMURA, ACTING DIRECTOR
DEPARTMENT OF FACILITY MAINTENANCE

FROM: RAE M. LOUI, P.E., ACTING DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION *[Signature]*

SUBJECT: SAND ISLAND WASTEWATER TREATMENT PLANT
MODIFICATIONS AND EXPANSION
DRAFT ENVIRONMENTAL ASSESSMENT

RECEIVED
DEPARTMENT OF
FACILITY MAINTENANCE
FEB 15 8 59 AM '01

We request your review of the attached Draft Environmental Assessment for the "Sand Island Wastewater Treatment Plant Modifications and Expansion" project.

We would greatly appreciate the return of your comments by March 10, 2001.

Please contact Cindy Masuoka of our Wastewater Design and Engineering Division at extension 5843 if there are any questions, or if further information is needed.

February 22, 2001

We do not have any comments. If you have any questions, please call Laverne Higa at x-6246

Attachment

[Signature]

ROSS S. SASAMURA
Director and Chief Engineer

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
 650 SOUTH KING STREET, 11TH FLOOR
 HONOLULU, HAWAII 96813
 Phone: (808) 523-4564 • Fax: (808) 523-4567
 Web site: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-197

April 18, 2001

MEMORANDUM

TO: MR. ROSS S. SASAMURA, DIRECTOR
DEPARTMENT OF FACILITY MAINTENANCE

FROM: RAE M. LOUI, P.E., DIRECTOR *Rae M. Loui*
DEPARTMENT OF DESIGN AND CONSTRUCTION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
SAND ISLAND WASTEWATER TREATMENT PLANT (SIWWTP)
MODIFICATIONS AND EXPANSION

Thank you for your response dated February 22, 2001, concerning the subject DEA. We acknowledge that you have no comments or questions regarding the proposed project.

We appreciated your review of the subject document. Should you have any future comments, please contact Ms. Cindy Masuoka of our office at 527-5843.

cc: Leighton Lum, Ph.D., RMTc

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII 96813-3065 / TELEPHONE 547-7000

STEVE HOLMES
COUNCILMEMBER
Phone: (808)547-7002
Fax: (808)523-4220
E-mail: holmes@co.honolulu.hi.us

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DES	REV
DET	RE
REC MAR 05 2001 RMTC	

March 1, 2001

Ms. Rae M. Loui
Department of Design and Construction
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Ms. Loui:

SUBJECT: Draft Environmental Assessment for the Sand Island Wastewater Treatment Plant Modifications and Expansion Project

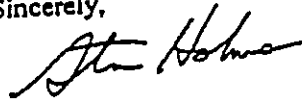
In reviewing the Environmental Assessment for this project, we would like to formally request that your department include, as part of the alternatives analysis, a discussion of the potential for on-site electrical generation with or without bio-gas as a fuel source.

The Mayor, in his State of the City Address, specifically included the city's bio-gas to energy efforts as a goal of the city. Tim Steinberger has been designated to work with these types of projects, and we are currently pursuing such a project at the Kailua Wastewater Treatment Plant with the assistance of The Gas Company.

Since the EA contemplates the potential use of digester it is particularly appropriate to include this discussion because the digester could provide a free fuel source. Bio-gas to energy would also save on environmental impacts and achieve significant cost savings over traditional electricity purchasing.

Thank you for your attention to this matter, and if you have any questions, please give me a call at 547-7002.

Sincerely,



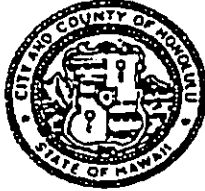
STEVE HOLMES, Chair
Environment and Public Works Committee

c: R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817
Attn: Brian Takeda

Office of Environmental Quality Control
235 South Beretania Street
State Office Tower, Suite 702
Honolulu, Hawaii 96813

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



RAE M. LOU, P.E.
DIRECTOR

GEORGE T. TAMASHIRO, P.E.
DEPUTY DIRECTOR

ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

WWDE.PD 01-165

March 29, 2001

The Honorable Steve Holmes, Chair
Environment and Public Works Committee
City Council
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Chair Holmes:

Subject: Sand Island Wastewater Treatment Plant (WWTP)
Modifications and Expansion Project
Draft Environmental Assessment

Per the attached letter dated March 1, 2001, and an earlier discussion with you and your staff, we acknowledge that the potential to convert bio-gas to electricity is an important energy effort that merits consideration.

We are aware of the bio-gas to electricity conversion facility that is presently being evaluated for the Kailua WWTP. We will follow the progress of this evaluation, and will consider installation of this type of facility for the Sand Island WWTP if it is shown to be cost-effective.

The following wording will be added to our Final Environmental Assessment document:

"The City is presently evaluating the potential to convert bio-gas to electricity. This type of conversion facility will be pursued for this project if it is deemed cost-effective."

SECTION 12

REFERENCES

(listed in chronological order)

Design Report for the Sand Island Wastewater Treatment Plant Expansion, City and County of Honolulu, Dept. of Design and Construction, by R. M. Towill Corporation, October 2000.

Sand Island Wastewater Treatment Plant Disinfection Facility and Effluent Pump Station, Revised Draft Environmental Assessment, City and County of Honolulu, Dept. of Design and Construction, by Brown and Caldwell, July 2000. (FONSI issued September 2000).

Sand Island Parkway Wastewater Pump Station Modifications, Draft Environmental Assessment, City and County of Honolulu, Dept. of Design and Construction, by GMP Associates, Inc., June 2000 (FONSI issued January 2001).

Preliminary Engineering Report for the Sand Island Wastewater Treatment Plant Modifications, Unit 1, Phase 2A, City and County of Honolulu, Dept. of Design and Construction, by R. M. Towill Corporation, September 1999.

Atlas of Hawaii, Third Edition. Department of Geography, University of Hawaii at Hilo, Sonia P. Juvik and James O. Juvik, Eds., 1998.

East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement, City and County of Honolulu, Department of Wastewater Management, by Belt Collins Hawaii, December 1993.

Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, U.S. Dept. of Agriculture, Soil Conservation Service, August 1972.

Sites of Oahu, Bishop Museum Press, Elspeth P. Sterling and Catherine C. Summers, 1978, First Published 1962.

Appendix A

WETLAND SURVEY

Botanical consultants

240 makee, suite 7b honolulu, hawaii 96815 (808) 923-4193 fax (808) 923-4193

September 12, 2000

Mr. Brian Takeda, Senior Planner
R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4951

Re: Sand Island Waste Water Treatment Plant Wetland Survey

Dear Mr. Takeda,

Our findings at the Sand Island Waste Water Treatment Plant Site are as follows:

1. That portion of the site located southwest of the drainage canal was found to be partly taken up by equipment and waste concrete storage, part bare open land, and part covered with alien vegetation. The alien vegetation consists of very widely separated kiawe trees (*Prosopis pallida* (Humb. & Bonpl. ex Willd.) Kunth) some as much as thirty-five feet in height. The shrub layer consists of a few widely scattered castor bean shrubs (*Ricinus communis* L.), some koa haole (*Leucaena leucocephala* (Lam.) deWit), wild tobacco (*Nicotiana glauca* R. C. Graham), and some Indian fleabane (*Pluchea indica* (L.) Less.). The ground layer is a changing mosaic of low growing weeds which includes Australian saltbush (*Atriplex semibaccata* R. Br.), *Flaveria trinervia* (Spreng) C. Mohr., *Bidens alba* (L.) DC, Golden crown beard (*Verbesina encelioides* (Cav.) Benth. & Hook.), 'aheahea (*Chenopodium murale* L.), *Trianthema portulacastrum* L., *Sida ciliaris* L., spiny amaranth (*Amaranthus spinosus* L.), khaki weed (*Alternanthera pungens* Kunth), *Chamaesyce maculata* (L.) Small, and *Sporobolus pyramidatus* (Lam.) Hitchc. along with many others. All appeared to be very stressed.

2. In the strip of land that lies between the canal and Sand Island Parkway there was a lot of open space surrounded by mostly kiawe trees, some koa haole bushes, a few grasses such as Guinea grass (*Panicum maximum* Jacq.), swollen fingergrass (*Chloris barbata* (L.) Sw.), and stargrass (*Chloris divaricata* R. Br.). *Boerhavia coccinea* Mill. and ivy gourd (*Coccinia grandis* (L.) Voight.) are both well established in this area. Long branches of pickle weed (*Batis maritima* L.), some ten to twelve feet in length were seen growing out of the canal border.

3. The canal vegetation consists of two obligate wetland species, pickle weed and red mangrove (*Rhizophora mangle* L.) i.e. obligate species are those that there is a 95% probability that they will be found under wetland conditions. Also the facultative wetland shrub Indian fleabane is plentiful along the canal. (Facultative species have a 34


to 66% probability of occurring under wetland conditions). In addition several weed species occur on the banks of the canal. They include wild tobacco, stargrass, spiny amaranth, kiawe trees, and bristly foxtail (*Setaria verticillata* (L.) P. Beauv.).

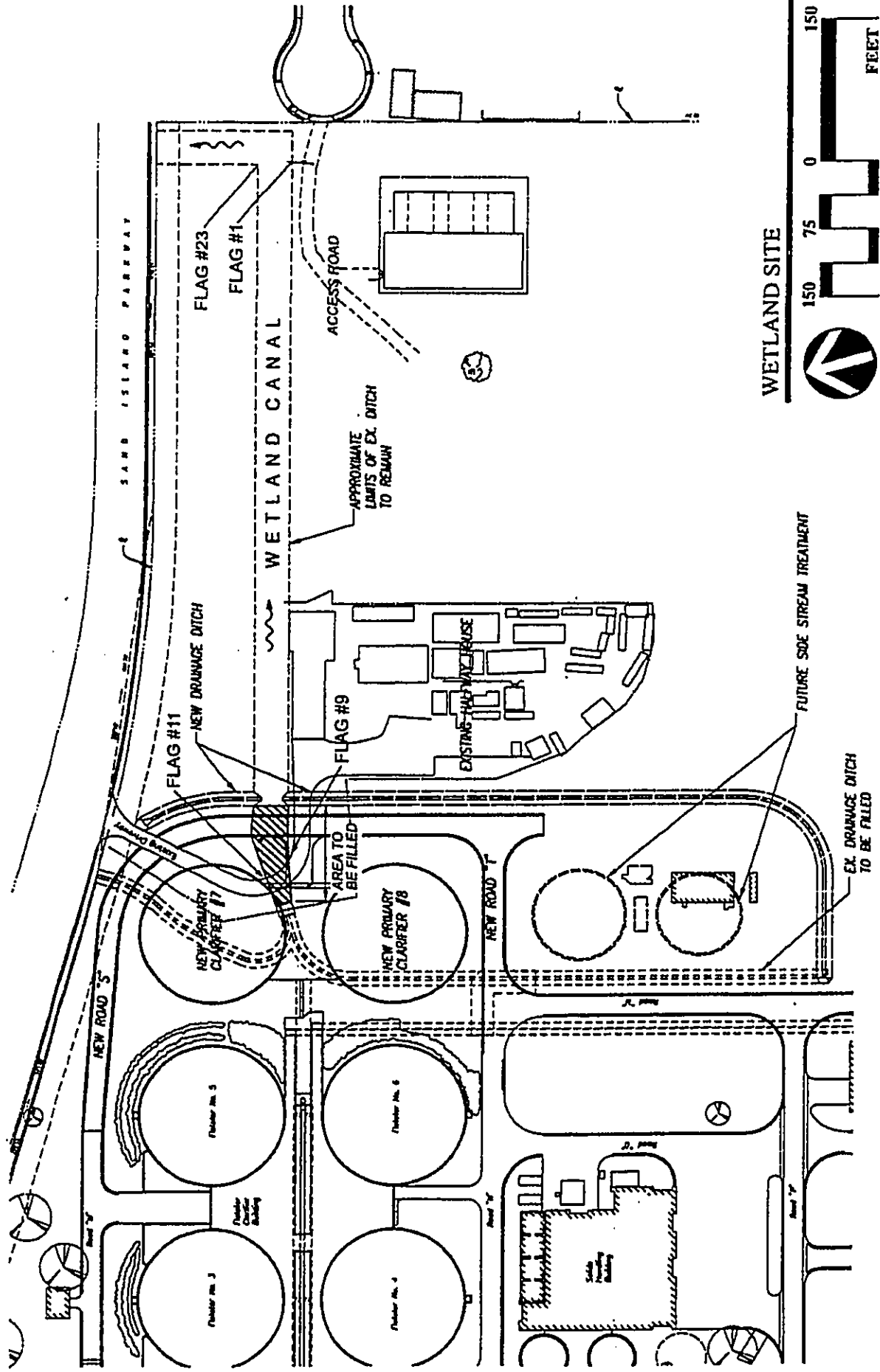
4. None of the vegetation of this site is native to the Hawaiian Islands. There were no proposed or listed threatened or endangered species present on this site.

5. **The Wetland** The wetland is a trapezoidal shaped drainage ditch with steeply inclined banks about four or five feet in height (Figure 1). The canal was partly created by very old fill which was used to develop the flat land that surrounds the waterway. Of the three Corps of Engineers criteria that define a wetland, i.e. hydrophytic vegetation, standing water within 18 inches of the surface for at least three weeks of the growing season (hydrology) and the presence of hydric soils, two are met on this site. The hydrophytic vegetation criterion is met by the presence in all parts of the canal by the afore mentioned obligate and facultative plant species. The hydrology criterion is met by the presence of standing water in the full length of the canal. The depth of the water varies from a few inches to several feet. The third criterion, hydric soils, cannot be tested due to the drastic topographic change created by the steep banks of the canal and the fact that the soil surrounding the canal appears to be old fill. However, since the soil was saturated almost to the top of the inclined banks the upper lip of the bank was taken to be the edge of the wetland. The wetland area has been flagged with numbered blue flags. Flag #1 is located on the makai side of the wetland near the entrance of the site access road (Figure 1). From Flag #1 along the rim of the wetland to the half-way house fence there is to be found flags #1 through flag #9. Inside the half-way house fence are to be found flags #10, 10A, and 10B. Flag #11 is located at the junction of the half-way house drive way and the wetland fence on the mauka side (Figure 1). Flags #11 through #23 (Figure 1) mark the mauka rim of the wetland. Flag #23 is across the wetland from flag #1. Some of the mangrove trees and some of the pickle weed extend beyond the marked wetland boundary. However, they are all rooted within the wetland area.

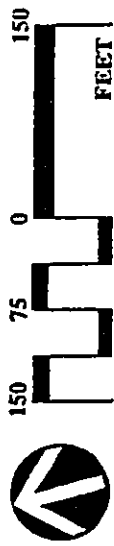
If you have any questions regarding this site, please call me.

Yours truly,


Evangelina J. Funk, Ph.D.



WETLAND SITE



SAND ISLAND WASTEWATER
TREATMENT PLANT WETLAND SURVEY
BOTANICAL CONSULTANTS, HONOLULU, HAWAII

R. M. TOWILL CORPORATION
Oct 2000

Revised 4/2001.

Appendix B

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
FOR
Sand Island Wastewater Treatment Plant Modifications
90 MGD PER
1350 Sand Island Parkway
Honolulu, Oahu, Hawaii

PREPARED FOR:

City and County of Honolulu
Department of Wastewater Management
Honolulu, Hawaii 96813

PREPARED BY:

R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817

March 1999

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1.0 INTRODUCTION

R. M. Towill Corporation (RMTC) has been retained by the City and County of Honolulu Department of Wastewater Management (DWWM) to perform a Phase I - Environmental Site Assessment (ESA) for portions of the Sand Island Wastewater Treatment Plant (SIWWTP), located at 1350 Sand Island Parkway Road, Honolulu, Oahu, Hawaii (Tax Map Key (TMK) # 1-5-41: 5). For the purpose of the 90 MGD PER, the areas to be evaluated in the ESA include those portions of SIWWTP as follows: 1) Pretreatment Facility area, 2) Influent Screens Building area, and 3) Flotator Clarifier Building area. Throughout this ESA the proposed project parcel of interest will be referred to as *the property*.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of this ESA was to investigate past and present land uses of the property and surrounding areas to determine if the potential for hazardous materials contamination exists. This ESA includes a site and vicinity walk-through, a database and documents search and review, an aerial photograph review, and a limited hydrogeological review.

This assessment was performed in accordance with American Society for Testing and Materials (ASTM) Standard: E 1527, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The ASTM Standard defines customary practice for conducting environmental site assessments of a parcel of commercial real estate with respect to contaminants within the scope of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and to petroleum products.

RMTC performed the following tasks:

Reviewed available documents including maps and aerial photographs to assess past land use at the property;

- Conducted a database review and contacted local and State agencies to determine the regulatory history associated with the property;
- Conducted site reconnaissance to assess present site conditions;
- Conducted interviews with personnel having knowledge of potential environmental hazards in the area;
- Reviewed site geology and hydrogeology; and
- Prepared Phase I Environmental Site Assessment Report which documents RMTC's findings.

This assessment is based on information that has been provided to RMTC by applicable agencies and individuals. Conclusions and recommendations are drawn from the cumulative findings of the aforementioned sections.

Photo documentation follows the text of this report.

3.0 SITE DESCRIPTION

3.1 CURRENT SITE LAYOUT

The parcel on which SIWWTP is located (TMK # 1-5-41: 05) is zoned I-3, Waterfront Industrial District on the island of Oahu. See Figures 1.1-1 and 2.1-2. The total area of the SIWWTP property is approximately 50,000 acres. For the purpose of the 90 MGD PER, the areas to be evaluated in the ESA include those portions of SIWWTP as follows: 1) Pretreatment Facility area, 2) Influent Screens Building area, and 3) Flotator Clarifier Building area.

3.2 SITE PHYSIOGRAPHY

According to the U.S. Geological Survey topographic map of the area (Honolulu Quadrangle), the property is located at approximately 21.3103 North latitude and 157.8847 West longitude. The property is located on Sand Island, approximately 1 mile west of the downtown Honolulu.

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Community Panel Number 150001 0115C, revised September 28, 1990) indicates that the property falls within Zone X, defined as an area outside the 500-year flood plain.

3.3 GEOLOGIC AND HYDROGEOLOGIC SETTING

3.3.1 Geology

The property is located near the center of Sand Island, less than 1/3 mile from the shoreline of the Pacific Ocean, off the south coast of the island of Oahu, on land classified by the U.S. Department of Agriculture Soil Conservation Service as Recent Man-Made Fill (Rf). This classification represents low areas which were filled during urbanization. The majority of these low areas are underlain at relatively shallow depths by Recent Alluvium (RA) and were originally marshy areas. The fill materials range from clays to gravels and mixtures of soils. The consistencies range from soft or loose to hard or very dense. Frequently placed without control, the quality and composition of the fill is variable.

The property as well as the entire Sand Island is located on area of landfill created from dredged material on the reef flat. This took place during the creation of the Kapalama Basin in Honolulu Harbor during the 1930s (Thompson, 1985). SIWWTP is adjacent to the edge of the area that was called Quarantine Island in the nineteenth century that was also partially created by landfill of the fringing coral reef at the end of the nineteenth century (Monsarrat, 1897).

3.3.2 Groundwater

The property is situated makai of the underground injection control (UIC) line, according to the Hawaii Department of Health Underground Injection Program Map, dated July 6, 1984. Groundwater in the area is reported to be brackish to saline and encountered at approximately or slightly higher than sea level. No drinking water sources are identified on or surrounding the property on Sand Island.

4.0 SITE RECONNAISSANCE

On January 27, 1999, Keith Kawaoka and Larry Baczski of RMTC performed a site visit and area reconnaissance. They met with Mr. Jay Nakadakari, DWWM, who escorted the site assessors on a tour of the project area and discussed his knowledge of the property in general.

The SIWWTP property consists of a single 50.000-acre parcel (Figures 1.1-1 and 2.1-2). The property is located on Sand Island, approximately 1 mile west of the downtown Honolulu. The City and County of Honolulu owns and operates SIWWTP, which treats domestic and industrial wastewater. SIWWTP is designed to treat an average flow of 82 million gallons per day (mgd) of wastewater (BCA, 1993). Average daily flow to the plant is approximately 73 mgd, or about 89 percent of capacity.

The property is situated in the central area of Sand Island. Access to the site is from Sand Island Parkway Road. According to title records, the property is bound on all sides by State property. The SIWWTP property is bounded by Sand Island State Park to the south, vacant land to the west, container freight station to the north, and various commercial and industrial subdivision activities to the east.

The area where the proposed Pretreatment Facility is to be located was visited. This area is located along the northwestern area of SIWWTP and south of the State Training Facility and parking lot. The land is currently vacant and planted with lawn grass and trees. No stressed vegetation was observed. The adjoining property is separated from SIWWTP by a chain-link fence with brush vegetation and characterized by miscellaneous solid waste debris such as assorted vehicle and machinery pieces and trash.

The Influent Screens Building was inspected during the visit. This area screens and removes coarse and grit material from the influent arriving at the headworks facility. A walkthrough of the building noted workstations where small quantities of hazardous materials were used and stored. These products were used mainly for maintenance, cleaning, and touchup and were stored in at the workbench area and in metal cabinets. Examples include paint, bleach, insecticide, and lubricating materials. No evidence of spills were noted in the various areas visited. Spill cleanup containers were noted in various locations of the facility.

The Flotator Clarifier area was examined, particularly the area east of Flotators #5 and #6, south of Sand Island Parkway Road and west of the halfway house. This location is proposed for the additional Flotators #7 and #8. This section currently has a paved roadway and vacant land. A dry drainage swale also traverses this area. No evidence of spills or stressed vegetation were noted.

Reconnaissance of the remaining areas of the plant property was also conducted. For the purposes of the 90 MGD PER, observations of the current conditions of the non-project areas were noted. However, specific conclusions and recommendations will be addressed when the plant modifications affect these areas of the property. The area bounded by the eastern boundary of the property, south of Sand Island Parkway Road, north of Sand Island State Park, and west of the neighboring industrial area is largely vacant. Except for the halfway house and Dewatering Facility (northeast corner), the area is characterized by brush and grass vegetation and bare ground. This area is littered with discarded tires, vehicle and machinery parts, and miscellaneous debris. According to Mr. Nakadakari, the area has undergone several removal cleanups and is still being cleared of refuse. The area east of the Chlorination Building is a miscellaneous storage area consisting of various plant parts including piping and machinery items. A plastic storage tent has been erected to hold some of these items.

Hazardous materials and wastes are also stored in a fenced off section. Drums of unknown materials are stored in an open area on pallets. Per drum labels, materials include oil, antifreeze, and sandblasting grit. The storage area could not be accessed during the visit. Additional storage is available in metal hazardous materials containment buildings.

According to Mr. Nakadakari, there is one underground storage tank (1,000 gallon diesel) located on the property. Located at the Sand Island Wastewater Pump Station, it was replaced in 1998.

5.0 PAST SITE CONDITIONS

RMTC reviewed property title records, the property entry in the Experian Realty Directory, and aerial photographs from the RMTC Photogrammetry Department to obtain information regarding the history of land use at the property.

5.1 PROPERTY RECORDS

Review of property title records indicate that the property was transferred from the U. S. Government by Presidential Executive Order 3752 to the Territory of Hawaii on July 15, 1946. Under Governor Executive Order 1188, the City and County of Honolulu was granted use of the property on February 5, 1947. The property is currently owned by the State of Hawaii.

5.2 REALTY DIRECTORY

RMTC reviewed the Experian Realty Directory, 31th Edition, for relevant data on the property. The Directory listed the property as Parcel # 1-5-41:5 comprising of 50.000 acres owned by the State of Hawaii. The Directory indicated the property was classified for industrial use.

5.3 AERIAL PHOTOGRAPHS

Aerial photographs obtained from the RMTTC Photogrammetry Department for the property from the years 1949, 1966, 1974, 1983, and 1994 and examined for evidence of previous site usage.

In the 1949 photograph, the property appears vacant. Quarantine Island is visible to the north of the property. Shipping operation activities are noted to the north.

In the 1966 photograph, there appears to be a vehicle junkyard on and adjacent to the property.

In the 1974 photograph, most of the property is vacant with some vegetation noted.

In the 1983 photograph, the SIWWTP is observed. The vehicle junkyard is still noted adjacent to the property to the west. The current Sand Island Parkway Road is noted in its present alignment. Areas to the east of the property is largely vacant with scattered development present. The halfway house is noted in the photograph.

In the 1994 photograph, shows the Sand Island State Park to the south of the property. Remnants of the automobile junkyard is still noted. Development of the area east of the property is progressing with several buildings evident.

6.0 ENVIRONMENTAL DATABASE REVIEW

A review was performed of the environmental regulatory databases (all updated within 90 days of search, or at most recent update available) required by ASTM methodology at the respective search distances specified by the methodology.

The review of the regulatory databases indicated the following:

- No U. S. EPA or state Superfund sites were within a 1.0 mile radius of the property;
- No CERCLIS site was located within a 0.5 mile radius of the property;
- No RCRA treatment, storage, and disposal facility was located within a 1.0 mile radius of the property;
- No RCRA generators were located on the property or adjacent properties;
- One underground storage tank facility was located on the property;
- Six leaking underground storage tanks were located within half-mile radius of the property;
- No active landfills were located within a 0.5 mile radius of the property; and

- No spills or incidents connected with the property were entered in the ERNS database.

Data files for the leaking underground storage tank sites were reviewed at the Department of Health Solid and Hazardous Waste Branch. Five of the six LUST sites were issued a no further action from DOH based on site cleanups. The James L. K. Tom property (about 1/4 mile ENE of SIWWTP) notified DOH on February 21, 1998 of a release from a 2,000 gallon diesel UST. No reports were available regarding the initiation of cleanup action at this site.

7.0 FINDINGS AND RECOMMENDATIONS

RMTC has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard E 1527 for the property identified as TMK # 1-5-41: 5. For the purpose of the 90 MGD PER, the areas evaluated in the ESA include those portions of SIWWTP as follows: 1) Pretreatment Facility area 2) Influent Screens Building area and 3) Flotator Clarifier Building area. Based on data compiled and evaluated including a site reconnaissance to observe existing conditions and a review of available local, state, and federal records, the assessment did not reveal evidence of recognized environmental conditions in connection with affected areas of the property.

Hazardous materials, consisting of suspect asbestos-containing materials and lead-containing paint were observed in a structure on the property, as were scattered areas of debris and solid waste. A program to remove and clear the debris material is currently underway. An evaluation will be conducted as the plant modifications involve this area of the property. The presence of lead paint and asbestos presents additional costs to any modification of the existing structures on the property.

No other environmental conditions were observed at the property or during the neighborhood survey.

Based on the available information reviewed, RMTC concludes that the property affected by the 90 MGD PER has no significant environmental concerns and recommends no further environmental evaluation at this time.

8.0 LIMITATIONS

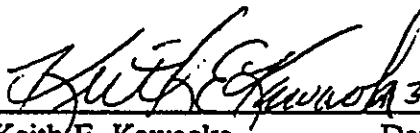
The conclusions presented in this report are professional opinions based solely upon visual observations of the sites and their respective vicinities, and our interpretation of the available historical information and documents reviewed. They are intended exclusively for the purpose outlined herein and at the site location and project indicated. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

R.M. Towill Corporation's services are performed, within the limits prescribed by its Clients, with the usual thoroughness and competence of the consulting profession, in accordance with the standard for professional services at the time those services are rendered. No warranty or representation, either expressed or implied, is included or intended in its proposals, contracts, or reports.


Opinions and recommendations presented herein apply to site conditions existing at the time of our investigation and those reasonably foreseeable; they cannot necessarily apply to site changes of which this office is not aware and has not had the opportunity to evaluate.

9.0 SIGNATURES

The Phase I Environmental Site Assessment was performed by Mr. Larry Baczeski and Dr. Keith E. Kawaoka of R. M. Towill Corporation.



Keith E. Kawaoka Date



Larry Baczeski Date

REFERENCES

- Belt Collins Hawaii, *East Mamala Bay Wastewater Facilities Plan, Final Environmental Impact Statement*, prepared for City and County of Honolulu Department of Wastewater Management, December 1993.
- Experian, *State of Hawaii Realty Directory, 31th Edition*, 1997.
- Federal Emergency Management Agency, *Flood Insurance Rate Map, City and County of Honolulu*, Community Panel Number 150001 0115C (Panel 115 of 135), September 28, 1990.
- Foote, Donald; Hill, Elmer; Nakamura, Sakuichi; Stephens, Floyd; *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, August 1972.
- Monsarrat, M., *Honolulu, Hawaiian Islands*, Reg. Map 1210. On file at the Hawaii State Survey Office, Honolulu.
- Nakadakari, Jay, DWWM, Personal communication, January 27, 1999.
- Piedgrass, Don, DWWM, Personal communication, March 22, 1999.
- State of Hawaii DOH, *Active LUST Log Listing*, July 1, 1997.
- State of Hawaii DOH, *Listing of Underground Storage Tanks*, July 1, 1998.
- State of Hawaii DOH, *Permitted Landfills List*, July 20, 1998.
- Thompson, E., *Pacific Ocean Engineers*, U. S. Army Corps of Engineers, Pacific Ocean Division, Ft. Shafter, Hawaii, 1985.
- U.S. Environmental Protection Agency (EPA), *CERCLIS*, November 10, 1998.
- U.S. EPA, *Emergency Response Notification System Database*, December 30, 1998.
- U.S. EPA, *National Priority List*, October 8, 1998.
- U.S. EPA, *RCRIS*, October 1, 1998.

PHOTO DOCUMENTATION

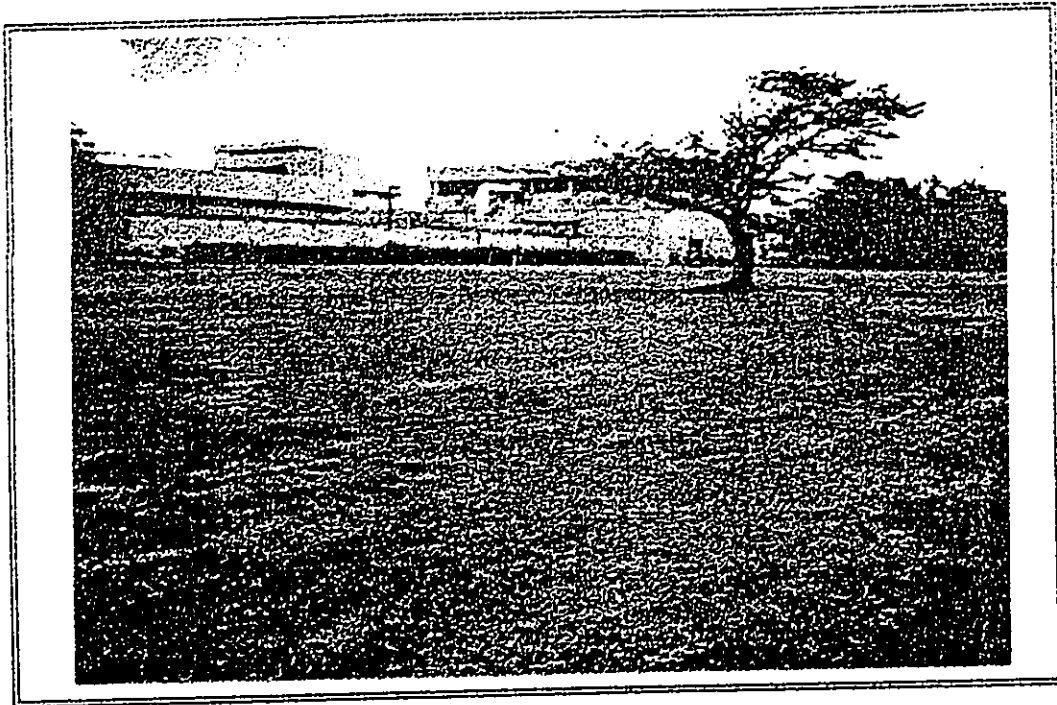


Photo 1: View of proposed Pretreatment Facility area looking south. Influent Screens Building is in the background.

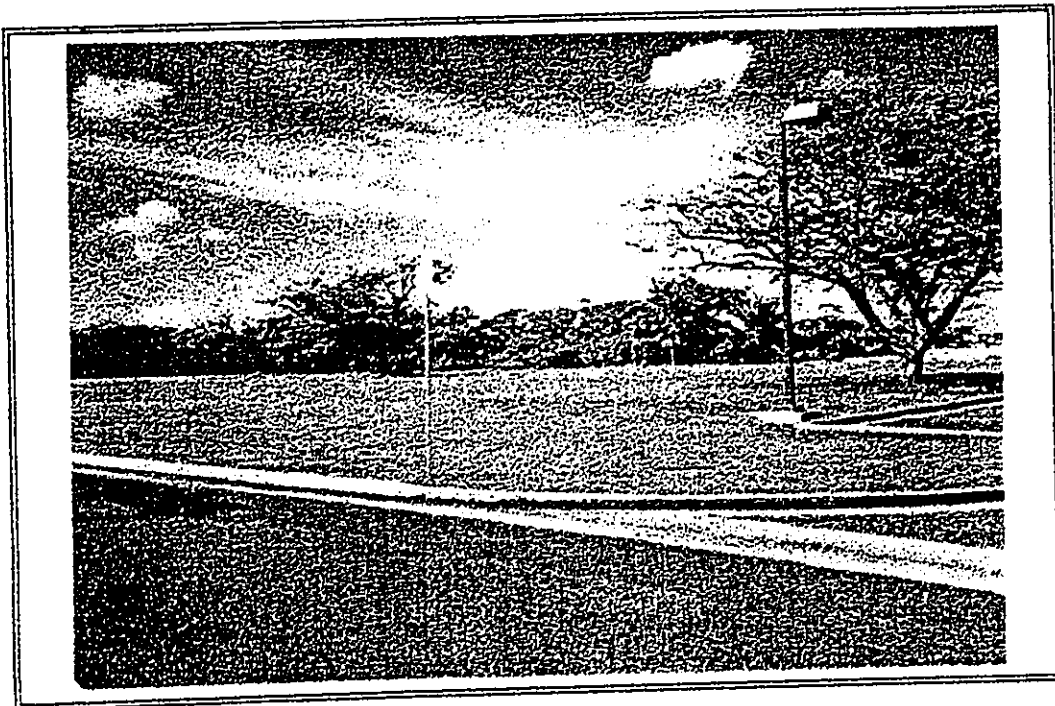


Photo 2: Proposed Pretreatment Facility area looking southwest. SIWWTP parking lot is on the right.

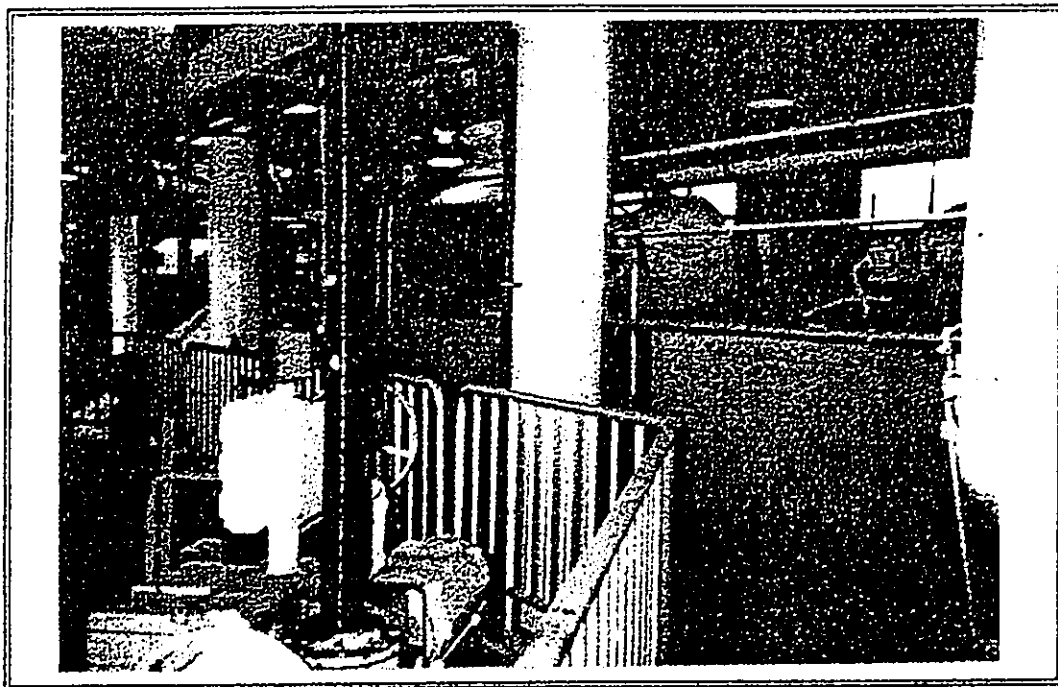


Photo 3: View of interior portion of Influent Screens Building.

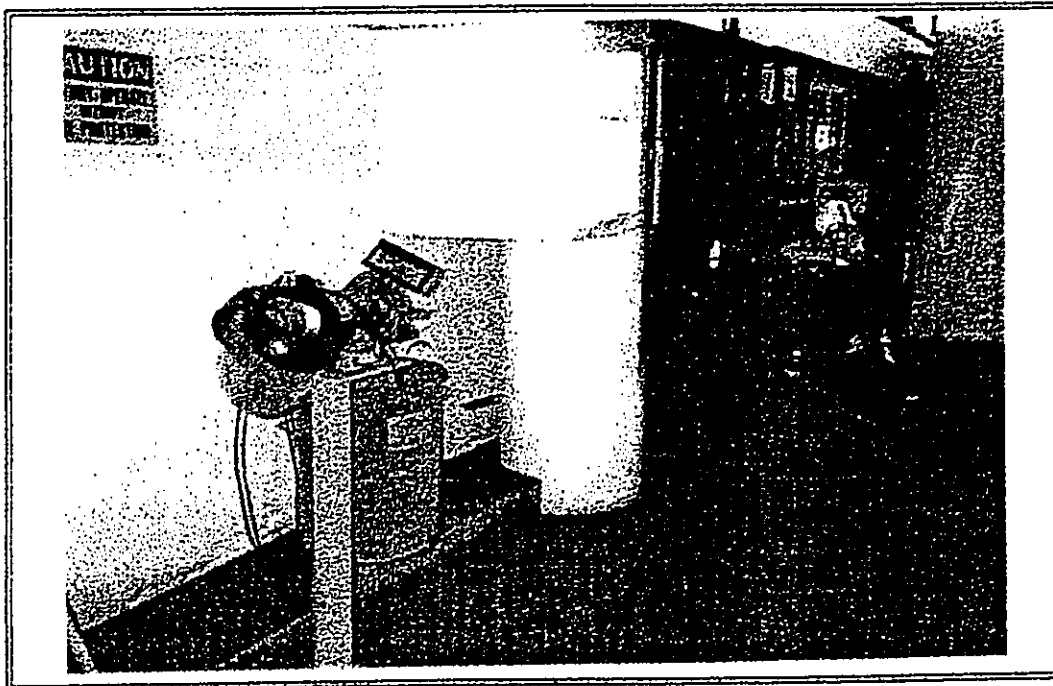


Photo 4: Workstation area of Influent Screens Building. Oily waste can is on the left.



Photo 5: View looking to the north of the proposed clarifier modifications area.

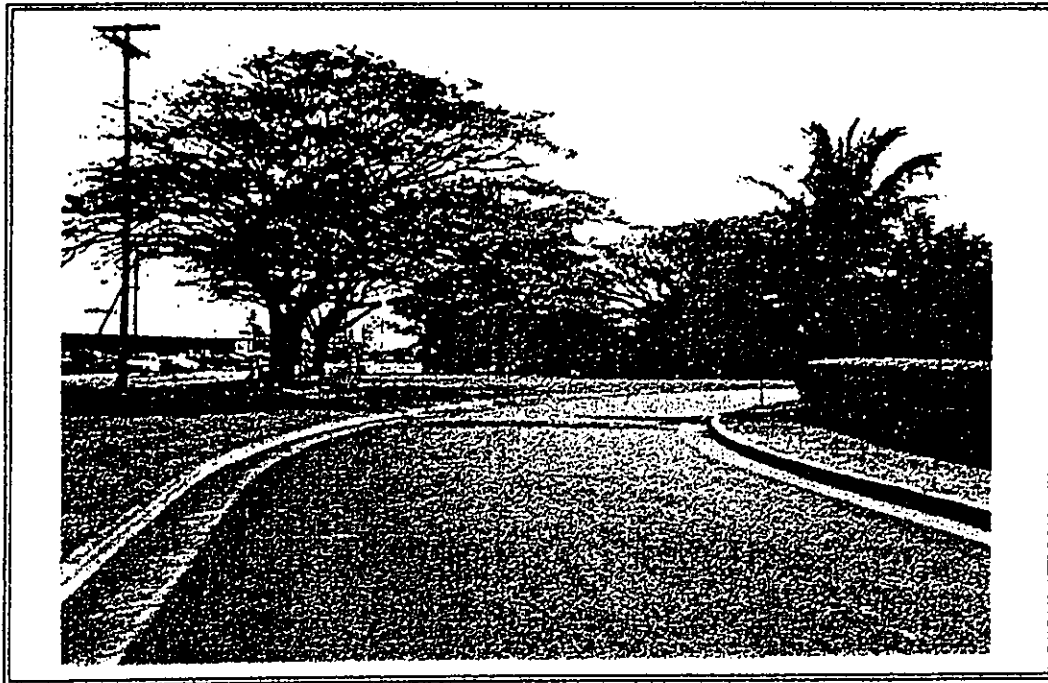


Photo 6: View looking to the east in the area of the proposed clarifier modification area.
Sand Island Road Parkway is on the left.

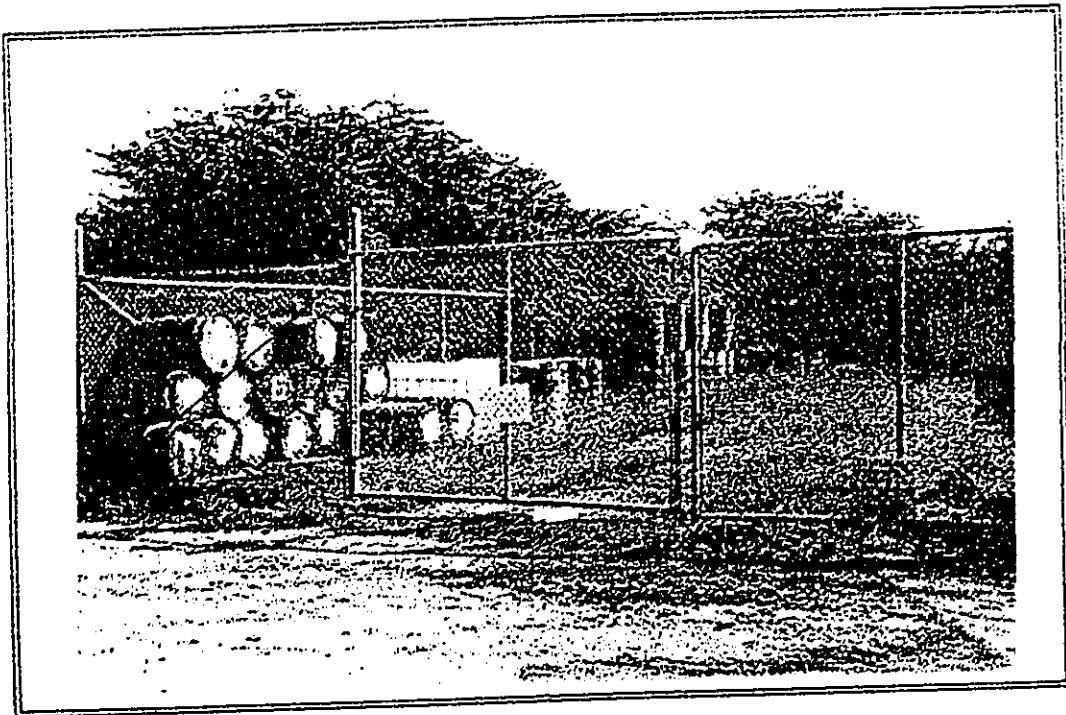


Photo 7: Drum storage area.

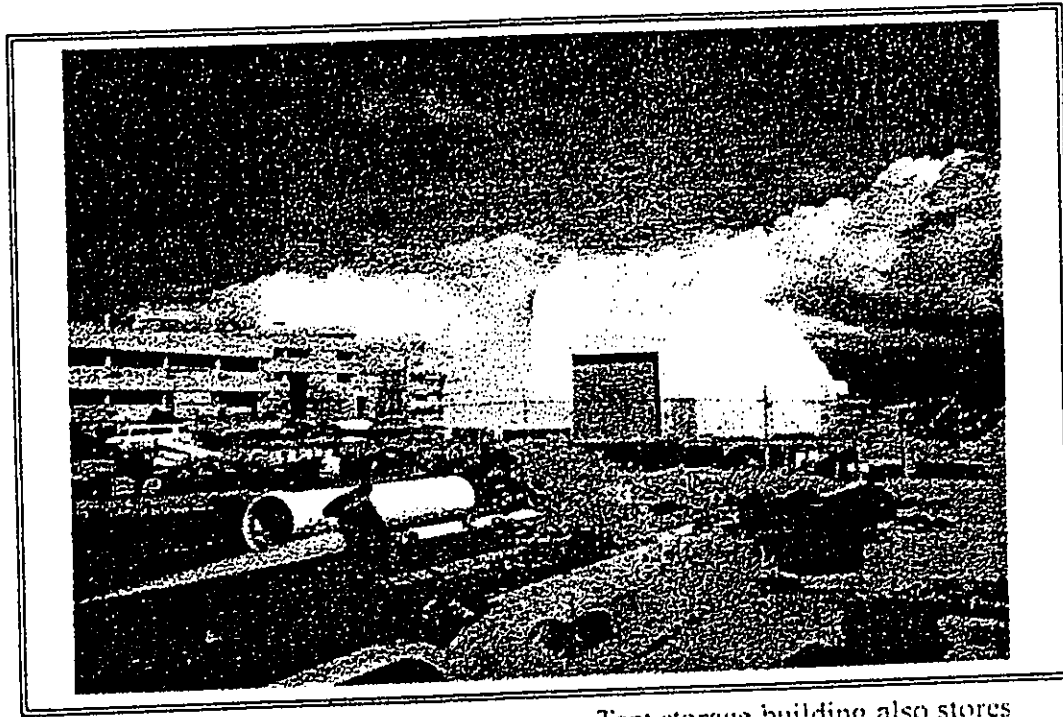


Photo 8: Miscellaneous equipment storage area. Tent storage building also stores equipment and piping.



Photo 9: Area of stockpiled miscellaneous debris awaiting removal. Area is located in the vacant undeveloped eastern portion of SIWWTP.



Photo 10: Assorted tire and vehicle debris located in the eastern vacant portion of SIWWTP.

Appendix B

Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

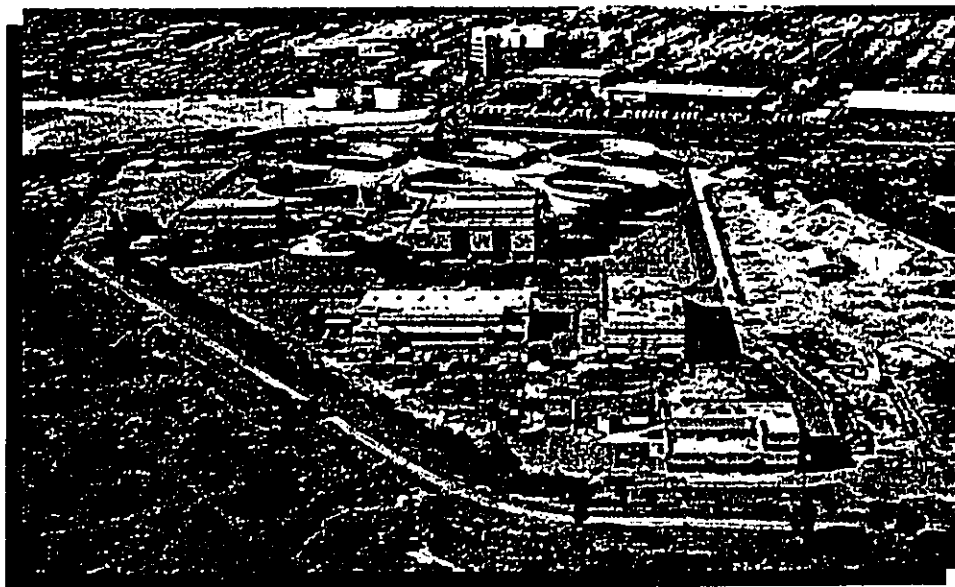
APPENDIX B

PHASE I ENVIRONMENTAL SITE ASSESSMENT, SAND ISLAND WASTEWATER
TREATMENT PLANT, NOVEMBER 2003

November 2003

Final Phase I ESA

*Phase I Environmental Site Assessment
Sand Island Wastewater Treatment Plant
Honolulu, Hawaii*



Prepared for:

*City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, Hawaii 96813*

Prepared by:



Under Subcontract to:





**City and County of Honolulu
Department of Design and Construction**

**Final Phase I Environmental Site Assessment
Sand Island Wastewater Treatment Plant
Honolulu, Hawaii**

Prepared for: City and County of Honolulu

Prepared by: Environet Inc., Honolulu, Hawaii

Under Subcontract to: R.M. Towill Corporation

November 2003

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Appendices

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List of Acronyms

ACM	Asbestos Containing Materials
APSC	Army Port Service Command
ASTM	American Society of Testing and Materials
bgs	below ground surface
CCH	City and County of Honolulu
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CORRACTS	Corrective Action Report
DLNR	Department of Land and Natural Resources
DOH	Department of Health
EDR	Environmental Data Resources
EI	Ecology and Environment, Inc.
EI	Environet, Incorporated
EPA	United States Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
F/C	Float/Clarifiers
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FINDS	Facility Index System/Facility Identification Initiative
FITS	FIFRA/TSCA Tracking Systems
FL	Fill land
gpm	Gallons Per Minute
HASITC	Hawaii Alcoholism Sand Island Treatment Center
HVOC	Halogenated Volatile Organic Compound
HECO	Hawaiian Electric Company
HEER	Hazard Evaluation and Emergency Response
HMIRS	Hazardous Material Information Reporting System
JaC	Jaucas sand
LUST	Leaking Underground Storage Tank
LQG	Large Quantity Generator
mg/kg	milligrams per kilogram
mgd	million gallons per day
MINES	Mines Master Index File
MLTS	Material Licensing Tracking System
NFRAP	No Further Remedial Action Planned
NPL	Federal National Priorities List
NPDES	National Pollution Discharge Elimination System
OSW	Office of Solid Waste
PADS	PCB Activity Database System
PCB	Polychlorinated Biphenyls
ppm	parts per million
PRG	Preliminary Remediation Goal
psi	pounds per square inch
PSI	Professional Services Industries, Inc.
RAATS	RCRA Administrative Action Tracking System
RCRA	Resource Conservation and Recovery Act

RCRIS	Resource Conservation and Recovery Information System
REC	Recognized Environmental Condition
RMTC	R.M. Towill Corporation
ROD	Records of Decision
SAL	Soil Action Level
scfm	standard cubic feet per minute
SHWS	State Hazardous Waste Sites
SPILLS	Release Notifications
SQG	Small Quantity Generator
SSTS	Section 7 Tracking Systems
SVOC	Semi-Volatile Organic Compound
TMK	Tax Map Key
TPH	Total Petroleum Hydrocarbon
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
TSD	Treatment Storage and Disposal
UH	University of Hawaii
U.S.	United States of America
USDA	United States Department of Agriculture
UST	Underground Storage Tank
UV	Ultraviolet
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

Executive Summary

This Phase I Environmental Site Assessment was completed for the Sand Island Wastewater Treatment Plant (WWTP) in order to identify the potential current presence of recognized environmental conditions at the site. This ESA was performed in accordance with recommended guidelines established by the American Society of Testing Materials (ASTM).

This Phase I ESA was performed by Environet, Inc. (EI) for the City and County of Honolulu (CCH) under subcontract to R.M. Towill Corporation (RMTC). EI reviewed pertinent regulatory records, previous environmental reports, available documents, maps, and aerial photographs; interviewed individuals knowledgeable about the project site and surrounding area; performed a site reconnaissance of the area; and evaluated the information collected and prepared this report summarizing EI's findings, opinions, conclusions, and recommendations.

The Sand Island WWTP is located at 1350 Sand Island Parkway, which is located on Sand Island off the south-central coast of Oahu in Honolulu, Hawaii (Figure ES-1, Site Location Map). The WWTP occupies a portion of tax map key (TMK) 1-5-041: 005, an approximate 50 acre land parcel owned by the State of Hawaii (the State) and leased to the CCH. Also located on Parcel 05 are three facilities that are not included in this assessment: (1) Building 3 – State Training Center – located within the WWTP complex; (2) the Hawaii Alcoholism Center (also known as the Sand Island Treatment Center [HASITC]) located east of the WWTP; and (3) a CCH Highways Division dewatering facility located east of the WWTP. Included in this assessment is a portion (of an approximate area of 14 acres) of TMK 1-5-041 Parcel 22 located southwest of the WWTP Maintenance Building (see Figure ES-2, TMK 1-5-041).

Based on the historical research, EI identified six RECs at the Sand Island WWTP: (1) the potential presence of heavy metals associated with sand blast grit in an area located south of the Carpenter Shop; (2) the potential presence of one or more debris areas as evidenced by junkyards/dump sites and buried materials in and around the project site which could impact the soil and groundwater at the project site; (3) the potential presence of lead-based paint in dozens of "empty" drums located on the southeast corner of the site; (4) the potential presence of mixed waste in soil piles on the west side of the site which could impact the site; (5) the documented presence of PCB-impacted soil at the site which presents restrictions for occupancy and land use; and (6) the presence of former junkyards/dump sites in and around the site which could impact soil and groundwater at the site. EI recommends sampling and chemical analysis of the sand blast grit in order to determine the metals content of the materials and the proper disposal of this material. In addition, EI recommends the removal and proper disposal of the drums located on the southeast corner of the site. Furthermore, EI recommends conducting a Phase II environmental assessment of the site with the collection of surface and subsurface soil and groundwater samples in the former junkyard and dump sites. The samples should be analyzed for constituents of concern related to the specific REC.



PROJECT SITE
 SAND ISLAND WWTP
 TNK 1-5-041505




MAP SOURCE: USGS
 TOPOGRAPHIC MAP 7.5'
 QUADRANGLE HONOLULU, HAWAII
 1981

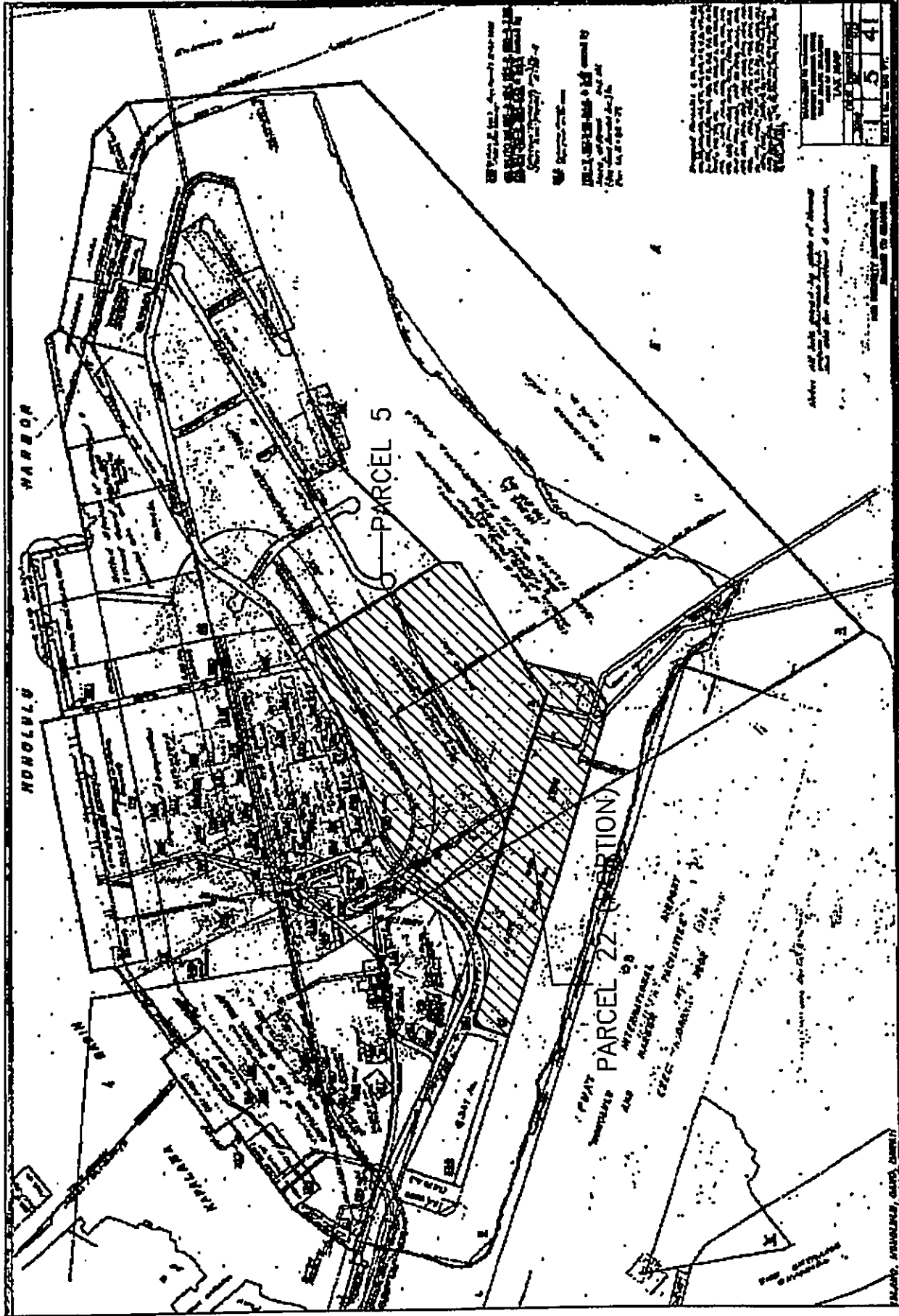
PROJECT LOCATION
 ISLAND OF OAHU, HAWAII

DRAWN BY	DATE
RCA	04/25/03
CHECKED BY	DATE
RSY	04/25/03
APPROVED BY	DATE
RSY	04/25/03
PROJECT NUMBER	DATE
AMM	04/25/03
PROJECT NO.	FIGURE NO.
P02-006	ES-1

SAND ISLAND WWTP
 PHASE I SITE ASSESSMENT
 SITE LOCATION MAP



ENVIRONET, INC.
 HONOLULU, HAWAII
 OAHU



DATE	04/25/03
PROJECT	SAND ISLAND WWTTP PHASE I SITE ASSESSMENT
TAX MAP KEY	(1) 1-5-41
PROJECT MANAGER	AMM
DATE	04/25/03
PROJECT NO.	P02-006
ES-2	

Section 1 Introduction

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify the potential current presence of recognized environmental conditions at the Sand Island Wastewater Treatment Plant (WWTP) site, including potential impacts from known releases in the surrounding area. The term "recognized environmental conditions," as defined by the American Society of Testing and Materials (ASTM) Designation E 1527-00, means:

"the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions determined to be *de minimis* are not recognized environmental conditions."

This ESA was performed according to the recommended guidelines established by ASTM Designation E 1527-00, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM, 1997). For the purpose of this report, hazardous substances and petroleum products are jointly referred to as "hazardous materials." The extent of research to identify recognized environmental conditions (RECs) is limited by the scope of services.

1.2 Scope of Services

This Phase I ESA is being performed for the City and County of Honolulu (CCH) under subcontract to R.M. Towill Corporation (RMTTC). The scope of work for this ESA was outlined in Environet, Incorporated (EI) proposal of July 29, 2002. EI performed the following work:

1. Reviewed the following documents for which pertinent sections are presented in Appendix A:
 - Report, Preliminary Environmental Site Assessment, Sand Island Corporation Yard and Park, Sand Island, Oahu, Hawaii, TMK 1-5-41: Parcels 6, 22, and 130 (Masa Fujioka and Associates, 1993);
 - Phase I ESA (RMTTC, 1999);
 - Phase I Brownfields ESA for Sand Island State Park, Honolulu, Hawaii (Ecology and Environment, Inc. [EEI], 2000a);
 - Phase I ESA and Phase II Sampling and Analysis Plan for Sand Island State Park Brownfields (EEI, 2000b);
 - Brownfields Targeted Site Assessment Report, Sand Island State Park Brownfields, Honolulu, Hawaii (EEI, 2001);
 - Phase I ESA, HECO Mokuone Substation, Honolulu, Hawaii (Levine Fricke, 2001a);
 - Phase II ESA, Proposed HECO Mokuone Substation, Honolulu (Levine Fricke, 2001b).
 - Environmental Site Investigation (EI, 2002a);
 - Draft Human Health Risk Assessment (EI, 2002b);

-
- Environmental Site Investigation Follow-On PCB Sampling (EI, 2002c);
 - Soil Stockpile Sampling and Analysis (EI, 2002d);
 - Toxic Substances Control Act Notification Report (EI, 2002e);
 - Final Letter Report 96" Primary Effluent Pipeline, Effluent Pump Station Wet Wells, and 84" – Final Effluent Pipeline Sampling, and Analysis at the Ultraviolet Disinfection Project Site (EI, 2002f);
 - Contaminated Soil Review Report, Draft Soil Management Plan (EI, 2002g);
 - Environmental Site Investigation (EI, 2003a);
 - Additional Sampling Investigation Report (EI, 2003b); and
 - Letter Report, Environmental Site Investigation, Proposed New Pond and Injection Well Location, PCB Sampling (EI, 2003c).
 - Sand Island Wastewater Treatment Plant, Limited Soil Characterization, PCB Assessment, Sand Island, Honolulu, Hawaii (Professional Services Inc., 2002);
 - Sand Island Wastewater Treatment Plant, PCB Hot Spot Removal Excavation and Clearance Testing, Sand Island, Honolulu, Hawaii (Professional Services, Inc., 2003).
2. Contracted with Environmental Data Resources, Inc. (EDR) to conduct a regulatory database search of known underground storage tanks (USTs); landfills; hazardous waste generation or treatment, storage and disposal facilities; and subsurface contamination in the surrounding area up to within 1 mile of the center of the site (or site boundaries). The EDR report is included in Appendix B.
 3. Requested available State of Hawaii Department of Health (DOH) hazardous materials files on the subject site and surrounding sites of concern. The results of the inquiry are included in this report.
 4. Reviewed available CCH Building Department records on the subject site.
 5. Reviewed readily available geologic maps and literature on file in EI's office for information on the physical and hydrogeologic settings of the site.
 6. Researched site history by (a) reviewing a chronology of 27 aerial photographs covering the site and adjacent area available at RMTC and the University of Hawaii Hamilton Library Map Collection; (b) reviewing historic topographic maps; and (c) contracting with EDR to research the availability of fire insurance maps of the site and vicinity.
 7. Performed an interior and exterior site reconnaissance for obvious indications of RECs such as current hazardous materials storage or use; unusually stained soils, slabs, and pavements; drains, sumps, drums, tanks, and electrical transformers; stressed vegetation; and discarded hazardous materials containers. Photographs taken on the day of the site reconnaissance are included in Appendix C.
 8. Interviewed Mr. Jay Nakandakare and Mr. Wayne Salas of the Sand Island WWTP to inquire about past and present uses of the site and provided Mr. Nakandakare with a questionnaire to complete and mail back to EI (Appendix D). EI also interviewed Mr. Wendell Lewis and Mr. Wendell Chun of RMTC, Mr. Jesse Sybico of M&E Pacific, and Mr. Francis Kim of HASITC.

9. Evaluated the information collected and prepared this report summarizing EI's findings, opinions, conclusions, and recommendations.

1.3 Significant Assumptions

There are no significant assumptions to this ESA.

1.4 Deviations

There are no significant deviations or deletions from the ASTM standard.

Section 2

Site Description

2.1 Location and Legal Description

The Sand Island WWTP is located at 1350 Sand Island Parkway, which is located on Sand Island off the south-central coast of Oahu in Honolulu, Hawaii (Figure 2-1, Site Location Map). The WWTP occupies a portion of tax map key (TMK) 1-5-041: 005, an approximate 50 acre land parcel owned by the State of Hawaii (the State) and leased to the CCH. Also located on Parcel 05 are three facilities that are not included in this assessment: (1) Building 3 – State Training Center – located within the WWTP complex; (2) the Hawaii Alcoholism Center (also known as the Sand Island Treatment Center [HASITC]) located east of the WWTP; and (3) a CCH Highways Division dewatering facility located east of the WWTP. Included in this assessment is a portion (of an approximate area of 14 acres) of TMK 1-5-041 Parcel 22 located southwest of the WWTP Maintenance Building (see Figure 2-2, TMK 1-5-041).

2.2 Site and Vicinity General Characteristics

The Sand Island WWTP is bound on the north by Sand Island Parkway and beyond that are TMK 1-5-041 parcels 111 and 200. Parcel 111 is a 86.122 acre area owned by the State of Hawaii and used by Matson Terminals and Sea Land Service, Incorporated. Parcel 200 encompasses an approximately 41 acre area which is owned by the State and used by Matson Navigation.

East of the WWTP are TMK 1-5-041 parcels 178 and 270 through 273, all owned by the State of Hawaii. Hookela and Mikole Streets are located east of parcels 178, 270, 271, and 272. East of the site is parcel 178, a 1.307 acre area, which includes 1259 Mikole Street and 358 Hookela Street. Sand Island Business Association and Aloha Tool & Rental Inc. lease the land from the State. Parcel 270 includes 1276 Mikole Street, a 1.4 acre area, which is leased to the Sand Island Business Association (Lot 131), and United Tire and Recapping Company (Lot 92). Parcel 271, a 0.759 acre area, which includes 1275 Mikole Street, is leased to Sand Island Business Association and NK Corporation (Lot 93). Parcel 272, a 7,600 square foot (0.174 acre) area, includes 1267 Mikole Street which is leased to the Sand Island Business Association.

South and southwest of the site is TMK 1-5-41 parcel 006, a 141 acre parcel, which is known as 1640 Sand Island Parkway. It is owned by the State and is used as the State Marine Education and Training Center and the Sand Island State Park.

West of the site is TMK 1-5-41 parcel 022. Parcel 022 is a 25.87 acre area which is owned by the State. A portion of parcel 022, located along Sand Island Parkway, is used as a Matson Container Yard Annex. Approximately 14 acres of the southern portion of parcel 022 is a temporary construction staging area for the CCH WWTP projects.

Sand Island WWTP (parcel 005) and Parcel 200 are zoned as I-3 Waterfront Industrial whereas Parcels 178 and 270 through 272 are zoned as I-2 Intensive Industrial District. Parcel 006 is zoned as P-2 General Preservation.

2.3 Current Site Use and Improvements

The site is currently being used for a wastewater treatment plant (WWTP) and is undergoing extensive improvements including the construction of new primary clarifiers, a new ultraviolet disinfection unit and ancillary structures. Also included in this assessment is an approximate 14-acre portion of Parcel 022 located southwest of the WWTP. This area is used as a temporary construction staging area for the CCH and is owned by the State of Hawaii. Located on Parcel 005, east of the floatation clarifiers is the HASITC which is operated by the Hawaii Alcoholism Foundation. Further east of the treatment facility is a CCH Highways Division dewatering facility. These areas are not included as part of this assessment.

The Sand Island WWTP is an 82 million gallon per day (mgd) advanced primary treatment facility serving metropolitan Honolulu. The facility is owned and operated by the CCH.

The plant has been in operation since 1979 and currently treats an average daily wastewater flow of 74 mgd. The liquid stream process consists of screenings, advanced primary treatment units, and chlorination. The solids handling stream includes grit removal, gravity thickening, thermal conditioning, and dewatering. Treated effluent from the WWTP is discharged through the Sand Island Ocean Outfall. Existing structures at the site include the following:

- Building 1 – Control/Administration Building;
- Building 2 – Main Electric Vault;
- Building 3 – Sand Island Parkway Pump Station;
- Building 3A – State Training Center (not included in the assessment);
- Building 4 – Flotation/Clarifiers;
- Building 5 – (Headworks) Influent Screening and Grit Facility;
- Building 6 – Gravity Thickeners and Solids Handling Building;
- Building 7 – Former Ground Maintenance Building – no longer present;
- Building 8 – Maintenance and Supply;
- Building 9 – Control Laboratory/Maintenance Building;
- Building 10 – Effluent Pump Station;
- Building 11 – Carpenter Shop;
- Building 12 – Painter Shop.

The following is a summary of the wastewater treatment process at Sand Island WWTP.

1. The first treatment process in the liquid handling stream is screening and grit removal in the Headworks Building (Building 5). The Headworks Building is comprised of four mechanically-cleaned bar screens, two influent channels, and a grit removal and washing system. Presently, all screenings and grit are discharged onto a conveyor belt and hauled to a sanitary landfill on a daily basis.

2. The next treatment process in the liquid handling stream is the Flotation-Clarifier Tanks (F/C tanks) (Building 4) where the pretreated wastewater is gravity fed through influent channels into six available F/C tanks. Each F/C tank has a hydraulic capacity of 28.8 mgd (172.8 mgd total) and a maximum surface loading of 13.8 mgd. The wastewater flow enters the F/C tanks through the bottom of the center well, where it intermixes with pressurized recycled primary effluent obtained from the effluent channel. This dissolved-air flotation physical process for wastewater treatment serves to effectively remove scum, grease, and suspended solids. The floatables are then skimmed

off the surface into a float trough, along with scum from the scum box, and sent to the solids handling section where it is combined with the dewatered primary sludge.

3. Settled solids that are recovered from the bottom of the F/C tanks are transported to the degritter cyclones at Building 6 (Solids Building) via raw sludge pumps. Presently, there are 12 raw sludge pumps (two for each F/S tank). Cyclone degritters use centrifugal force to separate grit and other heavy solids from the F/C tanks' settled sludge. The grit is then sent to grit classifiers to be washed prior to hauling and disposal at the sanitary landfill. The remaining dewatered sludge from the cyclone degritters is pumped via the primary sludge line to a sludge division box at Building 6 (Solids Building) for further processing. The dewatered sludge from the cyclone degritters is screened and thickened before routing to the wet sludge storage tanks (Gravity Thickener Tanks at Building 6).

4. The subsequent processes are related to solids handling and the thermal conditioning system. Underdrain sludge from the wet storage tanks, which is about 4 to 5 percent solids concentration, is passed through grinders, then through a high-pressure pump, which is set to pump 85 to 90 gallons per minute (gpm) while maintaining a discharge pressure of 400 to 430 pounds per square inch (psi). At this point, compressed air, with a range of 400 to 430 psi and 215 standard cubic feet per minute (scfm) is introduced prior to the sludge entering a heat exchanger. Sludge passes through the heat exchanger onto the reactor where steam is introduced. The sludge has an average detention time of about 25 minutes within the reactor, which allows it to become conditioned and biologically stable and hence improve the dewatering characteristics.

5. The heat-treated (Zimpro Thermal Oxidation Process) sludge is then sent to the sludge holding tanks and stored until it can be dewatered through centrifuge units, with the addition of cationic polyelectrolyte polymer. The production of steam for the reactor begins with the softening of water for the boilers. Potable water is pumped through a Clayton dual water softener system. Once the water is softened it is pumped to the deaeration tank. Just before entering the deaeration tank it is mixed with a chemical treatment solution. The deaeration removes oxygen and increases the temperature of the boiler feed water to 212 degrees F. The deaerated water drops into a storage tank and is maintained at a 212 degrees F temperature. From there it is pumped to the boilers.

6. Effluent from the F/C tanks is screened prior to final disposal through the deep ocean outfall. Three traveling screens are used to remove any remaining floatable prior to discharge.

The quality of the plant effluent is regulated by the National Pollutant Discharge Elimination System (NPDES) Permit Number 0020117. In 1998, the CCH renewed its NPDES permit. The renewed permit established requirements for the improvement of the performance and reliability of the plant. Based on these requirements, the CCH has initiated a number of plant modification and improvement projects. The projects are summarized in Table 2-1. The project areas are shown on Figure 2-3 (Site Layout).

The construction end dates presented in Table 2-1 represent the proposed enforceable dates of the current NPDES permit; these dates are currently being negotiated with U.S. Environmental Protection Agency (EPA). The facilities must be completed and operational by these dates when finalized.

2.4 Environmental Setting

2.4.1 Site Topography

Topographic map coverage for the subject site is provided in design drawings by R.M. Towill Corporation. Elevations on the site range from about 5 feet in the southwest to 8 feet in the northeast. The site slopes gently to the southwest. Storm water collected by catch basins within the WWTP and run-off from the construction project sites is directed into two drainage channels on or near the project site. One channel runs generally in a north-south direction is located along the eastern edge of the existing WWTP. This channel collects all of the storm water runoff from the WWTP and the majority of the construction project site runoff. The other channel runs generally in an east-west direction begins at a confluence of the north-south channel within the Headworks Phase 2 construction project site, passes between the proposed new gravel paved parking area and the HASITC, and ends at the eastern edge of the parcel. This channel directs storm water from the north-south channel to the storm drain line along Sand Island Access Road. During the time of the a previous field investigation, standing water was observed in the east-west trending drainage channel to the east of the HASITC driveway, and no water was observed in the drainage channels to the west of the driveway.

2.4.2 Regional Geology and Hydrogeology

Soils at the site are classified as Jaucas sand (JaC) and mixed fill land (FL) by the U.S. Department of Agriculture Soil Conservation Service (USDA, 1972). The Jaucas series consist of excessively drained calcareous soils that developed from wind and water deposited sand derived from coral and sea shells. JaC is pale brown to very pale brown sand mixed with organic matter and alluvium. FL consists of areas filled with materials dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources (USDA, 1972).

Groundwater at the site consists of two distinct systems, a shallow, perched aquifer and a deeper basal aquifer. The shallow aquifer is unconfined (i.e., not confined by an impermeable layer on top of the aquifer) and occurs at about 3 to 5 feet below ground surface (bgs). This aquifer is classified as a sedimentary aquifer and is hydraulically connected to the ocean, which means that the groundwater elevation is subject to tidal influence. The deep aquifer is classified as a volcanic flank basal, confined aquifer (Mink and Lau, 1990). The depth to the basal aquifer is greater than 1,000 feet below ground surface (Wentworth 1951).

2.4.3 Current Adjoining Property Uses

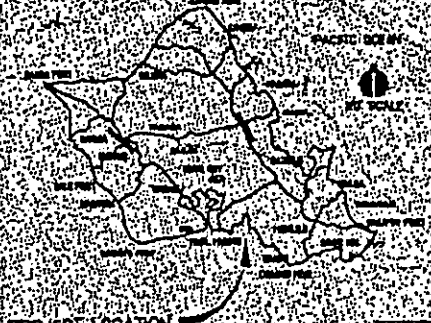
Adjoining properties include Sand Island Parkway to the north; TMK 1-5-041 parcels 178 and 270 through 273, all owned by the State of Hawaii, to the east with Hookela and Mikole Streets located east of parcels 178, 270, 271, and 272; Sand Island State Park to the south, and a portion of TMK 1-5-41 parcel 22 (undeveloped land owned by the State of Hawaii) to the west. These adjoining parcels are generally flat.

Table 2-1: Summary of Sand Island Wastewater Treatment Plant Construction Projects

Improvement	Description	Estimated Construction Start Date	Estimated Construction End Date
UV Disinfection project (Figure 2-3, orange shade)	A new ultraviolet (UV) light disinfection system will treat 150 mgd of primary effluent. The work also includes a 300 mgd effluent pump station. The disinfected primary effluent will discharge through the existing outfall.	Presently under construction.	July 20, 2002. An extension from July 21, 2002 to August 2, 2003 for beginning continuous operation has been requested with EPA.
Headworks Project Phase 1 (Figure 2-3, yellow shade on western side of plant)	A new headworks facility consisting of office, screening, flow measurement, and grit removal equipment will be built.	Presently under construction.	February 10, 2004.
Headworks Project Phase 2 (New Primary Clarifiers) (Figure 2-3, yellow shade on eastern side of plant)	Two primary clarifiers will be constructed.	Presently under construction.	February 10, 2004.
Bioconversion Project (Figure 2-3, blue shade)	The bioconversion project includes construction of two new anaerobic digesters with a digester to be installed in the future, and replacement of the solids handling equipment inside of the Solids Handling Building.	March 2003	February 18, 2005
Expansion Project (Figure 2-3, green shade)	The expansion project includes construction of new odor control systems and modifying four gravity thickeners and equipment for the six existing clarifiers.	November 2003. The construction start date is dependent on the completion of the Headworks Phase I and II projects and the UV Disinfection project.	February 18, 2005
Sand Island Parkway Wastewater Pump Station (WWPS) Modification Project (Figure 2-3, purple shade)	The project will replace the pumps, force main and electrical equipment, and remove the existing UST.	March 2003.	February 18, 2005.



PROJECT SITE
SAND ISLAND WWTP
TMK 1-5-041.005




MAP SOURCE LOGS:
TOPOGRAPHIC MAP 751
QUADRANGLE, HONOLULU, HAWAII
1981

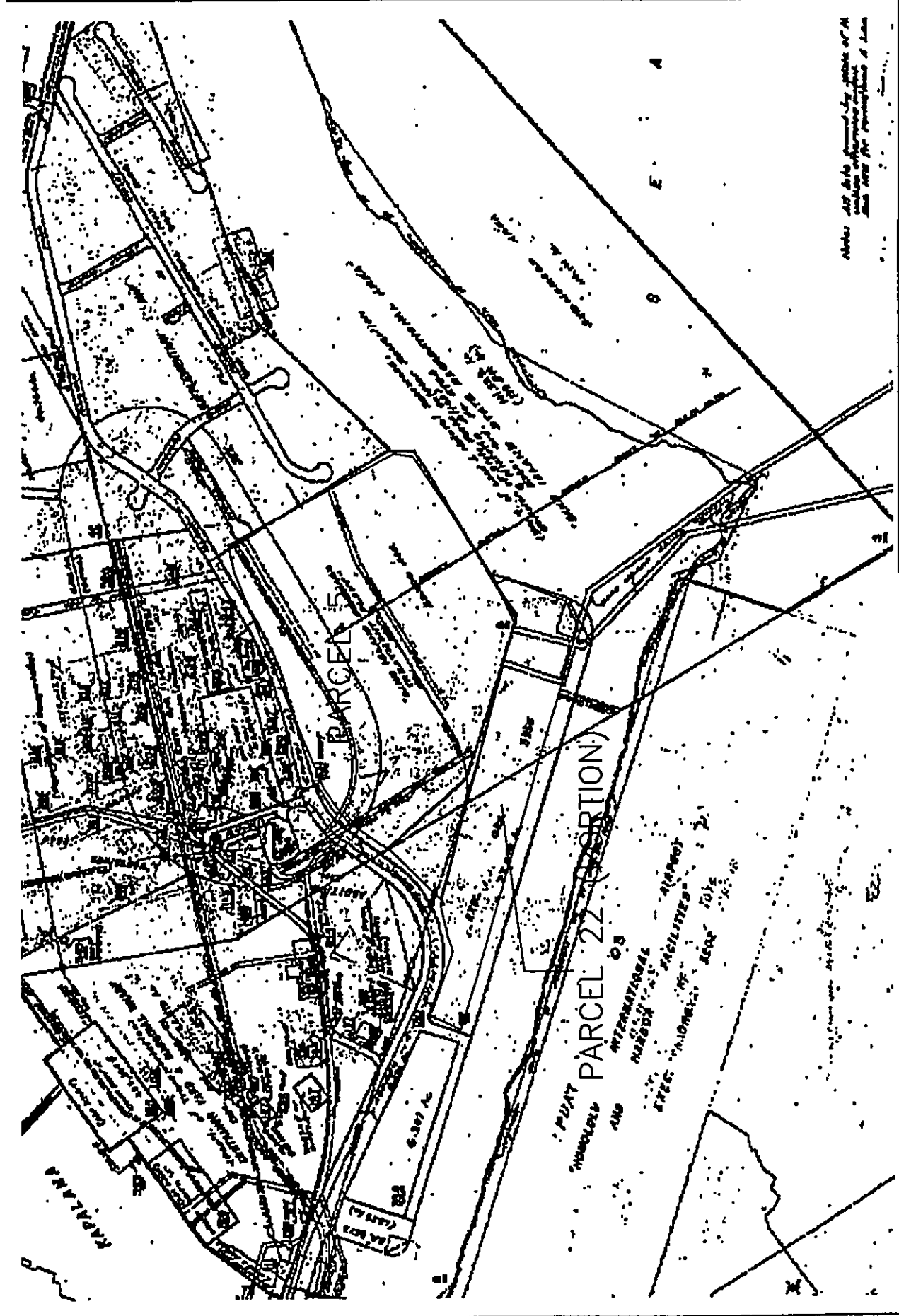
PROJECT LOCATION
ISLAND OF OAHU, HAWAII

DRAWN BY	DATE
RCA	04/25/03
CHECKED BY	DATE
RSY	04/25/03
APPROVED BY	DATE
RSY	04/25/03
PROJECT MANAGER	DATE
AMM	04/25/03
PROJECT NO.	FIGURE NO.
P02-006	2-1

SAND ISLAND WWTP
PHASE I SITE ASSESSMENT
SITE LOCATION MAP



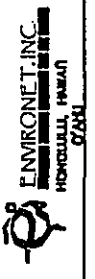
ENVIRONET, INC.
HONOLULU, HAWAII
O'AHU



Notes: All data furnished by owner or other reliable source. This map is not a warranty of title.

PROJECT NO.	P02-006	FIGURE NO.	2-2
PROJECT MANAGER	AMM	DATE	04/25/03
APPROVAL BY	RSY	DATE	04/25/03
CHECKED BY	RSY	DATE	04/25/03
DRAWN BY	RCA	DATE	04/25/03

SAND ISLAND WWTP
 PHASE I SITE ASSESSMENT
 TAX MAP KEY
 (1) 1-5-41



ENVIRONET, INC.
 ENVIRONMENTAL ENGINEERING
 CONSULTING

Section 3

User-Provided Information

The ASTM Practice suggests that the ESA User, RMTTC and the City and County of Honolulu, provide documents to the ESA preparer. This section summarizes the findings of previous investigations at and around the project site.

1993 – Preliminary Environmental Site Assessment, Sand Island Corporation Yard and Park, Sand Island, Oahu, Hawaii, TMK 1-5-41: Parcels 006, 022, and 130 (Masa Fujioka and Associates, 1993). This report documents the presence of numerous piles of asphalt and soils as well as areas of refuse located along the ocean side of the adjacent DLNR property. The report indicates that significant amounts of refuse and debris, including junked vehicles, two empty 55-gallon drums, and 30 5-gallon containers of unknown product were observed in one area. In another portion of the investigation area (west of the WWTP) was "Mr. Pila's junkyard" which reportedly had been in existence at that location for 48 years (since approximately 1945). The junkyard included stacks of junked vehicles, drums, stained soils, cans of paints and sealants, and a 1,000 gallon capacity storage tank. In an area immediately southwest of the WWTP and south of the junkyard was documented as "relatively clean" with fairly thick vegetation and WWTP outfall piping. Another area close to the plant was used by Richard Lee Trucking as a soil and construction debris stockpile. The piles appeared to be relatively clean. Substantial debris was noted along the beach including construction materials and equipment and 15 discarded batteries.

In addition the report indicated that "Towco Enterprises" a vehicle storage and crushing facility was in operation on the southwest portion of the WWTP at that time. According to the report the Towco facility operated on the site from May 1989 to the summer of 1992. Towco received cars through the CCH's abandoned vehicle program, stripped the vehicles of resalable components, and crushed the vehicles. The compactor was reported to have been situated in various locations during the years of operation with reports of soil contamination by waste motor oil and other fluids at each of these locations. An on-site inspection of the facility by the State of Hawaii DOH Office of Solid Waste (OSW) found lead acid batteries throughout the site in various physical states. A DOH Hazard Evaluation and Emergency Response (HEER) report indicated that soil throughout the site was found to contain lead at concentrations of 500 milligrams per kilogram (mg/kg). Following a preliminary assessment, DOH determined that the likelihood of exposure was low and Towco was granted a "no further action" status under CERCLA on 15 October 1992 based on the following two factors: (1) the site is located in an area of low potential to contaminate drinking water, and (2) the concentrations of lead were below the levels considered to be a threat for an industrial area.

1999 – Phase I Environmental Site Assessment for Sand Island Wastewater Treatment Plant Modifications, 90 MGD PER, 1350 Sand Island Parkway Road, Honolulu, Hawaii (RMTTC Corporation, 1999). This report was prepared in order to investigate past and present land uses of the property (90 MGD PER – Pretreatment Facility area, Influent Screens Building area, and Flotator Clarifier Building area) and surrounding areas to determine if the potential for hazardous materials contamination exists. The report focused on the proposed Pretreatment Facility located south of Building 3, the existing Influent Screens Building (Building 5), and proposed location of additional Flotators #7 and #8 located east of Building 4. Site conditions at the proposed Pretreatment Facility were described as "currently vacant and planted with lawn grass and trees." The western adjoining property was described as being separated from the WWTP by a chain-link fence with brushed vegetation and characterized by miscellaneous solid waste debris such as assorted vehicle and

machinery pieces and trash. Building 5 was described as containing minor quantities of hazardous materials (insecticides, paint, bleach, and lubricating materials). The proposed site of Flotators #7 and #8 was described consisting of a paved roadway and vacant land with a dry drainage swale that traversed the area. No evidence of spills or stressed vegetation were noted in the investigation areas. The report notes that a 1966 aerial photograph indicates that a vehicle junkyard was present on and adjacent to the property and 1983 and 1994 aerial photographs indicate that a vehicle junkyard is noted on the western adjacent property. The report stated that there was no evidence of recognized environmental conditions with affected areas of the property. However, it did indicate that hazardous materials consisting of asbestos-containing materials and lead-containing paint were observed in a structure on the property as were scattered areas of debris and solid waste. The report noted that debris removal was underway. The report stated that the presence of asbestos and lead paint presents additional costs to any modifications of the existing structures on the property.

2000-2001 - Phase I Brownfields ESA for Sand Island State Park, Honolulu, Hawaii (Ecology and Environment, Inc. [EEI], 2000a) and Brownfields Targeted Site Assessment Report, Sand Island State Park Brownfields, Honolulu, Hawaii (EEI, 2001). These reports document the site and environmental conditions at TMK 1-5-041: Parcels 006, 334, and 022 which includes land located immediately west and south of the WWTP. The Phase I report includes a map of Camp Sand Island made in 1949 showing the presence of Army barracks, latrines, office, warehouses, a chapel, and a box factory on the site or vicinity. In addition, the Phase II investigation includes soil sampling of soil piles and areas of concern on the western and southern adjacent properties. Soil samples were collected from approximately 25 sampling locations or exploratory pits. A total of 83 soil samples were collected from 25 test pits. All soil samples were analyzed for semi-volatile organic compounds (SVOCs, EPA Method 8270B). In addition most samples were tested for metals (EPA Method 6010/7471). Twenty-eight of the samples were analyzed for volatile organic compounds (VOCs, EPA Method 8260), pesticides and polychlorinated biphenyls (PCBs, EPA Method 8080/8081). Soil sampling results indicated the presence of metals (arsenic, lead, antimony, and nickel), SVOCs (acetophenone and benzo(a)pyrene), pesticides (dieldrin), and VOCs (methylene chloride) above action levels. PCBs were detected at low concentrations (below action levels). The report concluded that impacted soils exist in the areas south and west of the project site and that impacted soils should be dealt with to minimize the potential risk to groundwater, humans, and the environment prior to any development of the property.

2001 - Phase I ESA, HECO Mokuone Substation, Honolulu, Hawaii (Levine Fricke, 2001a) and Phase II ESA, Proposed HECO Mokuone Substation, Honolulu (Levine Fricke, 2001b). These reports detail the environmental condition at the northeast portion of the project site. The Phase I ESA was completed for two areas south of the Sand Island Parkway, north and east of the HASITC, and north and west of the CCH Highways Division dewatering facility. HECO is planning to sublease a 0.33-acre parcel of land east of the WWTP for a new electrical substation, and the ESAs were conducted as part of their environmental due diligence before subleasing the land parcel. The HECO substation site is located immediately to the east of the planned Headworks Phase 2 construction area (Figure 2-3).

The Phase I report indicated that the investigation areas were apparently sublet to "Toko" (probably Towco Enterprises) from approximately the mid-1980s to 1995. The company reportedly used the area to store abandoned and wrecked vehicles for disposal. The report indicated that there were no buildings, foundations, or other structures present. In addition, there was no evidence of underground utilities. However, a drainage ditch was observed on or near the investigation area. No septic tanks, sumps, ponds, dry wells, water wells, or other types of conduits or containments were observed. No USTs or ASTs were observed; however, two 55-gallon steel drums (empty), broken

windshield glass, small automobile parts (brake pads, battery cables, chain links, bearings), and accumulations of trash were observed. A drainage ditch with standing water was observed on the investigation area. The report concluded that there was no direct evidence of chemical releases or other environmental issues at the sites. The report recommended that the empty drums and a partially filled 5-gallon container present at the site be removed and properly disposed of. Although no evidence of a release to the environment was discovered during the site inspection, the previous use of the site as a junkyard for abandoned vehicles indicates that the potential exists for a release to have occurred and, therefore, a Phase II Environmental Site Assessment was recommended.

The Phase II ESA included the collection of eight surface soil samples from the investigation area and the advancement of four soil borings to 12 feet below ground surface at locations where elevated concentrations of petroleum-related constituents and lead were detected. Permanent groundwater monitoring wells were installed in each of the borings. Results of the investigation indicated that Total Petroleum Hydrocarbons (TPH) as oil, lead and ethylbenzene are the primary constituents of concern with maximum concentrations in soil of 9,000 mg/kg, 1,300 mg/kg, and 10.5 mg/kg, respectively. The analytical results also indicated the presence of low concentrations of xylenes, naphthalene, cadmium, chromium, and PCBs.

No additional action with regard to TPH-oil was recommended as neither a sheen nor phase-separated hydrocarbons were observed either in soil or groundwater at any of the sampling locations. In addition, the mean concentration of lead at the site was 911 mg/kg which exceeds the U.S. EPA's industrial preliminary remediation goal (PRG) of 750 mg/kg. Therefore, capping the investigation area with gravel in order to protect on-site workers was recommended and approved by the DOH. Annual monitoring at site in order to monitor the concentrations of ethylbenzene and other petroleum-related constituents at the site was also recommended.

2002-2003 - Environmental Site Investigation (EI, 2002a); Draft Human Health Risk Assessment (EI, 2002b); Environmental Site Investigation Follow-On PCB Sampling (EI, 2002c); Soil Stockpile Sampling and Analysis (EI, 2002d); Toxic Substances Control Act Notification Report (EI, 2002e); Final Letter Report 96" Primary Effluent Pipeline, Effluent Pump Station Wet Wells, and 84" - Final Effluent Pipeline Sampling, and Analysis at the Ultraviolet Disinfection Project Site (EI, 2002f); Contaminated Soil Review Report, (EI, 2002g); Draft Soil Management Plan (EI, 2003a); Additional Sampling Investigation Report (EI, 2003b); and Letter Report, Environmental Site Investigation, Proposed New Pond and Injection Well Location, PCB Sampling (EI, 2003c).

The Sand Island WWTP is currently undergoing modification and improvements as required under its NPDES permit. PCB contamination in soils in the vicinity of the Sand Island WWTP was initially identified during an ESA conducted by HECO in November 2001 (Levine Fricke, 2001 a and b). The CCH decided that it would be prudent to conduct an environmental investigation of the Headworks Phase 2 project area because a former salvage yard, which is suspected to be a contributing source of environmental contamination, appeared to have extended into this area (EI, 2003a).

An investigation of the Headworks Phase 2 project area was conducted in June 2002 to determine whether soil or groundwater contamination is present, and whether any contamination, if found, would have a significant impact on future construction. The results of the investigation indicated that PCB is present in the soil above the groundwater table at several locations within the Headworks Phase 2 project area, and that PCB contaminated soil may be present on other parts of the WWTP as well (EI, 2003a).

Additional soil samples were collected and analyzed from the Headworks Phase 2 project area, Headworks Phase 1 project area, new UV Disinfection Unit project area, as well as stockpiled soils that had already been excavated from the Headworks Phase 1 and UV Disinfection Unit areas. The results of the sampling and analyses indicated that a large portion of the Sand Island WWTP contains PCB contaminated soils. In addition, the contaminant levels detected within a portion of the Headworks Phase 2 Project Area exceeded regulatory levels set forth in the Toxic Substances Control Act (TSCA), Title 40 Code of Federal Regulations (CFR) 761.61. In accordance with the TSCA regulations, remediation of the site is required. The CCH has elected to conduct a "self implementing cleanup of the site" in accordance with Title 40 CFR 761.61a. A TSCA Notification Report for the proposed remedial action was submitted to and approved by EPA Region 9 in October 2002 (EI, 2003a).

The Sand Island WWTP meets the definition of a low occupancy site under TSCA, and therefore, the soil cleanup level was set at 25 parts per million (ppm) per Title 40 CFR 761.61a. Soils with PCB concentrations greater than 25 ppm were removed from the site and disposed at a proper facility according to the procedures set forth in the Notification Report.

The analytical results of the additional soil sampling performed in December 2002 did not identify gross PCB contamination of total PCB concentrations greater than the TSCA cleanup level of 25 milligrams per kilogram (equivalent to parts per million). Based on these proposed improvements at the WWTP and the results of the sampling, EI made the following conclusions and recommendations (EI, 2003a).

- No additional hot spot areas have been identified from the December 2002 sampling event. The five PCB hot spot locations identified in the Notification Report represent the only TSCA remedial action concern areas.
- Based upon the current and previous sampling events, certain areas at the project sites have PCB soil concentrations less than the EPA Region 9 Residential PRG of 0.22 milligrams per kilogram. The re-use of soil excavated from these areas shall be considered as unrestricted and may be reused on- or off-site without restriction. These unrestricted re-use soil locations are shown in blue hatching on Figure 3-1. The soils within the boundaries of the unrestricted soil re-use areas contain PCB soil concentrations of less than the Hawaii State DOH Soil Action Level of 1.0 milligram per kilogram with over 95 percent of the soil in this area containing less than 0.22 milligrams per kilogram.
- Other areas generally have PCB soil concentrations greater than the EPA Region 9 Residential PRG of 0.22 milligrams per kilogram. The re-use of soil excavated from these areas shall be considered as restricted and must be managed and re-used in accordance with the Soil Management Plan. These restricted re-use soil locations are shown in green hatching on Figure 3-1.

Based on DOH and EPA's review of the Draft Soil Management Plan, re-use of all soil both "restricted" and "unrestricted" is currently being evaluated. Until a determination is made, EI recommended that all soil be temporarily stockpiled on-site.

2002-2003 - Sand Island Wastewater Treatment Plant, Limited Soil Characterization, PCB Assessment, Sand Island, Honolulu, Hawaii (Professional Services Inc., 2002); Sand Island Wastewater Treatment Plant, PCB Hot Spot Removal Excavation and Clearance Testing, Sand Island, Honolulu, Hawaii (Professional Services, Inc., 2003). These reports document the soil

characterization and subsequent soil removal excavation and clearance for PCB Hot Spots found in Headworks Phase 2 project area located east of the existing floater-clarifiers (future location of Flotators #7 and #8). The report notes that the area west of the investigation area was found to contain PCB in soil concentrations ranging from trace amounts to 70 mg/kg. A total of 236 soil samples were collected from a sampling grid constructed over the future location of Flotators #7 and #8. Samples were collected from six inches bgs, two feet bgs, and four feet bgs. All soil samples were tested for PCBs. The collection and analysis of the soil samples helped delineate the vertical and horizontal extent of contamination and determine the guidelines for the proper handling and disposal of excavated soil.

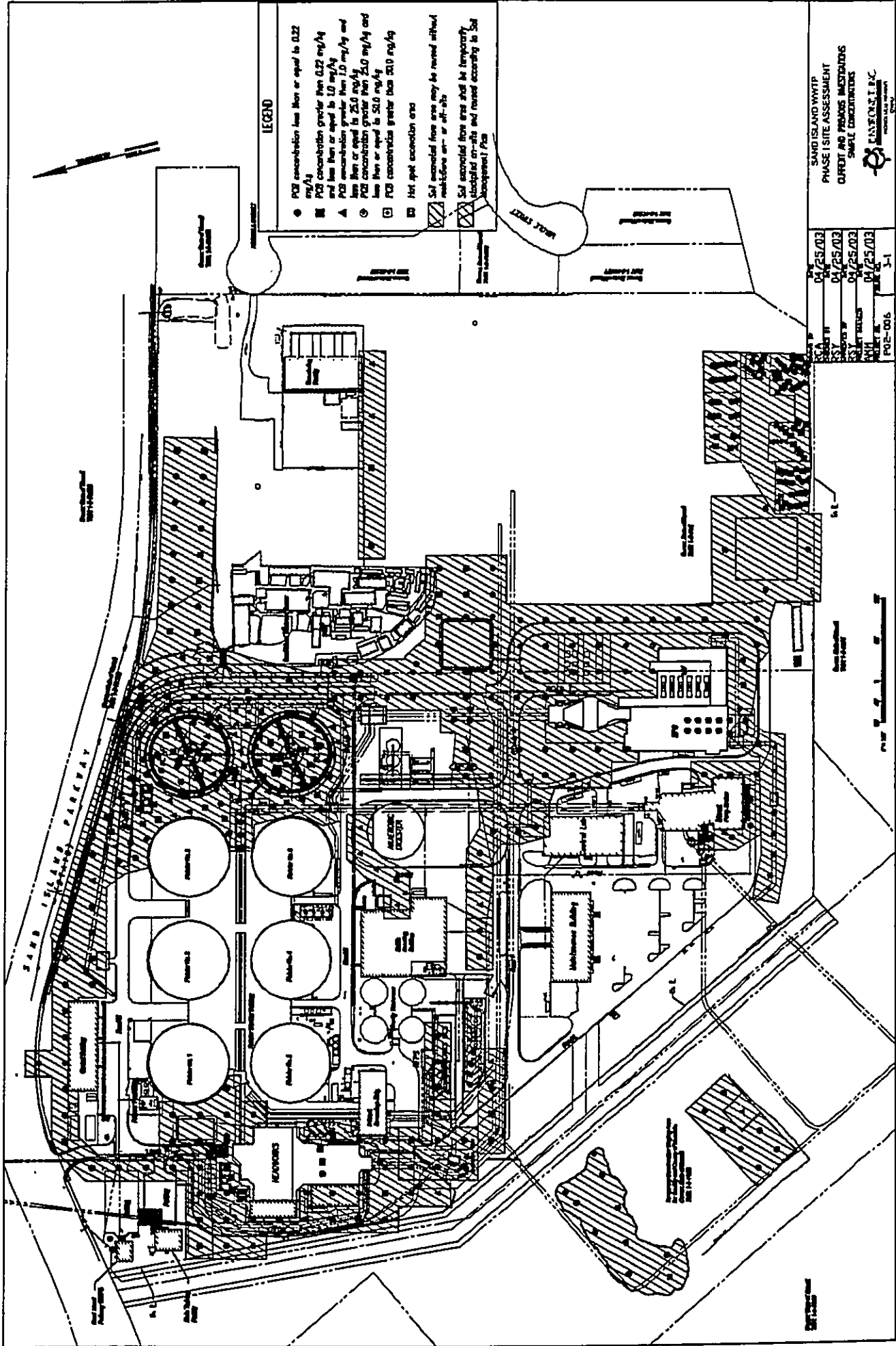
The PCB Hot Spot Removal Excavation and Clearance Testing Report documents removal and disposal activities and confirmation soil testing and analysis in preparation of the removal of soil from five PCB hot spots identified in the TSCA Notification Report. Approximately 150 cubic yards of soil was excavated from the future clarifier sites. The soil was boxed and disposed of as TSCA regulated waste at the U.S. Ecology Site located in Grand View, Idaho. A total of 31 confirmation soil samples were collected from the sidewalls and bottoms of each excavation and submitted to an analytical laboratory for final clearance testing in accordance with the TSCA Notification Report (EI, 2002e). All five hot spot excavations were cleared. Therefore, all remaining sidewalls contain 25 mg/kg (or less) total PCBs or groundwater was reached in excavation bottoms.

3.1 Title Records

EI was not provided with a preliminary title report for the site; however, EI reviewed documents available at the CCH Department of Planning and Permitting and the CCH Real Property Tax Assessment office. Records examined indicated that the subject site was part of TMK 1-5-41 Parcel 001 until 1976 when Parcel 005 was created. The subject site is owned by the State of Hawaii and has been leased to CCH since 1976 for use as a "Sewerage Plant." The subject site and surrounding land has been owned by the State of Hawaii since the mid 1960s (CCH, Real Property Tax Assessment Office, 2002). The previous land owner was the United States of America War Department and Treasury Department (CCH, Real Property Tax Assessment Office, 2002). In addition, archival maps of the area reveal that a portion of the project site and areas north and northeast of the site are part of Quarantine Island (also known as Anuenue Island and Rainbow Island) which served as the center of what is now known as Sand Island (U.S. Geological Survey, 1927-1930).

3.2 Environmental Liens, Use Limitations or Valuation Reductions

EI was not provided with any information pertaining to any environmental liens or valuation reductions associated with the site or past environmental issues regarding the site, or any use limitations affecting the site.



LEGEND

- PCB concentration less than or equal to 0.22 mg/kg
- PCB concentration greater than 0.22 mg/kg and less than or equal to 1.0 mg/kg
- ▲ PCB concentration greater than 1.0 mg/kg and less than or equal to 25.0 mg/kg
- ⊙ PCB concentration greater than 25.0 mg/kg and less than or equal to 50.0 mg/kg
- PCB concentration greater than 50.0 mg/kg
- ▨ Hot spot exceedance area
- ▩ Soil exceeded from area may be reamed without modification on- or off-site
- ▧ Soil exceeded from area shall be temporarily disrupted on-site and reamed according to Soil Management Plan

SAND ISLAND WWTIP
 PHASE I SITE ASSESSMENT
 CURRENT AND PREVIOUS MONITORING
 SAMPLE CONCENTRATIONS
 ERM CONSULTING, INC.
 10000 SAND ISLAND ROAD
 SAND ISLAND, AK 99588

DATE	04/25/03
BY	DA/25/03
REVISION	04/25/03
DATE	04/25/03
BY	DA/25/03
PROJECT	3-1
NO.	PO2-006

SAND ISLAND PARKWAY

LAND TANK

SCALE

DATE

Section 4

Records Review

4.1 Regulatory Records

4.1.1 Regulatory Database Search Report

A regulatory database report was obtained from EDR for the property in accordance with the ASTM recommended guidelines and is included in this ESA as Appendix B. The EDR report presents the results of a search of federal and State of Hawaii databases, along with a description of each database, that list addresses of sites of known USTs; landfills; hazardous waste generation or treatment, storage and disposal facilities; and subsurface contamination in the surrounding area up to within 1 mile of the center of the site, and a figure showing the locations of sites listed on the databases. The EDR report searches for incidents or sites within the listed minimum search distances of the subject parcels, based on guidance from ASTM for use in Preliminary Environmental Site Assessments (ASTM, 1997). Table 4-1 summarizes databases searched and search distances.

The objective of reviewing the database report is to identify if the property of interest is included on one or more of the databases and if properties that have known and documented environmental problems that may impact the subject site are located within the applicable search radii. EI's criteria for considering a listed facility to be a potential concern include the following:

1. The facility is listed on one or more of the databases of reported hazardous materials releases is located potentially up gradient of the subject site, and is not listed in the database as "closed" or "no further action" (including No Further Remedial Action Planned [NFRAP]).
2. The facility is listed as a solid waste landfill and is located potentially up gradient of the subject site (not including transfer stations).
3. The facility adjoins the subject site and is listed as a Resource Conservation and Recovery Act (RCRA) large-quantity hazardous waste generator, a CERCLIS NFRAP site, or an UST operator.

The following is a summary of the identified facilities that, using the criteria discussed above appeared to be of potential concern:

- EDR Site A- project site: Sand Island WWTP, Sand Island Parkway, Honolulu, Hawaii –
 - Spills – sewage sludge spill, no further action priority assigned;
 - LUST – confirmed release with no further action required (EDR, 2003; DOH, 2003);
 - Chlorine gas release, no further action priority assigned;
 - Diesel fuel release from over fill of day tank – release cleaned up and a no further action priority assigned (EDR, 2003).
- EDR Unmapped- project site: Towco, Sand Island Parkway, Honolulu, Hawaii –
 - SHWS
 - CERCLA NFRAP – see Section 4.1.2.

Constructors. During 1942, Sand Island was armed again air and amphibious attack with armaments consisting of 5-inch ant-air craft guns and a battery of 7-inch guns.

In 1943, the Army Port and Service Command (APSC) headquarters was established on Sand Island and remained there until the end of the war. Their main function was that of an administrative and logistical center. APSC initially occupied the former quarantine camp/internment camp. However, at that time the buildings were in disrepair, sanitation had been neglected, weeds were rank, and open water-filled ditches served as a breeding ground for mosquitoes. The unused barracks were filled with tires and served as supplementary warehouses. In 1943, all logistical installations were concentrated around Quarantine Island. An area north of the large end of the island had been allocated to the Civil Works division of the U.S. Army Corps of Engineers for dredge repair. Two warehouse buildings were erected in this area. Adjacent to and south east of the dredge facilities was an ordnance vehicle assembly area. On the edge of Honolulu Harbor in the northern corner of the island were three barracks for anti-aircraft personnel. At the western end of Quarantine Island was a tent camp that had been erected to house five Transportation Corps Port Companies. On the south side, just outside of the area of Quarantine Island in the vicinity of the site was a 1,925 man tent staging camp.

During 1943, the entrance to Honolulu Harbor had been dredged. Spoils from the dredging were used as fill on Sand Island and a dirt causeway was built connecting Sand Island with the mainland. In 1944, the Keehi Seaplane Channel dredging was finished. With the completion of the marginal wharves and the seaplane dredging, Sand Island assumed the configuration seen today with one exception – a land bridge existed between the island and Oahu, just west of the Kapalama Basin.

4.2.1 Topographic Maps

EI reviewed seven historic topographic maps of the site and vicinity available at the University of Hawaii (UH) Hamilton Library Map Collection on December 5, 2002. The maps are dated 1913, 1927, 1943, 1959, 1969, 1983, and 1998.

- 1913 Island of Oahu, Territory of Hawaii, Military Survey. This map shows Quarantine Island. Buildings and roads are shown on the northwest side of the site and north and northeast of the site. The areas west, south, and southeast of the site are underwater.
- 1927 Honolulu Quadrangle, US Geological Survey (1:20,000). This map shows Quarantine Island. Buildings and roads are shown on the northwest side of the site and north and northeast of the site. The areas west, south, and southeast of the site are underwater.
- 1943 Honolulu Quadrangle, Corps of Engineers, U.S. Army, War Department (1:20,000). The northeast portion of the site is shown as the southwest portion of Quarantine Island. There are buildings and roads on the northwest portion of the site and to the north and northeast. The Pacific Ocean is to the west, southeast, and south of the site. There is a circular road or structure to the northeast of the site that is present today as part of Sand Island Parkway.
- 1959 Honolulu, 7.5 Minute Quadrangle, U.S. Geological Survey (1:24,000). Sand Island is shown on this topographic map. A drainage structure is shown on the site and north and northeast of the site. The drainage structure represents the outline of Quarantine Island. Buildings and roads are shown on the site and north and northeast of the site. Sand Island is labeled as "Sand Island Military Reservation." A U.S. Coast Guard facility is located on the northeast side of the island. A US Naval reservation is located on the southeast portion of Sand Island.

- 1969 Honolulu, 7.5 Minute Quadrangle, U.S. Geological Survey (1:24,000). Some structures and roadways are shown through the site and immediately north and east of the site. A tank is located to the north of the site. A U.S. Coast Guard Reservation is shown on the northeast side of Sand Island. A Naval reservation is shown on the southeast end of Sand Island. The southwest portion of Sand Island is undeveloped.
- 1983 Honolulu, 7.5 Minute Quadrangle, U.S. Geological Survey (1:24,000). A drainage canal is shown through and north of site. The WWTP is shown on the site in the form of six tank (clarifier) structures, eight square structures, and three rectangular structures. North of the site is the Sand Island Parkway. An access road is located northwest of the site along with four small rectangular structures. Open land is located south and west of the site. Sand Island State Park is located on the southeast portion of Sand Island. The U.S. Coast Guard Reservation is located on the northeast portion of the island. Roads in the eastern portion of the island have a different configuration than the present configuration. Warehouses are shown in the eastern portion of the site.
- 1998 Honolulu, 7.5 Minute Quadrangle, U.S. Geological Survey (1:24,000). A drainage channel is shown through the site and north of the site. The site is labeled as "sewage disposal ponds". Six large (clarifier) tanks and four small tanks are shown on the site as well as five rectangular structures and six small square structures are shown on the site. An athletic field is shown south of the site along with a circular structure. The U.S. Coast Guard reservation is located on the northeast portion of the island. Roads are shown to the east of the site. Sand Island Parkway is shown to the north. An access road is shown northwest of the site. Two tanks are shown on the land north of the WWTP. Two rectangular structures are shown on the northeast of the site.

4.2.2 Aerial Photographs

EI reviewed 27 aerial photographs of the site and vicinity available at RMTC and the UH Hamilton Library Map Collection. The photographs were taken in 1952, 1954, 1959, 1960, 1961, 1963, 1966, 1968, 1969, 1972, 1973, 1974, 1976, 1978, 1981, 1990, 1991, 1992, 1993, 1994, 1997, and 1998. Select photographs are presented in at the end of this section.

- 1952 April 3 1952 (UH Hamilton Library Map Collection) "2-71 GS-MYFY". This photograph shows the outline of Quarantine Island with Sand Island built around it. There are organized structures on the east side of Quarantine Island (off site) and buildings, structures, and roadways on the west side of Quarantine Island including the northeast portion of the site. Nothing is visible on the south side of the site or immediately east of the site.

September 20, 1952 (RMTC) "894-9" (Photograph 1). This photograph clearly shows the outline of Quarantine Island. Much of the site has been cleared of vegetation. There are warehouses and buildings on the northeastern portion of the site that includes the former Quarantine Island. There are some buildings on the northeast portion of the site, on the south side of the former Quarantine Island. There appears to be some organized storage on this portion of the site and further east off site. The area east of the site contains a cleared area with some storage or structures. Further east are buildings, warehouses, and vegetation. The area south and west of the site is partially cleared with long linear structures (possible firing range) located south of the site. The area north of the site on the former Quarantine

- Island has numerous buildings and roadways with a shipping pier beyond that. A possible dump or junk yard is visible northwest of the site and west of the former Quarantine Island.
- 1954 December 18, 1954 (RMTC) "1266-9". This photograph is similar to the September 1952 photograph. It shows the outline of Quarantine Island and possible dumping northwest of the site.
- 1959 January 19, 1959 (UH Hamilton Library Map Collection) "2-9 GS-VXY". This photograph shows similar details as the April 1952 photograph.
- 1960 November 23, 1960 (RMTC) "2183-6". This photograph shows the outline of Quarantine Island with the area south of it clear of structures.
- 1961 January 20, 1961 (RMTC) "2225-7V" (Photograph 2). This photograph clearly shows the outline of Quarantine Island. Much of the site has been cleared of vegetation. There are warehouses and buildings on the northeastern portion of the site that includes the former Quarantine Island. There are long linear features located on the northwestern portion of the site. There are some buildings on the northeast portion of the site, south of the former Quarantine Island. There appears to be some organized storage on the east portion of the site or possibly off site. The area east of the site contains a cleared area with some storage or structures. Further east are buildings, warehouses, and vegetation. The area south and west of the site is partially cleared with areas of heavy vegetated and contains numerous roadways. A dump site is apparent west or southwest of the site. The area north of the site on the former Quarantine Island has numerous buildings and roadways with a shipping pier beyond that.
- 1963 January 12, 1963 (UH Hamilton Library Map Collection) "EKM-2CC 206". This photograph shows the outline of Quarantine Island with Sand Island built around it. Structures are visible on Quarantine Island. A possible dump is apparent on the southwest portion of old Quarantine Island (northwest side of the site) and on the eastern portion of the site.
- 1966 January 6, 1966 (RMTC) "3532" (Photograph 3). This photograph clearly shows the outline of Quarantine Island. A potential junkyard or dump appears to be located on the north-central portion of the site. Buildings and heavy vegetation are shown on the north and east sides of the site. The south side of the site is vegetated and contains numerous roadways. The area east of the site contains a cleared area with some storage or structures. Further east are buildings, warehouses, and vegetation. The area south and west of the site is vegetated and contains numerous roadways. A dump site is apparent on the west side of the site. The area north of the site is heavily vegetated and contains numerous roadways and buildings and a possible dump site.
- 1968 February 6, 1968 (UH Hamilton Library Map Collection) "3-7 GSVXJS". This photograph shows similar details as the 1963 and 1966 photographs.
- 1969 CCH Planning Department prepared by RMTC Sheet 544-48, scale 1: 200 (UH Hamilton Library Map Collection). This photograph shows the outline of Quarantine Island. Buildings are shown on the site and to the north and east of the site. The northwest and southern portions of the site appear to be used for storage or as a dump site. The U.S. Coast Guard Reservation is shown to the north and undeveloped areas are shown to the south and

southwest. Numerous buildings and warehouses are shown to the southeast of the site (probable location of the U.S. Naval reservation).

October 3, 1969 (RMTC) "5064-14". This photograph is similar to the previous photographs from 1966 and 1969.

- 1972 March 9, 1972 (RMTC) "5670-10" (Photograph 4). This photograph clearly shows the outline of Quarantine Island. A potential junkyard or dump is located on the north-central portion of the site. Buildings and heavy vegetation are shown on the east side of the site. The south side of the site is vegetated and contains numerous roadways. The area east of the site contains buildings, warehouses, and vegetation. The area south and west of the site is vegetated and contains numerous roadways. A potential dump site is apparent on the west side of the site. The area north of the site is heavily vegetated and contains numerous roadways and buildings.
- 1973 December 14, 1973, 6 inches = 11,000 feet (RMTC) "6103-10". This photograph is similar to the 1972 photograph; however, there is more dumping or storage evident west of the site.
- 1974 December 3, 1974 (RMTC) "6510-5". This photograph is similar to 1973.
- 1976 December 19, 1976 (RMTC) "7036-6" (Photograph 5). This photograph shows the WWTP structures which may be partially complete on the west side of the site, a possible construction staging area or storage area east of the WWTP, the HASITC east of the plant, and heavily vegetated areas and some structures on the east and northeast side of the site. The outline of Anuenue Island is visible through the northern portion of the site and north of the site. Buildings, vegetation and roadways are visible north and east of the site. Roadways and vegetation are visible south and west of the site. Possible junkyards/dump sites are visible immediately east and west of the site.
- 1978 U.S. Department of Interior, U.S. Geological Survey, Honolulu Quadrangle, 7.5 Minute Series, Orthophotoquad (1:24,000). This photograph shows the partial outline of Quarantine Island with the WWTP built on the southwest corner of Quarantine Island. Buildings and other structures or items are shown throughout Quarantine Island and the area east of the site. The road alignment has changed from that shown on earlier photographs. There are no structures visible immediately south of the site but there are some structures shown further south along the shoreline.
- October 24, 1978, 6 inches = 11,000 feet (RMTC) "7455-1". This photograph shows the WWTP and the outline of Quarantine Island. Dumping or disorganized storage is apparent north and west of the site.
- 1981 October 29, 1981, 1 inch = 1,000 feet (RMTC) "8108-2" (Photograph 6). This photograph shows the WWTP on the west side of the site, the HASITC on the east, and the partial outline of Quarantine Island through the north side of the site. The southeastern portion of the site is largely cleared with one area of dense vegetation on the northeastern corner that may be a dump site or junkyard. There are a few structures on the east side of the site. East of the site are warehouses, vehicles, and roadways. Southeast of the site is vegetated land, roadways, and L-shaped structures or landscape features. Southwest of the site is vegetated land and cleared areas with roadways. West of the site is a possible junkyard. Warehouses are located to the north (Matson Terminal).

- 1990 November 10, 1990 (RMTC) "8715-5" (Photograph 7). This photograph shows the WWTP on the west side of the site, the HASITC on the east, a vehicle storage area (probably Towco) on the northeast, and a densely packed, organized storage area (possible vehicle storage) on the east and southeast portions of the site. In addition, some structures are shown immediately east of the WWTP. The area east of the site includes warehouse buildings, vehicles, and roadways. The area southeast of the site is open land and a few roadways in the area now known as Sand Island State Park. The area southwest of the site is vegetated with some roadways. The area west of the site appears to be vehicle storage (possible Towco) with a possible junkyard further west. North of the site is a roadway and beyond that are warehouse buildings, water storage tanks, vehicle parking, and shipping piers.
- 1991 May 15, 1991, in color (RMTC) "8750-11". This photograph is similar to the 1990 photograph.
- 1992 January 17, 1992, in color (RMTC) "8799-8". This photograph is similar to the 1990 and 1991 photographs.
- September 24, 1992 (UH Hamilton Library Map Collection) "92-162 D-E, NASA." This photograph shows the outline of the site including buildings and structures. There are warehouses to the northeast, tanks to the northwest, Sand Island Parkway to the north, and warehouses to the east. Open areas are located west and south of the site.
- 1993 October 1, 1993 (UH Hamilton Library Map Collection) "NOS CAN-25 No. 4288" in color. This photograph shows similar details as the 1992 photograph.
- October 8, 1993, in color, 1 inch = 1,000 feet (RMTC) "8909-13" (Photograph 8). This photograph shows the WWTP on the west side of the site, the HASITC on the northeast side of the site, a vehicle storage area (probably Towco) on the northeast side of the site, and an open area with a few structures and patches of vegetation are visible on the southeast side of the site. East of the site are numerous buildings, vehicles, and roadways. Southeast of the site is Sand Island Beach Park. Southwest is vegetated land with numerous roadways and some cleared areas. West of the site is a vehicle storage area (possibly Towco) and a possible junkyard further west. North of the site is a roadway and beyond that are warehouse buildings, water storage tanks, vehicle parking, and shipping piers.
- 1994 February 28, 1994 (RMTC) "8925-11". This photograph show the WWTP and items on the land located east of the site.
- 1997 February 1, 1997 (RMTC) "9037-4" (Photograph 9). This photograph shows the WWTP on the west side of the site, the HASITC to the east, a vehicle yard on the northeast (probably Towco), possible soil stockpiles, structures, vegetated areas, and cleared areas on the southeast portion of the site. The CCH dewatering facility is not apparent on the east side of the site. The area east of the site includes the present alignment of roadways and the Sand Island Industrial Park. Sand Island Beach Park is located southeast of the site. The area west and southwest of the site appears to be largely covered with vegetation with a few cleared areas immediately northwest, west, and south of the site. Numerous unpaved roadways are apparent to the west and southwest of the site. North of the site is a roadway and beyond that are warehouse buildings, water storage tanks, vehicle parking, and shipping piers.

1998 January 23, 1998 (RMT) "9061-14." This photograph was taken at a high altitude and does not afford good detail of the site or surroundings.

4.2.3 Fire Insurance Maps

EI contracted with EDR to research the availability of fire insurance maps of the site and vicinity. No maps were available in the Sanborn archives (see Appendix B). Typically, fire insurance maps were produced only for urban areas and industrial facilities.

Table 4-1: Search Distances for Standard Environmental Record Sources

Standard Environmental Record Sources	Minimum Search Distance (miles)
<i>Federal ASTM Standard</i>	
Federal NPL Site List	1.0
Proposed NPL sites	1.0
CERCLIS	0.5
CERCLIS – NFRAP	0.25
CORRACTS	1.0
RCRIS-TSD	0.5
RCRIS-LQG	0.25
RCRIS-SQG	0.25
ERNS	Target property
<i>State ASTM Standard</i>	
SHWS	1.0
Permitted Landfills in the State of Hawaii	0.5
LUST Database	0.5
UST Database	0.25
<i>Federal and State ASTM Supplemental</i>	
CONSENT	1.0
ROD	1.0
Delisted NPL	1.0
FINDS Program Summary Report	Target property
HMIRS	Target property
MLTS	Target property
MINES Master Index File	0.25
NPL Liens	Target property
PADS	Target property
RAATS	Target property
TRIS	Target property
TSCA	Target property
SSTS	Target property
FTTS	Target property
SPILLS	Target property
Former Manufactured Gas (Coal Gas) Sites	1.0
Standard Environmental Record Sources	Minimum Search Distance (miles)
*Hawaii Sites of Interest	1.0
*Hawaii Release	1.0

Notes:

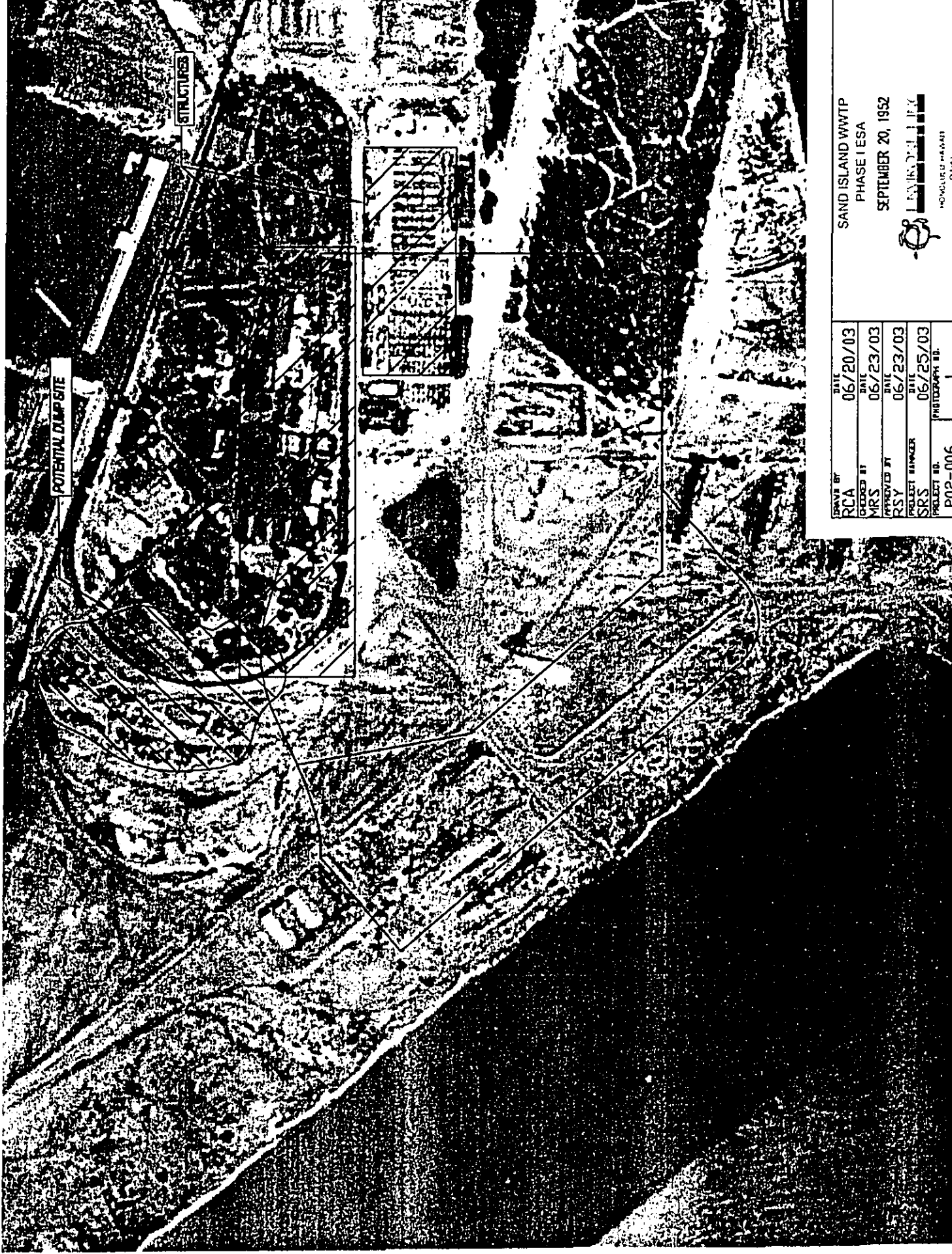
CERCLIS
CORRACTS
ERNS
FIFRA
FINDS
FITS
HMIRS
LUST
LQG
MINES
MLTS
NFRAP
NPL
PADS
RAATS
RCRIS
ROD
SHWS
SPILLS
SQG
SSTS
TRIS
TSCA
TSD
UST

Comprehensive Environmental Response, Compensation, and Liability Information System
Corrective Action Report
Emergency Response Notification System
Federal Insecticide, Fungicide, and Rodenticide Act
Facility Index System/Facility Identification Initiative
FIFRA/TSCA Tracking Systems
Hazardous Material Information Reporting System
Leaking Underground Storage Tank
Large Quantity Generator
Mines Master Index File
Material Licensing Tracking System
No Further Remedial Action Planned
Federal National Priorities List
PCB Activity Database System
RCRA Administrative Action Tracking System
Resource Conservation and Recovery Information System
Records of Decision
State Hazardous Waste Sites
Release Notifications
Small Quantity Generator
Section 7 Tracking Systems
Toxic Chemical Release Inventory System
Toxic Substances Control Act
Treatment Storage and Disposal
Underground Storage Tank

*Since there is no State database of NPL or CERCLA equivalents, this database was not included in EDRs report. Environet reviewed the State of Hawaii Department of Health Office of Hazard Evaluation and Emergency Response Release Notifications and Sites of Interest databases.

Table 4-2: Summary of Significant Building Permits for the Project

Date	Structure	Area	Cost
1975	STP Maintenance Building	12,100 sq. ft.	\$1,040,000.00
1975	STP Effluent Pump/Chlorinator Building	5,600 sq. ft.	\$3,410,000.00
1975	STP Flotator Clarifier Building	150,000 sq. ft.	\$7,670,000.00
1975	STP Control Building	17,572 sq. ft.	\$1,040,000.00
1975	STP Electrical Switch gear Building	800 sq. ft.	\$300,000.00
1975	STP chain link fence/gate	NA	\$50,000.00
1975	STP Solids Handling Building	24,800 sq. ft.	\$14,680,000.00
1975	Ph. 1 Screening STP	11,300 sq. ft.	\$5,000,000.00
1974	Temporary Power/CCH	Lot area 12-311	
1973	A&B Auto Salvage Inc.	"Lot 5" (location on site was not described)	
1982	CCH Police Department Microwave System	NA	NA
1981	DLNR Pump Station	NA	NA
1985	Central Lab Maintenance	29,760 sq. ft.	\$3,399,980.00
1987	Operator Training	2,034 sq. ft.	\$411,665.00
4-16-91	SI WWTP-Replace PCB Transformers- load center no. 1, 2A, 2B, 4A, and 4B	NA	NA
1991	Hawaii Alcoholism Foundation	NA	\$163,156.00
1991	SI WWTP Install pump	NA	\$65,000
1993	Tow Master Hawaii	NA	\$800.00
1993	SI WWTP	805 sq. ft.	\$627,000.00
1996	SI WWTP/Platform	862 sq. ft.	\$157,000.00
1997	SI WWTP Dewatering Facility	5,368 sq. ft.	\$989,000.00
1998	Alcoholism Foundation	NA	\$14,250.00
2000	SI WWTP Storage Building	1,132 sq. ft.	\$119,380.00
2000	SI WWTP Removal of Existing Equipment	NA	\$2,439,000.00
2002	SI WWTP- Modifications to Unit 1- New inorganic chemistry building, secondary containment, install FRP tanks, pumps, covered roof	10,978 sq. ft.	\$10,000,000.00
2002	SI WWTP Unit 1 Modifications – new building	3,026 sq. ft.	NA
2001	SI WWTP Alterations to screening building	NA	\$50,000.00
2001	Temporary Power for SI WWTP Disinfection Facility and Effluent Pump Station	NA	\$15,000.00
2001	SI WWTP Disinfection Facility	48,720 sq. ft.	\$76,681,165.00

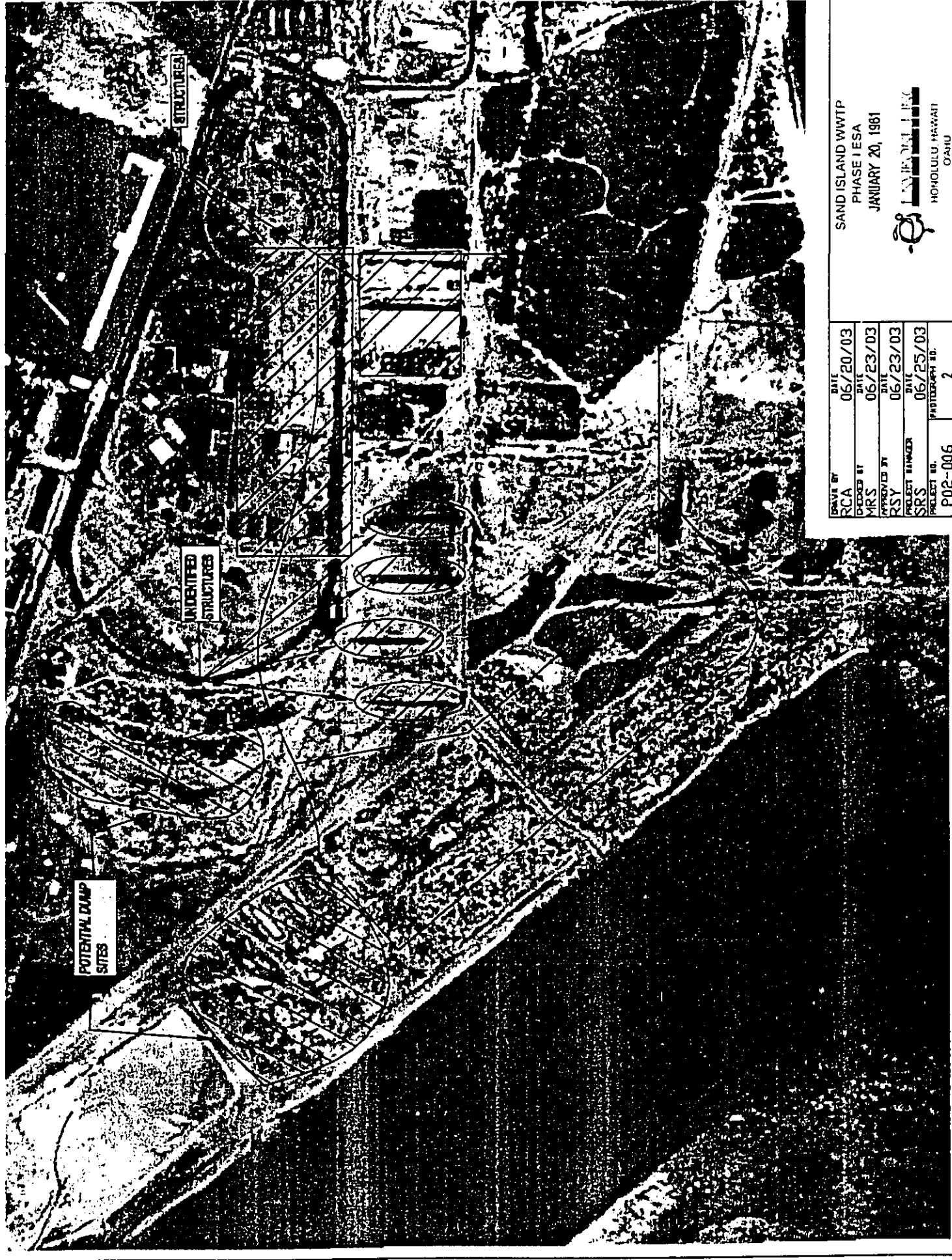


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APPROVED BY: RSY
PROJECT MANAGER: SRS
PROJECT ID: P02-006

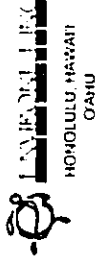
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DATE: 06/23/03
DATE: 06/23/03
DATE: 06/25/03
PHOTOGRAPH ID: 1

SAND ISLAND WWTP
PHASE I ESA
SEPTEMBER 20, 1952

NO SCALE
HONOLULU HAWAII
DAAU



SAND ISLAND WWTP
PHASE I ESA
JANUARY 20, 1981



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RCA	06/20/03
CHECKED BY	DATE
MRS	06/23/03
APPROVED BY	DATE
RSY	06/23/03
PROJECT ENGINEER	DATE
SRS	06/25/03
PROJECT NO.	PHOTODUPLICATION NO.
P02-006	2



SAND ISLAND WWTP
PHASE I ESA
JANUARY 06, 1986

DATE 06/20/03
CHECKED BY MRS
APPROVED BY RSY
PROJECT MANAGER SRS
PROJECT NO. P02-006

DATE 06/23/03
DATE 06/23/03
DATE 06/25/03
PHOTOGRAPH NO. 3

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION



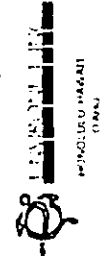
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RSY		06/23/03
PROJECT MANAGER		DATE
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P02-006		1

SAND ISLAND WWTP
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MARCH 09, 1972

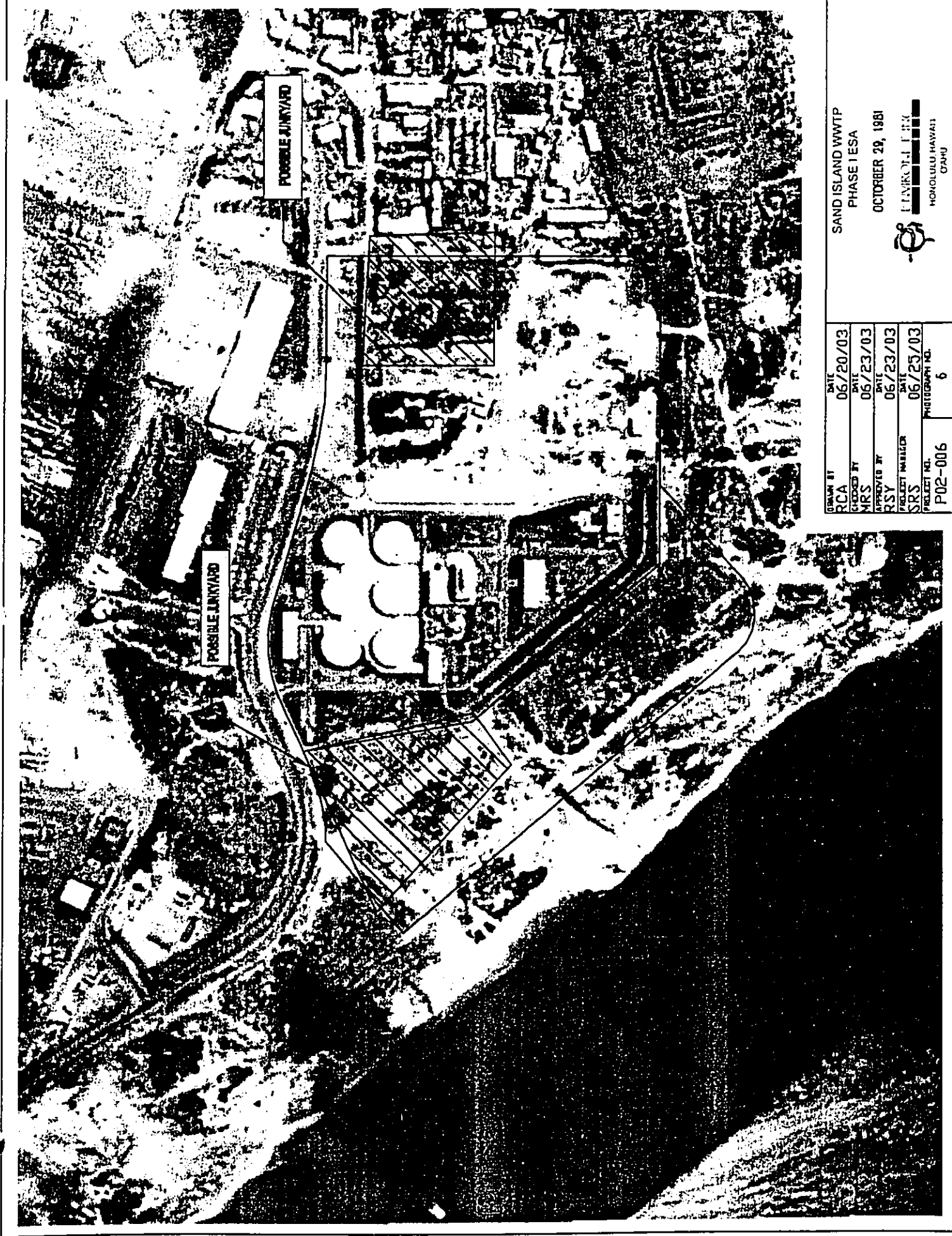
HONOLULU HAWAII
02462



SAND ISLAND WWTP
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DECEMBER 19, 1976



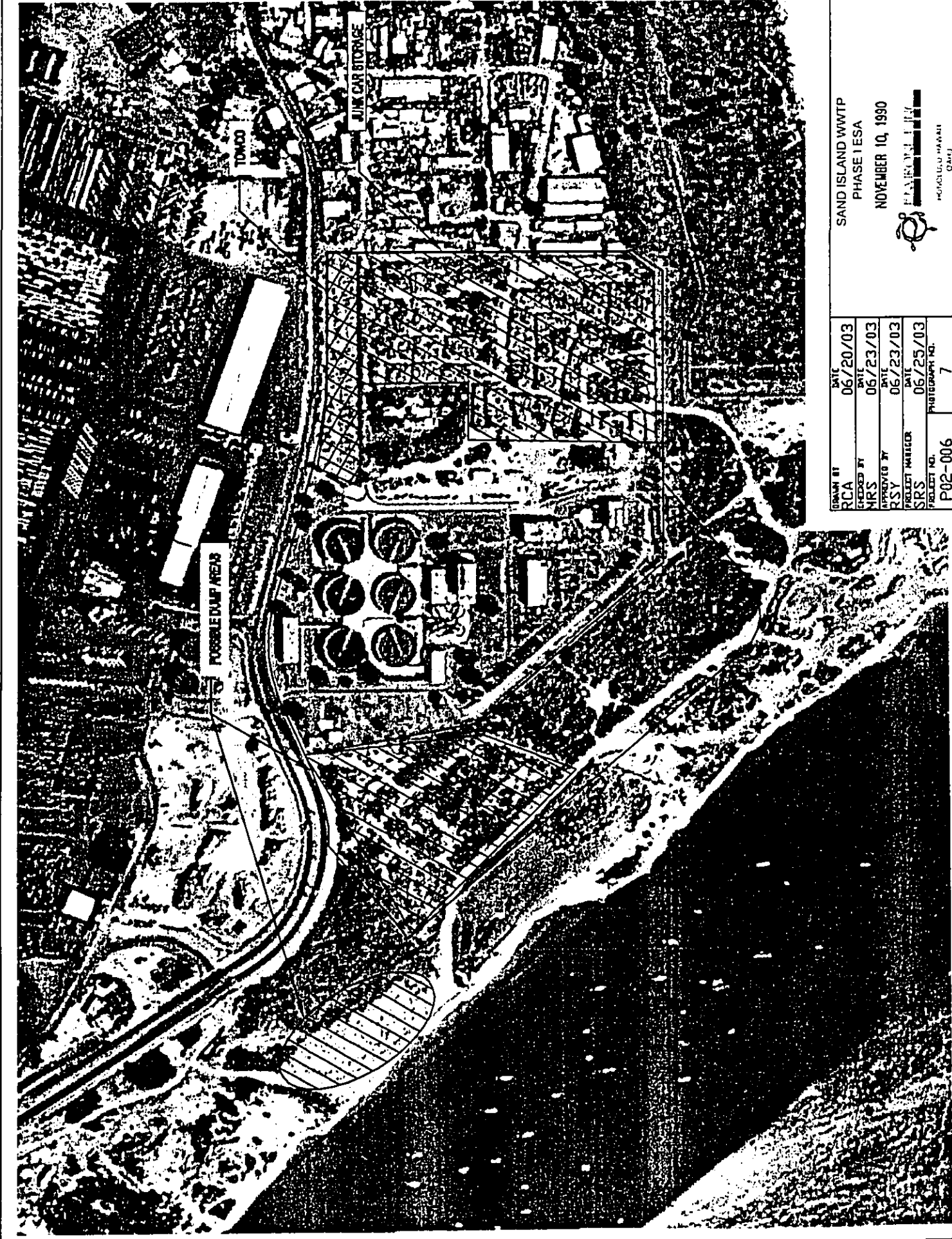
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APPROVED BY	DATE
RSY	06/23/03
PROJECT MANAGER	DATE
SKS	06/25/03
PROJECT ID.	PHOTOGRAPH NO.
P02-006	5



SAND ISLAND WWTP
PHASE I ESA
OCTOBER 29, 1981


ENGINEER
HONOLULU, HAWAII
OAHU

DESIGNED BY	RCA	DATE	06/20/03
CHECKED BY	MRS	DATE	06/23/03
APPROVED BY	RSY	DATE	06/23/03
PROJECT MANAGER	SRS	DATE	06/25/03
PROJECT NO.	P02-006	PHOTOGRAPH NO.	6

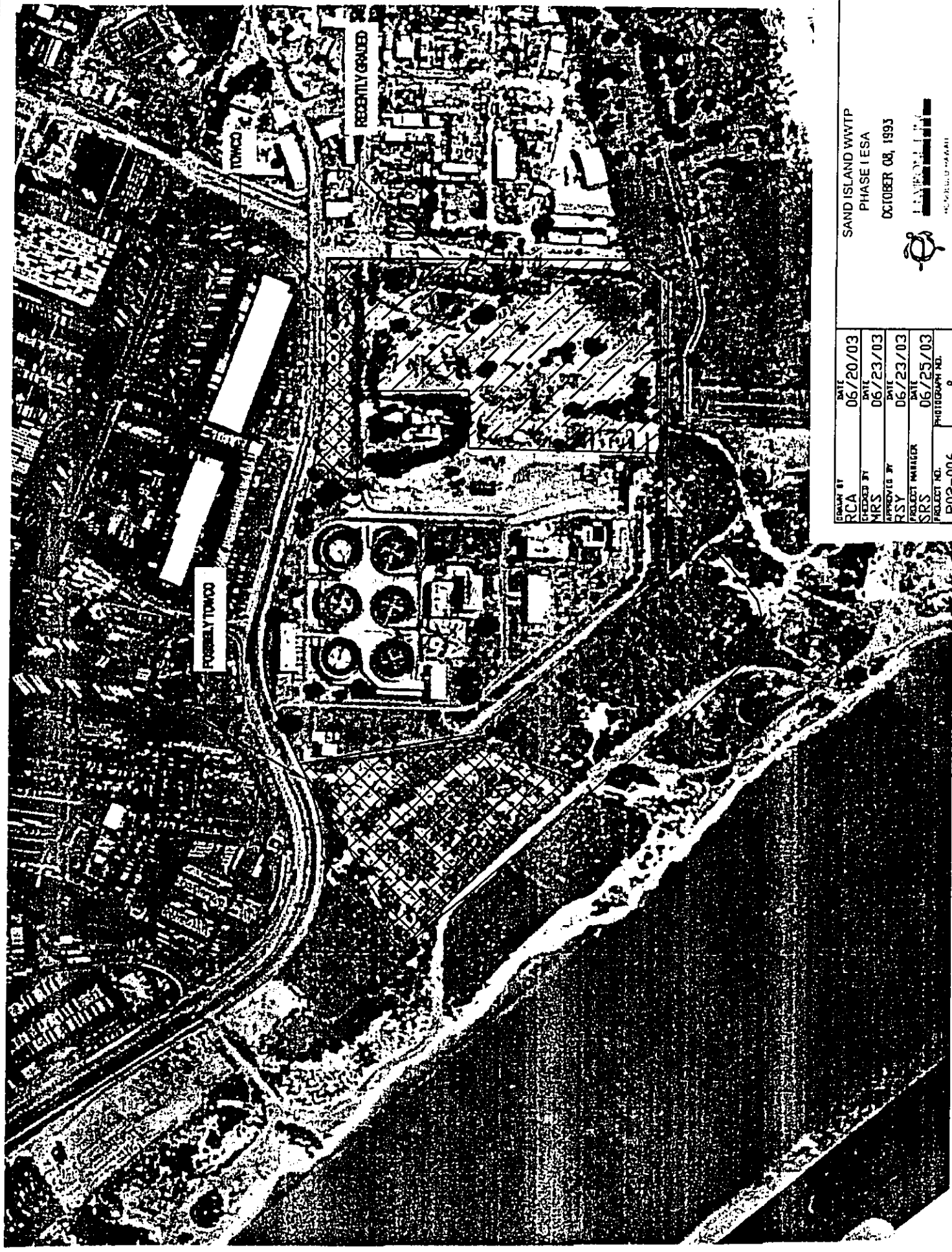


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MRS	06/23/03
APPROVED BY	DATE
RSY	06/23/03
PROJECT NUMBER	DATE
SRS	06/25/03
PROJECT NO.	PHOTOGRAPH NO.
P02-006	7

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 NOVEMBER 10, 1990

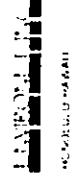



 HAWAIIAN PHOTOGRAPHY
 MICHAEL MAHAI
 OHAU

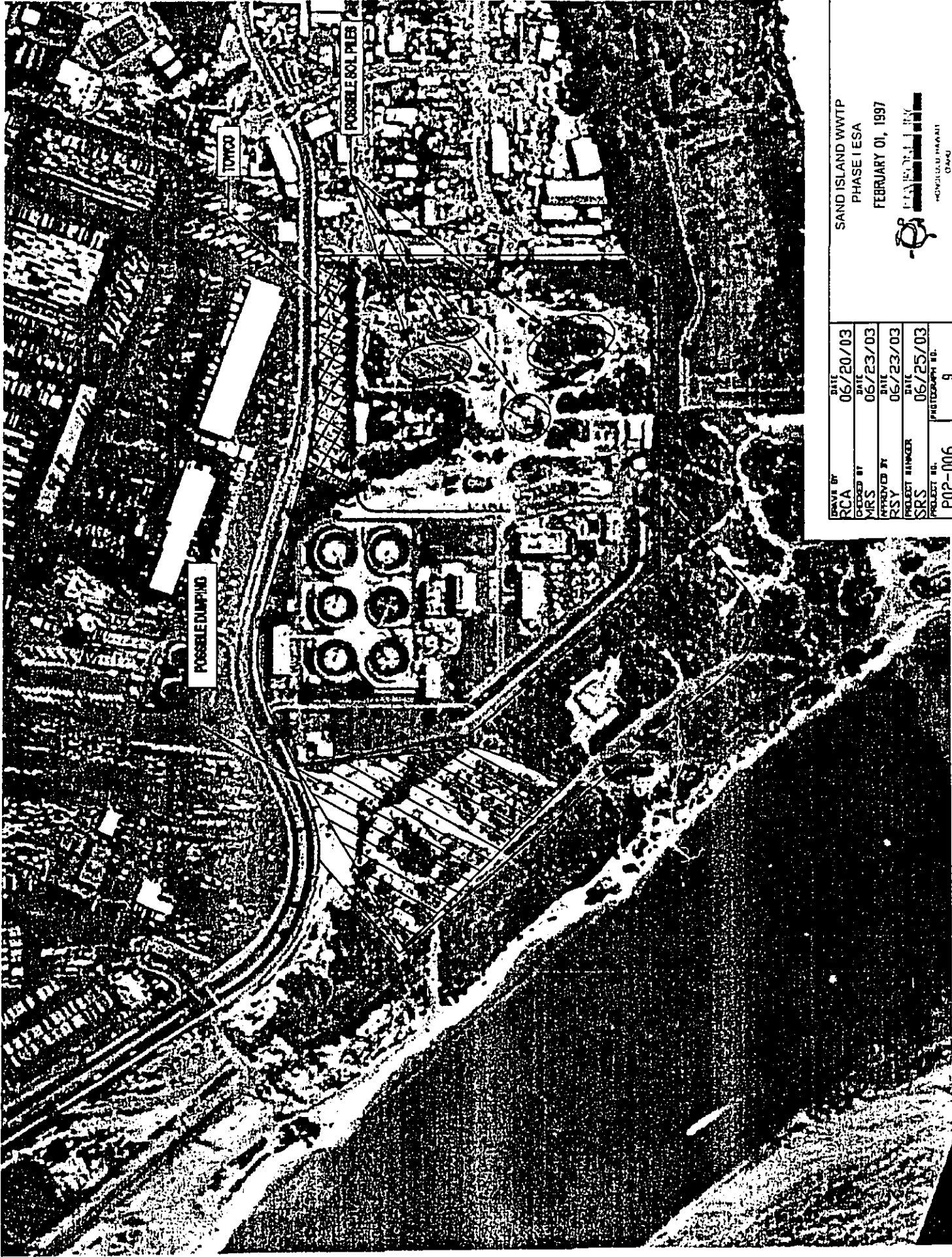


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APPROVED BY	DATE
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PROJECT MANAGER	DATE
SRS	06/25/03
PROJECT NO.	PHOTOGRAPH NO.
P02-006	8

SAND ISLAND WWTP
PHASE I ESA
OCTOBER 08, 1993



40'-0" (1:25,000) (AS SHOWN)



DATE 06/20/03
DRAWN BY RCA
CHECKED BY MRS
APPROVED BY RSY
PROJECT NUMBER SRS
PROJECT ID. P02-006
PHOTOGRAPH ID. 9

SAND ISLAND WWTP
PHASE I ESA
FEBRUARY 01, 1997
P. J. HARRIS
HONOLULU, HAWAII
01400

Section 5 Site Reconnaissance

5.1 Methodology and Limiting Conditions

EI conducted the site reconnaissance on Wednesday, 12 February 2003, Friday, 14 February 2003, Friday 21 February 2003, Monday 24 February 2003, and Friday 25 April 2003. The EI inspector was escorted during the site reconnaissance on 12 February 2003 by Mr. Wayne Salas, Shift Supervisor, Wastewater Treatment & Disposal, Department of Environmental Services, City & County of Honolulu. Copies of selected photographs taken during the reconnaissance are included in Appendix C.

EI personnel conducted the reconnaissance by visually observing the site and structures. The periphery of the site and site structures were observed by walking and were viewed from adjacent public thoroughfares.

Interior areas entered included accessible common areas, maintenance and repair areas, and a representative sample of occupant spaces. The project site consists of 12 Buildings and two major construction areas located east and west of the WWTP. EI personnel entered portions of Buildings 1, 4, 5, 6, 8, 9, 10, and 11. EI personnel did not enter Buildings 2, 3, 3A, or 12. Building 7 no longer exists.

The reconnaissance was limited by the presence of heavy construction activities on the eastern side of the project site and, therefore, access to the easternmost extent of the construction area was not permitted at that time. EI personnel returned to the eastern construction and staging area on Monday, 24 February 2003 and the northeastern portion of the site on 25 April 2003.

5.2 General Site Setting

Sand Island WWTP was constructed in 1974 and was designed to treat an average daily flow of 82 mgd of both industrial and domestic wastewater. Presently, average daily flow through the plant is about 71 mgd. The majority of the wastewater entering the plant are from the Ala Moana and Hart Street WWPSs. The Ala Moana WWPS receive an average daily flow of 49.7 mgd from the tributary service areas encompassing Aina Haina (eastern end of Honolulu) to Kalihi (on the west). The Hart Street WWPS receives an average daily flow of 21.4 mgd from the Fort Shafter and the Parkway WWPSs. Advanced primary treated wastewater is discharged to Mamala Bay, located south of the site, through an 84" diffuser pipe, 10,400 feet off shore along the 240 foot depth contour.

East and west of the WWTP are on-going construction activities and construction staging areas. Further west of the site is parking lot used by Matson to store vehicles. East of the site is an industrial park. North of the site is Sand Island Parkway and beyond that Sea Land and Matson terminals. South of the site is Sand Island Beach Park. Surrounded by the site and east of the WWTP are the HASITC and a CCH Highways Division dewatering facility.

5.3 Observations

5.3.1 General Exterior Observations

The project site is relatively flat. Sand Island Parkway is located north of the project site and Hookela and Mikole Streets are located east of the project area. Paved and unpaved roadways are located throughout the site. A paved parking lot is located on the northwest side of the WWTP near Sand Island Parkway. Unpaved parking areas are located in the construction staging areas to the east and west of the WWTP (Photographs 1 and 2, Appendix C). Potable water is supplied to the project site from the CCH Board of Water Supply. Sewerage for the site is provided by the on-site WWTP. Unlined retention ponds are located on the eastern and western construction staging areas. These ponds are used during the dewatering of the project construction sites in accordance with an NPDES permit.

Empty food containers and other trash were observed around the HASITC. Piles of broken asphalt and discarded tires and auto parts were observed south and southwest of the western construction staging area. Numerous drums (reportedly empty) were observed on the southeastern corner of the site (Photograph 5, Appendix C). In addition, drums storage areas are located on the eastern and western construction staging areas (Photographs 7 and 8, Appendix D). Some household dumping was observed east of the HASITC and west of the CCH baseyard. Broken windshield glass, two 55-gallon drums, vehicle parts, and trash were observed on the northeast portion of the site (Photograph 6, Appendix D).

5.3.2 General Interior Observations

Building 1 – Control/Administration Building – is a two story concrete structure apparently used for administrative purposes. Mr. Salas escorted EI personnel through a portion of the building which appeared to be in use as office and meeting space. A survey of building materials was not made and no observations were made regarding the potential for asbestos-containing materials (ACM).

Building 2 – Main Electric Vault – is a one story structure located east of Building 1. EI personnel were not escorted through Building 2.

Building 3 – Parkway Pump Station – is a one story structure located west of Building 1 and the visitors parking area. EI personnel did not enter this building.

Building 3A – State Training Center – is a one story structure located south of Building 3 and west of Building 1 and the visitor's parking lot. EI personnel did not enter this building.

Building 4 – Flotation/Clarifiers – is a two story structure constructed of concrete and steel consisting of six recently renovated flotation/clarifier units. Support equipment for the clarifiers, including electrical equipment and control room, are located on the ground floor/basement. In addition, spare parts, pipes, and other items are stored on the ground floor of the building. Small quantities of oil and used oil are stored on secondary containment pallets in the basement of the building.

Building 5 – Screening and Grit Facility – is a three story structure constructed of concrete and steel. Grit and sludge are screened and removed from the effluent in this building and taken off site for disposal. A 55-gallon drum of oil was observed on the ground floor of the building.

Building 6 – Solids Building – is five story structure constructed of concrete and steel. Diesel fuel, propane, odor control products, and caustic soda were some of the chemicals stored and used at this building. The building contains four effluent storage tanks and four gravity thickeners. Diesel fuel is stored in an aboveground storage tank with an unmarked capacity – approximately 8,000 gallons – on the east side of the building. The AST is located in a concrete enclosure. The tank is used to fuel boilers located on the ground floor. Minor petroleum stains were observed in and around the concrete enclosure.

Building 7 – Former Ground Maintenance Building – is no longer present. It was formerly located on the east side of the facility in the present location of the construction area. This building was reported to have been used to store ground maintenance equipment.

Building 8 – Maintenance and Supply – is a two story concrete and steel structure used to store maintenance equipment and tools.

Building 9 – Laboratory/Maintenance Building – is a three story concrete and steel structure located east of Building 8. The ground floor of the structure is apparently used for off-site maintenance personnel (personnel tasked with maintaining equipment at other locations). The upper floors are used as a laboratory. Waste oil and motor oil were observed in 55-gallon drums located on the southwest side of the building on secondary containment pallets (Photograph 10, Appendix C). Reportedly, the laboratory uses small quantities of various laboratory reagents, solvents, acids, and bases. The laboratory has a hazardous waste program that requires proper handling, storage, and disposal of hazardous waste in accordance with State and Federal laws.

Building 10 – Effluent Pump Station – is a two story building constructed of concrete and steel. Waste oil is stored in 55 gallon drums in an area beneath the building. The oil storage area is lined with concrete with a 6-inch berm and is surrounded by a chain link fence (Photograph 9, Appendix C). No oil stains or spills were noted in this area. A large diesel fuel AST is located in a concrete lined and bermed enclosure on the northeast side of the building. No evidence of petroleum staining was observed in the enclosure. The AST is used to fuel a day tank and emergency generators located on the second floor of the building.

Building 11 – Carpenter Shop – is a one story steel and concrete warehouse. It appeared to contain lumber and tools. The building was being painted at the time of the site visit. Peeled paint was observed on the ground on the east side of the building. Sand blast grit was observed on the ground on the south side of the building. West of the building is a chain link fence enclosure which contained equipment. West of the enclosure were two metal storage containers which reportedly are used to contain solvents, paints, and other supplies. EI personnel did not enter that storage area. No stains or spills were noted around the storage area.

Building 12 - Painter Shop – a one story wooden and concrete building is located south of Building 11. EI personnel did not enter the building. The building may be used as a shop and office space; however, no one was available to provide EI access to the building.

5.3.3 Summary of Observed Environmental Conditions

Aboveground Storage Tanks

Two large fuel storage ASTs were observed in the WWTP area. One is located on the exterior of Building 6 and the other is located on the northeast side of Building 10. The capacity of these tanks was not known by EI's escort; however, it was later reported that they both have a capacity of 7,500 gallons each (personal communication, Mr. Jay Nakandakare, 2003). The AST at Building 6 is used to fuel boilers located on the ground floor of that building. The AST at Building 10 is used to fuel a day tank in support of emergency generators on the second floor of the building.

Asbestos-Containing Materials

ACM were not specifically included in this assessment; although ACM was not observed on site, it is present in building materials at the site (personal communication, Mr. Jay Nakandakare, 2003; RMTTC, 1999).

Hazardous Materials/Wastes

Hazardous materials observed at the site include solvents, laboratory reagents, oils, lubricants, waste oil, polymers, sodium hydroxide, automobile batteries, fuel (diesel), and paints. Oils and waste oils were observed in 55 gallon drums in four locations within the plant: (1) outside of Building 8; (2) beneath Building 10; (3) in the basement of Building 4; and (4) in the basement of Building 6. All four oil storage areas have secondary containment and were free of obvious staining and odor. Chemical storage areas were observed west of the Carpenters Shop and north of Building 9. The storage areas were not entered. In addition, oil storage was observed in two locations within the eastern construction staging area and in one area in the western construction staging area. Oil stained soil was observed in one of the storage areas on the eastern construction staging area.

Heavy Metals

Heavy metals were not specifically reported; however, a stockpile of sand blast grit which could contain heavy metals was observed on the south side of the site in the vicinity of the Carpenter Shop.

Landfills

No permitted landfills are reported or observed at the site; however, construction waste from previous projects, vehicle parts, equipment parts, and other debris were noted in soil piles on the west side of the site and in areas south and east of the project site. In addition, numerous drums (reported to be empty) are located on the southeast side of the project site. These drums were reportedly left by a past tenant (personal communication, Mr. Wendell Lewis, 2003).

Lead-based Paint

Lead-based paint was not specifically included in this assessment; however, lead-based paint reportedly exists on some of the structures at the project site (RMTTC, 1999). In addition, numerous drums which reportedly are empty but had been previously used to store paint are located on the southeast side of the project site. It is not known if paint is still present in any of the drums or if the paint is lead-based paint.

Medical/biohazardous Waste

Medical and/or biohazardous wastes were not observed at the site; however, the majority of the project site is a wastewater treatment plant and spills of sewage sludge have occurred at the site in the past. The releases were contained and cleaned up (EDR, 2003).

Mixed Waste

Windshield glass, auto body parts, and trash were observed on the ground on the northeast portion of the site (former location of Towco) and in some soil piles on the western construction staging area. Sewage sludge and solids are removed from the wastewater process and disposed of off site.

Operationally Contaminated Sites

Soil staining was observed in several places within the northeast portion of the eastern construction staging area. Because of the nature of the project site (a wastewater treatment plant), it was impossible to note any unusual odors because of the strong odor associated with the plant. No unseasonably stressed or dead vegetation was noted on site. The eastern and western construction staging areas contain numerous soil piles which include soils from construction excavation areas and grading operations. Auto body parts, trash, and debris were noted in soils associated with the western construction staging area.

Pesticides

Pesticides were not observed at the project site.

Polychlorinated Biphenyls

No hydraulic equipment was observed or reported on site. No PCB-containing electric equipment was noted on site. There are electrical transformers located near the HASITC and the CCH Highways Division dewatering facility. Previous investigators have indicated that one of the transformers belongs to HECO and does not contain PCBs. The owner of the other transformer and its PCB status is not known (Levine and Fricke, 2002). PCB-containing electrical equipment was removed from the plant in the 1990s (Division of Wastewater Management, 1991a and b). PCB-impacted soil is known to occur through out the majority of the property (EI, 2003a and b) and at the time of the site reconnaissance a portion of the clarifier construction area on the eastern side of the plant was undergoing a PCB-impacted soil removal.

Potable Water

Potable water at the project site is supplied by the Board of Water Supply. Groundwater wells were not observed on the project site.

Radioactive Materials

No radioactive materials were observed or reported at the project site.

Underground Storage Tanks

No USTs were observed on site during the site reconnaissance. However, reportedly one UST is located in Building 3A (pump house) (personal communication, Mr. Jay Nakandakare, 2003) and two were previously removed from the site (see Section 6.4). This UST is registered with the DOH (EDR, 2003).

Wastewater

The project site is a wastewater treatment plant. Wastewater is discharged from the plant to a deep ocean outfall located south of the plant.

Other Environmental Concerns

Construction debris, auto parts, and trash were observed on the southern and western adjacent properties. Numerous commercial and industrial businesses are present east of the project site.

Section 6 Interviews

6.1 Owner Representative

A formal interview regarding the Sand Island WWTP was not conducted. Instead EI personnel spoke with Mr. Jay Nakandakare, Acting Supervisor of the Sand Island WWTP and Mr. Wayne Salas, Shift Supervisor regarding the project site during the site reconnaissance. Mr. Nakandakare completed a questionnaire and returned it to EI (Appendix D). In addition, EI forwarded via email a questionnaire to Department of Land and Natural Resources (DLNR) representative Mr. Barry Cheung. A response has not been received at this time.

6.2 Occupant Representatives

EI personnel interviewed Mr. Jesse Sybico, Construction Manager with M&E Pacific; Mr. Wendell Chun, Electrical Inspector with RMTC, and Mr. Wendell Lewis, Construction Inspector with RMTC on Monday 24 February 2003 regarding the condition of the construction areas and staging areas prior to the beginning of the Headworks and UV construction projects. Mr. Sybico and Mr. Chun shared photographs of these areas indicating that three structures were located in the construction staging area located east of the WWTP. EI personnel spoke with Mr. Francis Kim, Administrator, HASITC on Friday 25 April 2003 regarding the northeast portion of the project site.

Mr. Lewis indicated that a construction company had approximately one hundred empty 55 gallon drums stored on the southeast side of the construction staging area and that these drums were moved to the southeast fence line to get them out of the way. Mr. Lewis stated that the drums were reportedly used to store marine paint from a painting project at the WWTP. Mr. Chun indicated that only one of the three structures formerly located east of the WWTP was in good condition. It was an equipment storage building used by the WWTP. The other two structures were former construction management buildings left over from previous projects. The photographs viewed indicated that the eastern construction staging area was relatively flat with sparse vegetation and coralline sand.

The construction staging area west of the WWTP was apparently flooded at the time of the photos (October 2001). Mr. Sybico stated that auto parts, tires, and trash were observed in soil piles on the eastern staging area prior to creating the staging area. In addition, during the grading of the area they found approximately three truck loads of broken concrete-rebar piles buried three feet below ground surface. He believes that these materials were discarded from a previous WWTP project. In addition, they found a buried underground storage tank in the fill areas. He stated that the DOH was notified and closure activities were completed (Appendix D; DOH, 2002).

EI personnel spoke with Mr. Francis Kim, Administrator, HASITC, on Friday 25 April 2003. Mr. Kim stated that the Treatment Center had been at its present locations since the early 1960s. Mr. Kim has worked at the Treatment Center for ten years. He stated that a company called "Towco" was located immediately northeast of the Treatment Center from the late 1980s to approximately 1999. He stated that Towco stored numerous vehicles on that portion of the site and part of the present day location of the Treatment Center parking area. Mr. Kim stated that the open storm drain that is present east of the Treatment Center extended west towards the WWTP; however, construction activities have covered a portion of the storm drain.

6.3 Regulatory Agency Representative

EI requested to review pertinent regulatory records from the State of Hawaii DOH. However, a formal interview was not requested regarding the project site.

6.4 Summary of Information Gathered From Interviews

Aboveground Storage Tanks

Two 7,500 gallon capacity diesel fuel tanks are located on site. One AST is located at Building 6 and the other is located at Building 10. Both were installed in 1976 and are constructed of steel.

Asbestos-Containing Materials

ACM were not specifically included in this assessment; ACM was reported at the old sludge incinerator area (Building 6) and the thickener tank area, and in floor tiles of the F/C office (RMTC, 1999; personal communication, Mr. Jay Nakandakare, 2003).

Hazardous Materials/Wastes

Laboratory waste, diesel fuel, oil, odor control chemicals, gasoline, nitric acid, sodium hydroxide, polymers, paints, calcium hypochlorite, degreasers, chlorine, lab chemicals, used oil, trichloroethylene, and acetylene are some of the hazardous materials and wastes reported at the project site. These items are stored in a variety of locations through out the WWTP. Storage areas include:

1. Building 4- Service Area 3 (basement) – oil
2. Building 5 – gasoline, nitric acid, sodium hydroxide, polymers
3. Building 6 – oils, used oils, diesel fuel #2, paints, calcium hypochlorite, polymers
4. Building 8 – oils, trichloroethylene aerosol paints, odor control chemicals, acetylene
5. Building 9 – degreaser, lab chemicals, acetylene
6. Building 10– oils, diesel fuel #2, degreaser, sodium hydroxide, chlorine gas
7. Carpenter Paint Shop – paints, gasoline
8. Carpenter Shack – used oils
9. Waste Oil Storage Compound (no longer present, formerly located north of the carpenter shop)– lab wastes, used oils
10. Gravity Thickener Building- adjacent to Building 6 (basement) – odor control chemicals, sodium hydroxide

Used oil and antifreeze are hauled off site by Unitek. Parts washer solvents are handled by an outside vendor. Trash, used oil filters, oily rags, used pallets, used tires, and used batteries are reportedly taken off site by the CCH. Used oil drums are taken off site by the supplier. Sludge generated at the plant is disposed of at an off-site facility. Previously sludge was dried on site in a sludge incinerator (Building 6); however, this practice was discontinued in the mid 1990s.

Heavy Metals

Heavy metals were not specifically reported. Scrap metal is reportedly stored at Building 8.

Landfills

No indications of liquids or solids dumping were reported at the site or on adjacent properties.

Lead-based Paint

Lead-based paint was not specifically included in this assessment.

Medical/biohazardous Waste

Medical and/or biohazardous wastes were not reported at the site although sewage spills have occurred at the site.

Mixed Waste

Sewage sludge and solids are removed from the waste water process and disposed of off site.

Operationally Contaminated Sites

No unseasonably stressed or dead vegetation was reported at the site or on adjacent properties. No liquid or solid dumping was reported at the site or adjacent properties.

Pesticides

Small quantities of pesticides are used at the WWTP laboratory as reagents and malathion is used to kill weeds on the grounds. No releases have been reported (personal communication, Mr. Jay Nakandakare, 2003).

Polychlorinated Biphenyls

Portable and stationary hydraulic equipment was reported on site. Hydraulic equipment reportedly uses "typical" hydraulic oil. PCB-containing electrical equipment was removed from the plant in the 1990s (Division of Wastewater Management, 1991a and b). PCB-impacted soil is known to occur through out the majority of the property (EI, 2003a and b) and at the time of the site reconnaissance a portion of the Clarifier construction area on the eastern side of the plant was undergoing a PCB-impacted soil removal.

Potable Water

Potable water at the project site is supplied by the Board of Water Supply. No potable groundwater wells are reported at the site.

Radioactive Materials

No radioactive materials were reported at the project site.

Underground Storage Tanks

One 1,000-gallon diesel fuel UST is located in Building 3A (pump house). This UST reportedly replaced an older UST that was removed in 1999. In addition, one 500-gallon UST was found in a soil pile located on the west side of the project site during site preparations east of the Headworks project. The UST was removed, sheen was observed in the pit. Soil and groundwater samples were collected and analyzed in accordance with State of Hawaii DOH UST Technical Guidance (personal communications, Mr. Jessie Sybico, 2003). The DOH concluded that no further action was necessary with regard to the UST (DOH, 2002).

Wastewater

The project site is a wastewater treatment plant. Wastewater is discharged from the plant to a deep ocean outfall located south of the plant. All on site drains are connected to the wastewater treatment sewerage system. Drainage channels at the site are located on the east side of the WWTP and discharge to Honolulu Harbor.

Other Environmental Concerns

Auto body parts, trash, concrete piles, and other debris were reported on to be present on the western staging area prior to construction. In addition, a junkyard was reportedly located on the east side of the site in the past.

Section 7 Findings

The Sand Island WWTP and adjacent construction areas are part of Sand Island which was created from dredge material added to Quarantine Island (also known as Anuenue Island/Rainbow Island) in the 1940s. The northeast portion of the site was part of the original Quarantine Island which was created from dredging soil from the harbor in the late 1800s and early 1900s. Construction of the WWTP began in 1974 and expansion of the plant is on-going today. Archival maps and aerial photographs indicate that the site and surrounding area was used as a U.S. Military Reservation in the 1940s and 1950s. However, the site appeared to be vacant in 1949 (RMTC, 1999) through the early 1960s. Aerial photographs from the 1960s and 1970s indicated that large portions of the eastern and northwestern portions of the site have been used as junkyards or dumpsites.

7.1 Aboveground Storage Tanks

Two 7,500 gallon capacity diesel fuel tanks are located on site. One AST is located at Building 6 and the other is located at Building 10. Both were installed in 1976 and are constructed of steel. Oil staining was observed at the Building 6 location. The area impacted appeared to be small. A fuel release from an AST occurred at the site. The release was reportedly cleaned up and a no further action priority was assigned to the site (EDR, 2003).

7.2 Asbestos-Containing Materials

ACM were not specifically included in this assessment; although ACM was not observed on site, it is present in building materials at the site (personal communication, Mr. Jay Nakandakare, 2003; RMTC, 1999).

7.3 Hazardous Materials/Wastes

Laboratory waste, diesel fuel, oil, odor control chemicals, gasoline, nitric acid, sodium hydroxide, polymers, paints, calcium hypochlorite, degreasers, chlorine, lab chemicals, used oil, trichloroethylene, and acetylene are some of the hazardous materials and wastes reported at the project site:

- Building 4- Service Area 3 (basement) – oil
- Building 5 – gasoline, nitric acid, sodium hydroxide, polymers
- Building 6 – oils, used oils, diesel fuel #2, paints, calcium hypochlorite, polymers
- Building 8 – oils, trichloroethylene aerosol paints, odor control chemicals, acetylene
- Building 9 – degreaser, lab chemicals, acetylene
- Building 10– oils, diesel fuel #2, degreaser, sodium hydroxide, chlorine gas
- Carpenter Paint Shop – paints, gasoline
- Carpenter Shack – used oils
- Waste Oil Storage Compound (no longer present)– lab wastes, used oils
- Gravity Thickener Building- adjacent to Building 6 (basement) – odor control chemicals, sodium hydroxide

Used oil and antifreeze are hauled off site by Unitek. Parts washer solvents are handled by an outside vendor. Trash, used oil filters, oily rags, used pallets, used tires, and used batteries are

reportedly taken off site by the CCH. Used oil drums are taken off site by the supplier. In addition, oil storage was observed in two locations within the eastern construction staging area and in one area in the western construction staging area. Oil stained soil was observed in one of the storage areas on the eastern construction staging area.

Observations made of the storage areas during the site reconnaissance indicate *de minimis* quantities of oil and waste oil on the ground in eastern construction staging area. All other observed chemical storage areas appeared to be in good condition.

7.4 Heavy Metals

Heavy metals were not specifically reported; however, a stockpile of sand blast grit was observed on the south side of the site in the vicinity of the Carpenter Shop and scrap metal is reportedly stored on site prior to removal by an outside party.

7.5 Landfills

No permitted landfills are reported or observed at the site; however, construction waste from previous projects, vehicle parts, equipment parts, and other debris were noted in soil piles on the west side of the site and in areas south and east of the project site. In addition, numerous drums (reported to be empty) are located on the southeast side of the project site. Aerial photographs, previous investigations, and DOH records indicate that junkyards and dumps have been located on the eastern, north-central, and western portions of the site and on adjacent properties.

7.6 Lead-based Paint

Lead-based paint was not specifically included in this assessment; however, lead-based paint reportedly exists on some of the structures at the project site (RMTC, 1999). In addition, numerous drums which reportedly are empty but had been previously used to store paint are located on the southeast side of the project site. It is not known if paint is still present in any of the drums or if the paint is lead-based paint.

7.7 Medical/biohazardous Waste

Medical and/or biohazardous wastes were not observed at the site; however, the majority of the project site is a wastewater treatment plant and spills of sewage sludge have occurred at the site in the past. The releases were contained and cleaned up (EDR, 2003).

7.8 Mixed Waste

Windshield glass, auto body parts, and trash were observed on the ground on the northeast portion of the site (former location of Towco). Sewage sludge and solids are removed from the wastewater process and disposed of off site.

7.9 Operationally Contaminated Sites

Oil staining was observed on the ground in several places within the northeast portion of the eastern construction staging area. The quantities of the of the released appeared to be small or *de minimus*. Because of the nature of the project site (a wastewater treatment plant), it was impossible to note any unusual odors because of the strong odor associated with the plant. No unseasonably stressed or dead vegetation was noted or reported on site. The entire site was created from fill material reportedly obtained from dredge material placed on the site and surrounding are at various increments from the late 1800s to the time of the WWTP construction in the 1970s.

7.10 Pesticides

Small quantities of pesticides are used at the WWTP. No releases have been reported (personal communication, Mr. Jay Nakandakare, 2003).

7.11 Polychlorinated Biphenyls

Portable and stationary hydraulic equipment was reported on site. Hydraulic equipment reportedly uses "typical" hydraulic oil (not expected to contain PCBs). PCB-containing electrical equipment was removed from the plant in the 1990s (Division of Wastewater Management, 1991a and b). PCB-impacted soil is known to occur through out the majority of the property (EI, 2003a and b) and at the time of the site reconnaissance a portion of the clarifier construction area on the eastern side of the plant was undergoing a PCB-impacted soil removal. The presence of PCB-impacted soil throughout the project site is well documented (EI, 2003a). The pattern of detected PCB-impacted soil and concentration of PCBs in the soil indicate that the contamination is not likely the result of single release. The results of an on-going risk assessment indicate that the cancer risk is within the acceptable range of risk of 10^{-4} to 10^{-6} used by DOH. Therefore, remediation of PCB contamination is not required for human health risks to future wastewater treatment plant operators.

7.12 Potable Water

Potable water at the project site is supplied by the Board of Water Supply. There are no groundwater wells located on the project site.

7.13 Radioactive Materials

No radioactive materials were observed or reported at the project site.

7.14 Underground Storage Tanks

No USTs were observed on site during the site reconnaissance. However, reportedly one 1,000-gallon UST is located in Building 3A (pump house). This UST reportedly replaced an older UST that was removed in 1999. In addition, one 500-gallon UST was found in a soil pile located on the west side of the project site during site preparations east of the Headworks project. The UST was

removed. Soil and groundwater samples were collected and analyzed in accordance with State of Hawaii DOH UST Technical Guidance (personal communications, Mr. Jessie Sybico, 2003). The DOH concluded that no further action is necessary with regard to the UST (DOH, 2002).

7.15 Wastewater

The project site is a wastewater treatment plant. Wastewater is discharged from the plant to a deep ocean outfall located south of the plant.

7.16 Other Environmental Concerns

Construction debris, auto parts, and trash were observed on the southern and western adjacent properties. Numerous commercial and industrial businesses are present east of the project site.

Prior investigations at the site tested for petroleum constituents and heavy metals in order to determine if impacts from the past use as a junkyard on the northeastern portion of the site (former Towco site) could be discerned in soil; however, analytical results revealed only limited areas of elevated metals (arsenic, lead), volatile compounds (ethylbenzene, xylenes), and TPH. The results of an on-going risk assessment (EI, 2003) indicate that these constituents do not represent a risk to human health. Aerial photographs, previous reports (Masa Fujioka and Associates, 1992) and DOH records reveal that the site and surrounding areas have been used as one or more junk yards over the years and that at least one fire has occurred at an on-site junkyard (Towco).

Section 8 Opinion

The ASTM defines "material threat" as "a physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the environmental professional, is threatening and might result in impact to public health or the environment. Also, it defines "historical REC" as and "environmental condition which in the past would have been considered a REC, but which may or may not be considered a REC currently.

8.1 Aboveground Storage Tanks

The presence of two ASTs at the subject site is not considered a REC; however, the reported release of petroleum at the project site from one of the ASTs. The release was cleaned up and a no further action priority was assigned to the release (EDR, 2003). Therefore, the ASTs are not considered a REC.

8.2 Asbestos-Containing Materials

ACM is present in some building materials at the project site. ACM is not included in the scope of this assessment. It is EI's understanding that ACM is being addressed by the CCH under another project; therefore, the presence of ACM is not considered a REC.

8.3 Hazardous Materials/Wastes

Laboratory waste, diesel fuel, oil, odor control chemicals, gasoline, nitric acid, sodium hydroxide, polymers, paints, calcium hypochlorite, degreasers, chlorine, lab chemicals, used oil, trichloroethylene, and acetylene are some of the hazardous materials and wastes reported at the project site.

Observations made of the storage areas during the site reconnaissance indicate *de minimis* quantities of oil and waste oil on the ground in eastern construction staging area. All other observed chemical storage areas appeared to be in good condition. Therefore, the presence of hazardous materials is not considered a REC.

8.4 Heavy Metals

Heavy metals were not specifically reported; however, a stockpile of sand blast grit was observed on the south side of the site in the vicinity of the Carpenter Shop and scrap metal is reportedly stored on site prior to removal by an outside party. The presence of sand blast grit located on the south side of the site is a possible REC because of the potential presence of heavy metals in the spent grit which could impact the soil at the site and the material could be classified a hazardous waste depending on its characteristics.

8.5 Landfills

No permitted landfills are reported or observed at the site; however, construction waste from previous projects, vehicle parts, equipment parts, and other debris were noted in soil piles on the west side of the site and in areas south and east of the project site. In addition, aerial photographs and first hand accounts indicate that portions of the project site have been used as one or more junkyards and for vehicle storage. Also, numerous drums (reported to be empty) are located on the southeast side of the project site. The former presence of junkyards at the project site and the presence of numerous empty drums at the southeast side of the project site is a possible REC because of the potential for soil and groundwater contamination as a result of poor past chemical storage practices (e.g., leaking car batteries, waste oil, fuel releases).

8.6 Lead-based Paint

Lead-based paint was not specifically included in this assessment; however, lead-based paint reportedly exists on some of the structures at the project site. In addition, numerous drums which reportedly are empty but had been previously used to store paint are located on the southeast side of the project site. It is not known if paint is still present in any of the drums or if the paint is lead-based paint. The presence of dozens of "empty" drums on the southeast side of the project site is a possible REC because of the potential for soil and groundwater contamination as a result of poor storage practices and the potential for the presence of hazardous waste. The reported presence of lead-based paint on facility structures is a REC; however, it is EI's understanding that issue is being addressed under a separate project.

8.7 Medical/biohazardous Waste

Medical and/or biohazardous wastes were not observed at the site; however, the majority of the project site is a wastewater treatment plant and spills of sewage sludge have occurred at the site in the past. The releases were contained and cleaned up (EDR, 2003). Therefore, medical and biohazardous waste is not considered a REC at this time.

8.8 Mixed Waste

Windshield glass, auto body parts, and trash were observed on the ground on the northeast portion of the site (former location of Towco) and on the western portion of the site. Sewage sludge and solids are removed from the wastewater process and disposed of off site. The presence of the sewage sludge and solids is not considered a REC at this time as these materials are properly managed and disposed of at an off-site facility. The presence of the windshield glass, auto body parts, and trash on the northeastern portion of the project site has been previously addressed by others (Levine Fricke, 2002 a and b; EI, 2002). The presence of mixed waste on the west side of the project site is a possible REC because of the potential for soil and groundwater contamination as a result of poor past chemical storage practices (e.g., leaking car batteries, waste oil, fuel releases).

8.9 Operationally Contaminated Sites

Soil staining was observed in several places within the northeast portion of the eastern construction staging area. Because of the nature of the project site (a wastewater treatment plant), it was impossible to note any unusual odors because of the strong odor associated with the plant. No unseasonably stressed or dead vegetation was noted or reported on site. The presence of oil stained soil in the eastern construction staging area is not considered a REC at this time as the release represents a *de minimis* amount.

8.10 Pesticides

Small quantities of pesticides are used at the WWTP. No releases have been reported (personal communication, Mr. Jay Nakandakare, 2003); therefore, pesticides are not considered a REC at this time.

8.11 Polychlorinated Biphenyls

Portable and stationary hydraulic equipment was reported on site. Hydraulic equipment reportedly uses "typical" hydraulic oil. PCB-containing electrical equipment was removed from the plant in the 1990s (Division of Wastewater Management, 1991a and b). The presence of PCB-impacted soil throughout the project site is well documented (EI, 2003a). The pattern of detected PCB-impacted soil and concentration of PCBs in the soil indicate that the contamination is not likely the result of single release. Instead, the pattern of PCB-impacted soil at various depths and locations at the site suggests that the contamination may be the result of PCB-impacted soil fill material used at the site in the past or possible spraying of PCB-impacted oil (for dust suppression) and regrading of portions of soil at the site. The results of an on-going risk assessment indicate that the cancer risk is within the acceptable range of risk of 10^{-4} to 10^{-6} used by DOH. Therefore, remediation of PCB contamination is not required for human health risks to future wastewater treatment plant operators. The presence of PCB-impacted soil at the project site is a current REC because of the restrictions it presents for occupancy and land use.

8.12 Potable Water

Potable water at the project site is supplied by the Board of Water Supply. There are no groundwater wells located on the project site. Potable groundwater at the site is not considered a REC as all potable water at the site is supplied by off-site sources and the shallow groundwater beneath the site is not a source of potable water.

8.13 Radioactive Materials

No radioactive materials were observed or reported at the project site and, therefore, they are not considered a REC.

8.14 Underground Storage Tanks

The presence of a 1,000-gallon UST at the site is not considered a REC as the tank is in compliance with current environmental regulations. The former presence of two USTs at the site is not considered a REC as one was found not to be leaking and the other was issued a "no further action" letter from the DOH.

8.15 Wastewater

The project site is a wastewater treatment plant. Wastewater is discharged from the plant to a deep ocean outfall located south of the plant under a current NPDES permit; therefore, wastewater at the site is not considered a REC.

8.16 Other Environmental Concerns

Construction debris, auto parts, and trash were observed on the southern and western adjacent properties. Numerous commercial and industrial businesses are present east of the project site. Prior investigations at the site tested for petroleum constituents and heavy metals in order to determine if impacts from the past use as a junkyard on the northeastern portion of the site (former Towco site) could be discerned in soil however, analytical results revealed only limited areas of elevated metals (arsenic, lead), volatile compounds (ethylbenzene, xylenes), and TPH. The results of an on-going risk assessment (EI, 2003) indicate that these constituents do not represent a risk to human health. The former presence of more than one junkyard/dump at the project site and adjacent property (Mr. Pila's junkyard) is a possible REC because of the potential for soil and groundwater contamination as a result of poor past chemical storage practices (e.g., leaking car batteries, waste oil, fuel releases).

Section 9 Conclusions

EI has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-00 of the Sand Island WWTP (TMK 1-5-041:005), the site. Any exceptions to, or deletions from, this practice are described in the Limitations and Exceptions section of this report. This assessment has revealed no evidence of RECs in connection with the site except for the following:

9.1 Heavy Metals

The presence of sand blast grit located on the south side of the site is a possible REC because of the potential presence of heavy metals in the spent grit which could impact the soil at the site and the material could be classified a hazardous waste depending on its characteristics (Figure 9-1).

9.2 Landfills

The former junkyards and dump sites at the project site and the presence of numerous empty drums at the southeast side of the project site (Figure 9-1) is a possible REC because of the potential for soil and groundwater contamination as a result of poor past chemical storage practices (e.g., leaking car batteries, waste oil, fuel releases).

9.3 Lead-based Paint

The presence of dozens of "empty" drums on the southeast side of the project site (Figure 9-1) is a possible REC because of the potential for soil and groundwater contamination as a result of poor storage practices and the potential for the presence of hazardous waste.

9.4 Mixed Waste

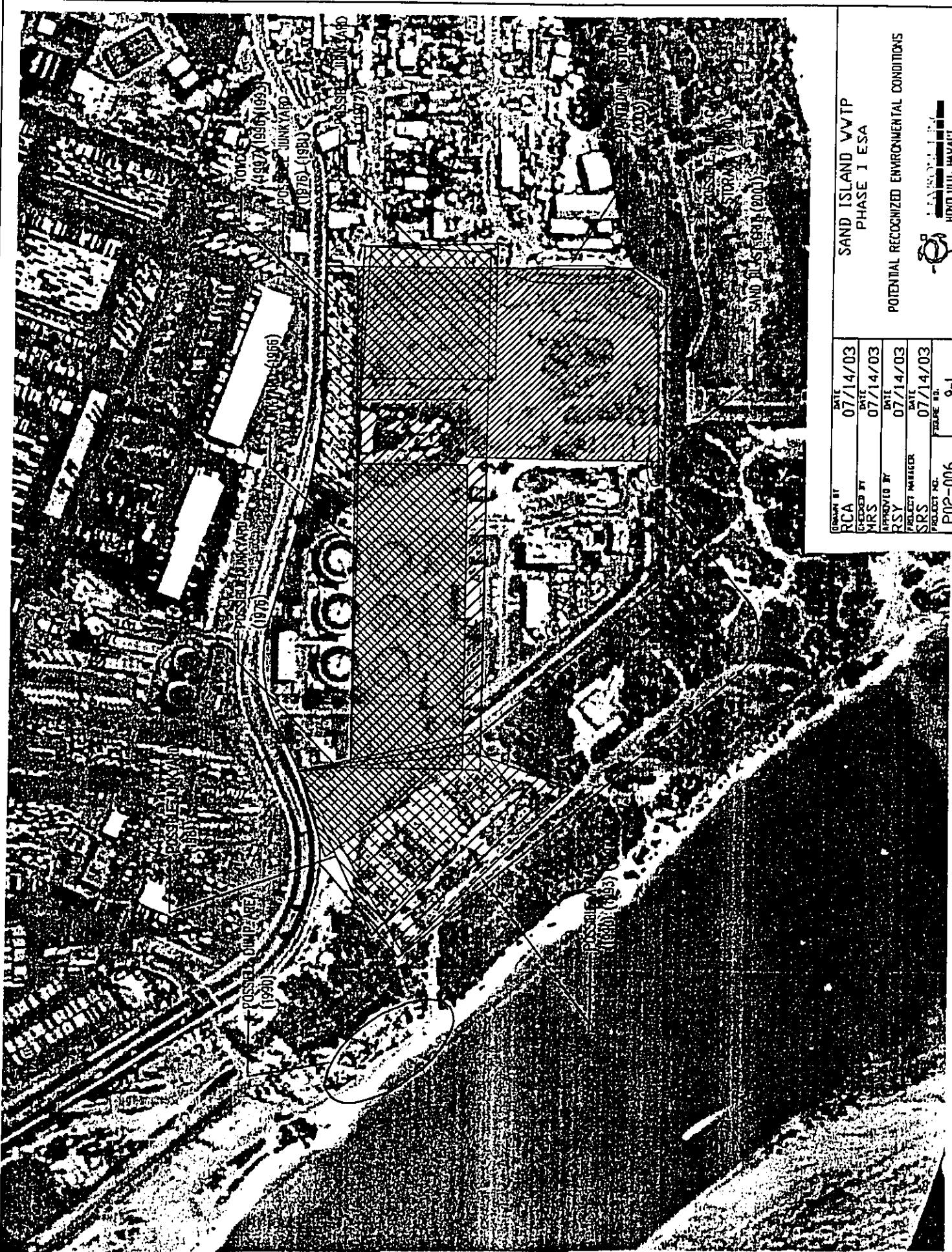
The presence of mixed waste on the west side of the project site (Figure 9-1) is a possible REC because of the potential for soil and groundwater contamination as a result of poor past chemical storage practices (e.g., leaking car batteries, waste oil, fuel releases).

9.5 Polychlorinated Biphenyls

The presence of PCB-impacted soil throughout the project site is well documented (EI, 2003a) (see Figure 2-3). The pattern of detected PCB-impacted soil and concentration of PCBs in the soil indicate that the contamination is not likely the result of single release. Instead, the pattern of PCB-impacted soil at various depths and locations at the site suggests that the contamination may be the result of PCB-impacted soil fill material used at the site in the past or possible spraying of PCB-impacted oil (for dust suppression) and regrading of portions of soil at the site. The results of an ongoing risk assessment indicate that the cancer risk is within the acceptable range of risk of 10^{-4} to 10^{-6} used by DOH. Therefore, remediation of PCB contamination is not required for human health risks to future wastewater treatment plant operators. The presence of PCB-impacted soil at the project site is a current REC because of the restrictions it presents for occupancy and land use.

9.6 Other Environmental Concerns

The former presence of more than one junkyard/dump at the project site and on adjacent properties (Figure 9-1) is a possible REC because of the potential for soil and groundwater contamination as a result of poor past chemical storage practices (e.g., leaking car batteries, waste oil, fuel releases) and fires at the site.



DRAWN BY: RCA
 CHECKED BY: MRS
 APPROVED BY: RSV
 PROJECT NUMBER: SRS
 PROJECT NO.: P02-006
 SCALE: 9-1

DATE: 07/14/03
 DATE: 07/14/03
 DATE: 07/14/03
 DATE: 07/14/03

**SAND ISLAND WWTP
 PHASE 1 ESA**

POTENTIAL RECOGNIZED ENVIRONMENTAL CONDITIONS

U.S. ARMY CORPS OF ENGINEERS
 HONOLULU, HAWAII
 IHAU

Section 10 Recommendations

Based on the historical research, EI identified six RECs at the Sand Island WWTP: (1) the potential presence of heavy metals associated with sand blast grit in an area located south of the Carpenter Shop; (2) the potential presence of one or more debris areas as evidenced by junkyards/dump sites and buried materials in and around the project site which could impact the soil and groundwater at the project site; (3) the potential presence of lead-based paint in dozens of "empty" drums located on the southeast corner of the site; (4) the potential presence of mixed waste in soil piles on the west side of the site which could impact the site; (5) the documented presence of PCB-impacted soil at the site which presents restrictions for occupancy and land use; and (6) the presence of former junkyards/dump sites in and around the site which could impact soil and groundwater at the site. EI recommends sampling and chemical analysis of the sand blast grit in order to determine the metals content of the materials and the proper disposal of this material. In addition, EI recommends the removal and proper disposal of the drums located on the southeast corner of the site. Furthermore, EI recommends conducting a Phase II environmental assessment of the site with the collection of surface and subsurface soil and groundwater samples in the former junkyard and dump sites. The samples should be analyzed for constituents of concern related to the specific REC.

Section 11 References

11.1 Aerial Photographs

Date	Flown For	Photographer	Roll & Frame	Scale
April 3 1952	Unknown (from U.H. Map Collection)	Unknown	"2-71 GS-MYFY".	Unknown
September 20, 1952	Unknown	RMTC	894-9	Unknown
December 18, 1954	Unknown	RMTC	1266-9	Unknown
January 19, 1959	Unknown (from U.H. Map Collection)	Unknown	2-9 GS-VXY	Unknown
November 23, 1960	Unknown	RMTC	2183-6	Unknown
January 20, 1961	Unknown	RMTC	2225-7V	Unknown
January 12, 1963	Unknown (from U.H. Map Collection)	Unknown	EKM-2CC 206	Unknown
January 6, 1966	Unknown	RMTC	3532	Unknown
February 6, 1968	Unknown (from U.H. Map Collection)	Unknown	3-7 GSVXJS	Unknown
1969	City and County of Honolulu (from U.H. Map Collection)	RMTC	Sheet 544-48	1:200
October 3, 1969	Unknown	RMTC	5064-14	Unknown
March 9, 1972	Unknown	RMTC	5670-10	Unknown
December 14, 1973	Unknown	RMTC	6103-10	6"=11,000 feet
December 3, 1974	Unknown	RMTC	6510-5	Unknown
December 19, 1976	Unknown	RMTC	7036-6	Unknown
1978	U.S.G.S.	U.S.G.S.	Unknown	1:24,000
October 24, 1978	Unknown	RMTC	7455-1	6"=11,000 feet
October 29, 1981	Unknown	RMTC	8108-2	1 inch = 1,000 feet
November 10, 1990	Unknown	RMTC	8715-5	Unknown
May 15, 1991	Unknown	RMTC	8750-11	Unknown
January 17,	Unknown	RMTC	8799-8	Unknown

Date	Flown For	Photographer	Roll & Frame	Scale
1992				
September 24, 1992	NASA	Unknown (from U.H. Map Collection)	92-162 D-E	Unknown
October 1, 1993	Unknown (from U.H. Map Collection)	Unknown	NOS CAN-25 No. 4288	Unknown
October 8, 1993	Unknown	RMTC	8909-13	1 inch = 1,000 feet
February 28, 1994	Unknown	RMTC	8925-11	Unknown
February 1, 1997	Unknown	RMTC	9037-4	Unknown
January 23, 1998	Unknown	RMTC	9061-14."	Unknown

11.2 Other References

American Society for Testing Materials, 1997, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process: Designation E 1527-00*, 27 p.

Division of Wastewater Management, Department of Public Works, City and County of Honolulu, Hawaii, 1991, *Contract Documents for Sand Island Wastewater Treatment Plant, Replace PCB Transformers at Load Centers No. 3A, 3B, 5A, and 5B*, Honolulu, Oahu, Hawaii, Job No. W2-91.

Division of Wastewater Management, Department of Public Works, City and County of Honolulu, Hawaii, 1991, *Contract Documents for Sand Island Wastewater Treatment Plant, Replace PCB Transformers at Load Centers No. 1, 2A, 2B, 4A, and 4B*, Honolulu, Oahu, Hawaii, Job No. W2-91.

Ecology and Environment, Inc., 2000a, *Phase I Brownfields Environmental Site Assessment for Sand Island State Park, Honolulu, Hawaii*. Prepared for State of Hawaii Department of Business, Economic Development, & Tourism, Department of Land and Natural Resources, Department of Health; United States Environmental Protection Agency, Region 9. October 2000.

Ecology and Environment, Inc., 2000b, *Phase I Environmental Assessment and Phase II Sampling and Analysis Plan for Sand Island State Park Brownfields, Honolulu, Hawaii*. Prepared for State of Hawaii Department of Business, Economic Development, & Tourism, Department of Land and Natural Resources, Department of Health; United States Environmental Protection Agency, Region 9. October 2000.

Ecology and Environment, Inc., 2001, *Brownfields Targeted Site Assessment Report for Sand Island State Park Brownfields, Honolulu, Hawaii*. Prepared for State of Hawaii Department of Business, Economic Development, & Tourism, Department of Land and Natural Resources,

-
- Department of Health; United States Environmental Protection Agency, Region 9. March 2001.
- Environet, Inc., 2002a, *Environmental Site Investigation, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction August 2002.
- Environet, Inc., 2002b, *Draft Human Health Risk Assessment, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction August 2002.
- Environet, Inc., 2002c, *Letter Report, Environmental Site Investigation Follow-On PCB Sampling, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction August 2002.
- Environet, Inc., 2002d, *Letter Report, Soil Stockpile Sampling and Analysis, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for Brown and Caldwell and the City and County of Honolulu, Department of Design and Construction. August 2002.
- Environet, Inc., 2002e, *Toxic Substances Control Act Notification Report, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction September 2002.
- Environet, Inc., 2002f, *Final Letter Report 96" Primary Effluent Pipeline, Effluent Pump Station Wet Wells, and 84" - Final Effluent Pipeline Sampling, and Analysis at the Ultraviolet Disinfection Project Site, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for Brown and Caldwell and the City and County of Honolulu. Department of Design and Construction. September 2002.
- Environet, Inc., 2002g, *Contaminated Soil Review Report, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction October 2002.
- Environet, Inc., 2003a, *Draft Soil Management Plan, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction January 2003.
- Environet, Inc., 2003b, *Letter Report, Environmental Site Investigation, Proposed New Pond and Injection Well Location, PCB Sampling, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction 2003.
- Environet, Inc., 2003c, *Draft Environmental Site Investigation, Additional Sampling Investigation Report, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction February 2003.
- Environmental Data Resources, Inc., 2002a, *Sanborn Map Report for Sand Island Wastewater Treatment Plant*. Prepared for Environet, Inc. November 2002.

Environmental Data Resources, Inc., 2002b, *The EDR Radius Map with GeoCheck for Sand Island Wastewater Treatment Plant*. Prepared for Environet, Inc. December 2002.

State of Hawaii, Department of Health, 2002, Correspondence to Mr. Sean Omatsu, CCH Wastewater Division, Regarding Facility I.D. No. 9-103745/Release I.D. No. 020027 from Steven Y.K. Chang, Solid and Hazardous Waste Branch.

Territory of Hawaii, Military Survey, 1913, *Topographic Map of the Island of Oahu, Territory of Hawaii, scale 1: unknown*. Reviewed at the University of Hawaii Hamilton Library Map Collection.

U.S. Army, War Department, 1943, *Topographic Map of Honolulu Quadrangle*. Scale (1:20,000). Reviewed at the University of Hawaii Hamilton Library Map Collection.

U.S. Geological Survey, 1927, *7 1/2-minute topographic map of the Honolulu Quadrangle, Hawaii: scale 1: 20,000*. Reviewed at the University of Hawaii Hamilton Library Map Collection.

U.S. Geological Survey, 1959, *7 1/2-minute topographic map of the Honolulu Quadrangle, Hawaii: scale 1: 24,000*. Reviewed at the University of Hawaii Hamilton Library Map Collection.

U.S. Geological Survey, 1969, *7 1/2-minute topographic map of the Honolulu Quadrangle, Hawaii: scale 1: 24,000*. Reviewed at the University of Hawaii Hamilton Library Map Collection.

U.S. Geological Survey, 1983, *7 1/2-minute topographic map of the Honolulu Quadrangle, Hawaii: scale 1: 24,000*. Reviewed at the University of Hawaii Hamilton Library Map Collection.

U.S. Geological Survey, 1998, *7 1/2-minute topographic map of the Honolulu Quadrangle, Hawaii: scale 1: 24,000*. Reviewed at the University of Hawaii Hamilton Library Map Collection.

R.M. Towill Corporation, 1999, *Phase I Environmental Site Assessment for Sand Island Wastewater Treatment Plant Modifications, 90 MGD PER, 1350 Sand Island Parkway Road, Honolulu, Oahu, Hawaii*. Prepared for City and County of Honolulu, Department of Wastewater Management, Honolulu, Hawaii. March 1999.

Section 12 Limitations and Exceptions

This report and the associated work have been provided in accordance with the principle and practices generally employed by the local environmental consulting profession. This is in lieu of all warranties, express or implied.

This ESA is not a regulatory compliance audit or an evaluation of the efficiency of the use of any hazardous materials at the site. No evaluation for the presence of asbestos containing materials (ACM), urea-formaldehyde foam insulation, lead-based paint, or other hazardous building materials; methane; radon gas; lead in drinking water; wetlands; cultural and historic resources; industrial hygiene and health and safety; ecological resources and endangered species; indoor air quality; or high voltage power lines is included in EI's assessment.

EI's observations regarding (and sampling for) ACM were incidental to the performance of this ESA. EI noted the presences of suspect interior ACM that were readily available during EI's reconnaissance. No samples were collected from the roof area of the building. No demolition was conducted to evaluate the presence of suspect ACM in wall cavities, chases, or other inaccessible areas. EI has not evaluated the need for abatement of any ACM on site.

EI's findings and opinions are based on information available from public sources on specific dates (historical photographs, maps, and regulatory agency files, lists, and databases); this information is changing continually and is frequently incomplete. Unless EI has actual knowledge to the contrary, information obtained from interviews or provided to EI by RMTC has been assumed to be correct and complete. EI does not assume any liability for information that has been misrepresented to EI or for items not visible, accessible or present on the site at the time of the site reconnaissance.

EI cannot warrant or guarantee that not finding indicators of hazardous materials means that hazardous materials do not exist on the site. There is no investigation which is thorough enough to preclude the presence of materials on the site which presently, or in the future, may be considered hazardous. Because regulatory evaluation criteria are constantly changing, concentrations of contaminants present and considered to be acceptable may, in the future, become subject to different regulatory standards and require remediation.

Where records indicate that prior to remedial work or tank removals have occurred, there is a risk that the work may not have been performed correctly or completely. In these cases, if the regulatory agency has approved the closure of the tank or other work done, EI has assumed that the work was done correctly and completely. Opinions and judgments expressed herein, which are based on EI's understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

This report has been prepared for use by RMTC. This report shall not be relied upon by or transferred to any other party, or used for any other purpose, without the express written authorization of EI.

Section 13 Qualification of Environmental Professionals

The qualifications of the Project Manager and the other Environmental Professionals involved in this Phase I ESA meet the EI requirements for performing ESAs.

Appendix A
User-Provided Documents

ATTACHMENT "B"

DESCRIPTION OF CURRENT OPERATION OF THE SAND ISLAND WWTP

The Sand Island WWTP has been in service for approximately 28 years and is operating at 87 percent of its design average flow capacity. Presently, the plant is undergoing a flotator clarifier refurbishment project, which is scheduled for completion in December 2002. The plant expansion project is also currently ongoing. Upon completion of these projects, the process operating parameters will change. The plant's original operating parameters, obtained from our O&M manuals, were adjusted to effect optimum performance stemming from reduced equipment and process performance.

The Sand Island WWTP, constructed in 1974, was designed to treat an average daily flow of 82 million gallons per day (mgd) of both industrial and domestic wastewater. Presently, daily average flow through the Sand Island WWTP is about 71 mgd. The plant was designed to discharge a maximum flow of 202 mgd.

The majority of wastewater flows entering the plant are from the Ala Moana and Hart Street Wastewater Pumping Stations (WWPS). The Ala Moana WWPS receives an average daily flow of 49.7 mgd from the tributary service areas encompassing Aina Haina (eastern end of Honolulu) to Kalihi (on the west). The Hart Street WWPS receives an average daily flow of 21.4 mgd from the Fort Shafter and the Parkway WWPSs. Advanced primary treated wastewater is discharged into Mamala Bay through an 84" diffuser pipe, 10,400 feet off shore, along the 240-foot depth contour.

The first treatment process in the liquid handling stream is the headworks. The Headworks Building comprises the four mechanically-cleaned bar screens, two influent channels, and the grit removal and washing system. Each of four available bar screens, with 1" clear spacing between bars, have a design flow capacity of 68 mgd to maintain a flow velocity of 3.5 fps. Presently, two bar screens are typically in service to provide a flow handling capacity of up to 94 mgd. The other standby bar screens are maintained as spares for equipment redundancy and for handling high flow conditions. These units are service-rotated weekly to insure functional capability and balanced running time for even wear. Presently, all screenings and grit are discharged onto a conveyor belt and hauled to a sanitary landfill on a daily basis.

The next treatment process in the liquid handling stream is the Flotator-Clarifier Tanks (F/C tanks) where the screened wastewater is gravity fed through influent channels into six available F/C tanks. Each F/C tank has a hydraulic capacity of 28.8 mgd (172.8 mgd total) and a maximum surface loading of 13.8 mgd. The wastewater flow enters the F/C tanks through the bottom of the center well, where it intermixes with pressurized recycled primary effluent obtained the effluent channel. This dissolved-air flotation physical process for wastewater treatment serves to effectively remove scum, grease, and suspended solids. The floatables are then skimmed off the surface into a float trough, along with scum from the scum box, and sent to the solids handling section where it's combined with the dewatered raw sludge.

To operate one F/C tank, the O&M manual recommends operating one recycle pump at 3,500 gpm, one pressure vessel set at 70-75 psi, and maintaining an air flow ratio of 35-45 cfm. Since we are only able to utilize five F/C tanks at this time because of the ongoing F/C tanks refurbishment project, we are presently operating four recycle pumps to three-pressure vessels. This increases the recycle flow from about 3,500 gpm to 4,666 gpm, and the recycle ratio in proportion to the incoming flow. There are a total of eight recycle pumps; four pumps are designated for F/C tanks 3, 5, and 6, and the other four are designated for F/C tanks 1, 2, and 4. Each tank has its own backpressure valve. We are maintaining the pressure in the saturation vessels at 55 - 60 psi to reduce the pressure on the piping system and keeping a 35-55 cfm air to flow ratio. Upon completion of the F/C tanks refurbishing project, we will attempt to operate the F/C tanks as stipulated in the O&M manuals.

Settled solids that are recovered from the bottom of the F/C tanks are transported to the degritter cyclones via raw sludge pumps. Presently, there are twelve raw sludge pumps and two raw sludge pumps designated to each F/C tank. For each F/C tank, one of two raw sludge pumps is in service, while the other serves as back up. These pumps are service-rotated monthly to maintain even wear and to test their mechanical reliability. Cyclone degritters use centrifugal force to separate grit and other heavy solids from the F/C tanks' settled sludge. The grit is then sent to grit classifiers to be washed prior to hauling and disposal at the sanitary landfill. The remaining degrittled sludge from the cyclone degritters is pumped via the primary sludge line to a sludge division box for further processing. The degrittled sludge from the cyclone degritters is screened and thickened before routing to the wet sludge storage tanks.

The O&M manual recommends that one cyclone degritter (500 gpm) be used for every two raw sludge pumps (250 gpm each pump). There are a total of four available cyclone degritters and three are in service receiving flow from the five F/C tanks' raw sludge underdrain pumps. All grit that is removed is sent to either of two grit classifiers for washing using reuse plant effluent. We are utilizing no more than two raw sludge pumps to feed each cyclone degritter, as per plant O&M manual.

The subsequent processes are related to solids handling and the thermal conditioning system. Underdrain sludge from the wet storage tanks, which is about 4 to 5 percent solids concentration, is passed through grinders, then through a high-pressure pump, which is set to pump 85 to 90 gpm while maintaining a discharge pressure of 400 to 430 psi. At this point, compressed air, with a range of 400 to 430 psi and 215 scfm, is introduced prior to the sludge entering a heat exchanger. The heat exchanger maintains an inlet temperature of 240 to 300 degrees F and an outlet temperature of 300 to 340 degrees F. Sludge passes through the heat exchanger onto the reactor where steam is introduced maintaining a temperature of 360 - 370 degrees F, with a pressure of 410 to 430 psig. The sludge has an average detention time of about 25 minutes within the reactor, which allows it to become conditioned and biologically stable and hence improve the dewatering characteristics.

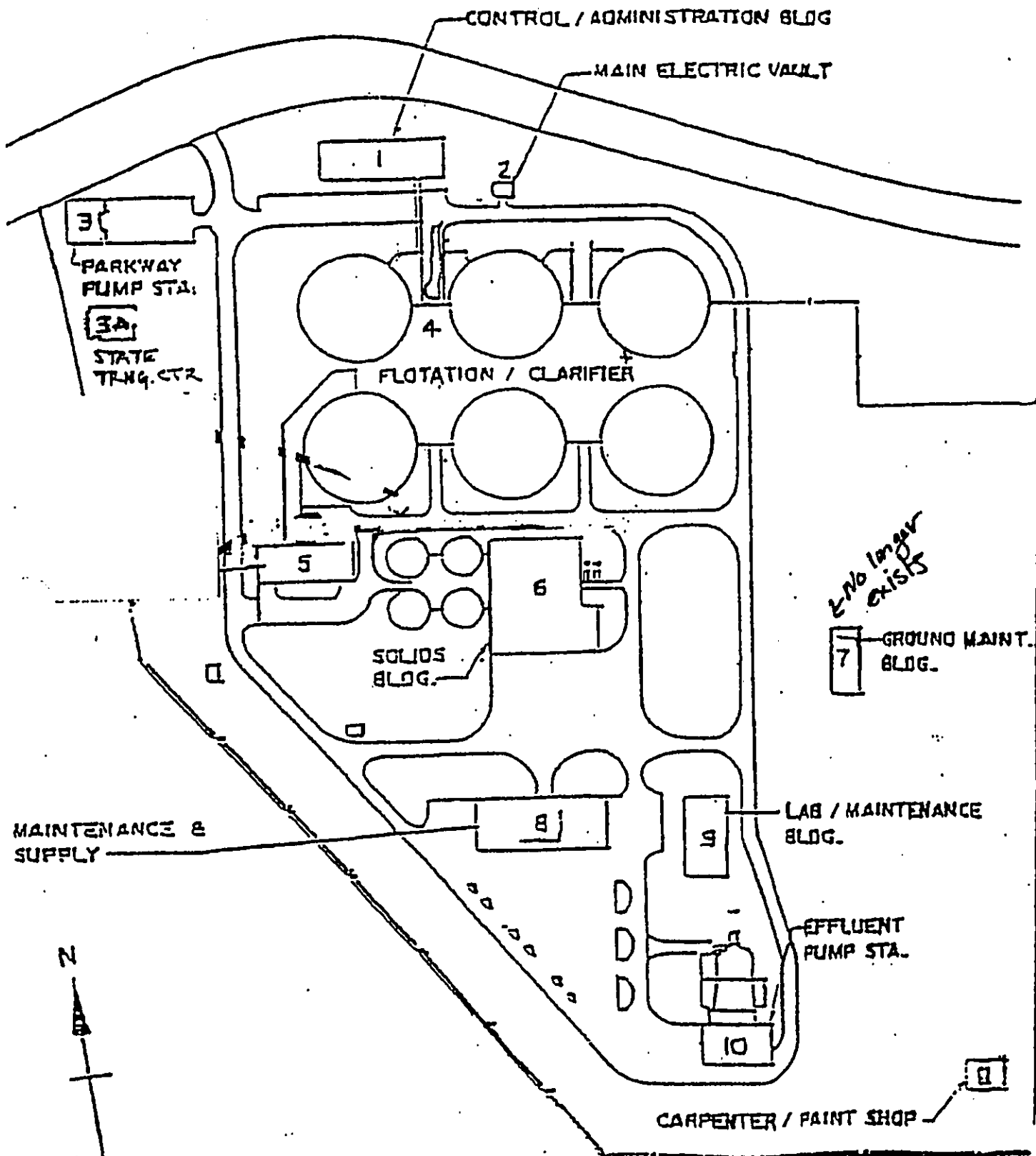
The heat-treated (Zimpro Thermal Oxidation Process) sludge is then sent to the sludge holding tanks and stored until it can be dewatered through centrifuge units, with the addition of cationic polyelectrolyte polymer. The supplemental addition of polymer is intended to minimize the organic strength of return flows or improve centrate quality. We are operating the heat treatment units based on the operating parameters recommended in the O & M manual.

The production of steam for the reactor begins with the softening of water for the boilers. Potable water is pumped through a Clayton dual water softener system, which allows for redundancy. The system has two sections: (1) the upper portion, which uses refined salt, and (2) the lower section, which contains brine. The number of gallons processed triggers the regeneration of this unit, which is capable of maintaining a continuous flow rate of 37 gpm, with a peak flow of 51 gpm. Once the water is softened it is pumped to the deaeration tank. Just before entering the deaeration tank it is mixed with a chemical treatment solution. The chemical treatment solution is mixed in a mixing tank before being pumped to the deaerator. The deaerator has a capacity of 330 gallons and rated at 18,000 lbs/hr. The deaerator

removes oxygen and increases the temperature of the boiler feed water to 212 degrees F. The makeup water then passes through the shell side of the external vent condenser and into the tubes of the external heat exchanger. Low-pressure steam from the boiler, which is about 230 degrees F, is introduced into the deaerator just above the water level through a spray bar assembly. This allows the 230 degrees F water to flash into steam; the deaerated water drops into a storage tank and is maintained at 212 degrees F. From there it is pumped to the boilers.

Effluent from the F/C tanks is screened prior to final disposal through the deep ocean outfall. Three traveling screens, capable of handling 19,000 gallons per minute, are used to remove any remaining floatable prior to the effluent fore bay. In the event that the liquid level rises above 14 ft. MSL in the effluent fore bay, effluent pumps will be brought on line to maintain a level less than 14 ft. elevation. There are three electric driven pumps, which are capable of each pumping 740 gpm. In the event these pumps are unable to maintain the effluent level less than 14 ft. elevation, three diesel driven pumps are available and capable of pumping 202 mgd.

SAND ISLAND WWT
NG NUMBER DESIGNATIONS



MAINTENANCE & SUPPLY



No lines exist

7 GROUND MAINT. BLDG.

9 LAB / MAINTENANCE BLDG.

10 EFFLUENT PUMP STA.

CARPENTER / PAINT SHOP

4 FLOTATION / CLARIFIER

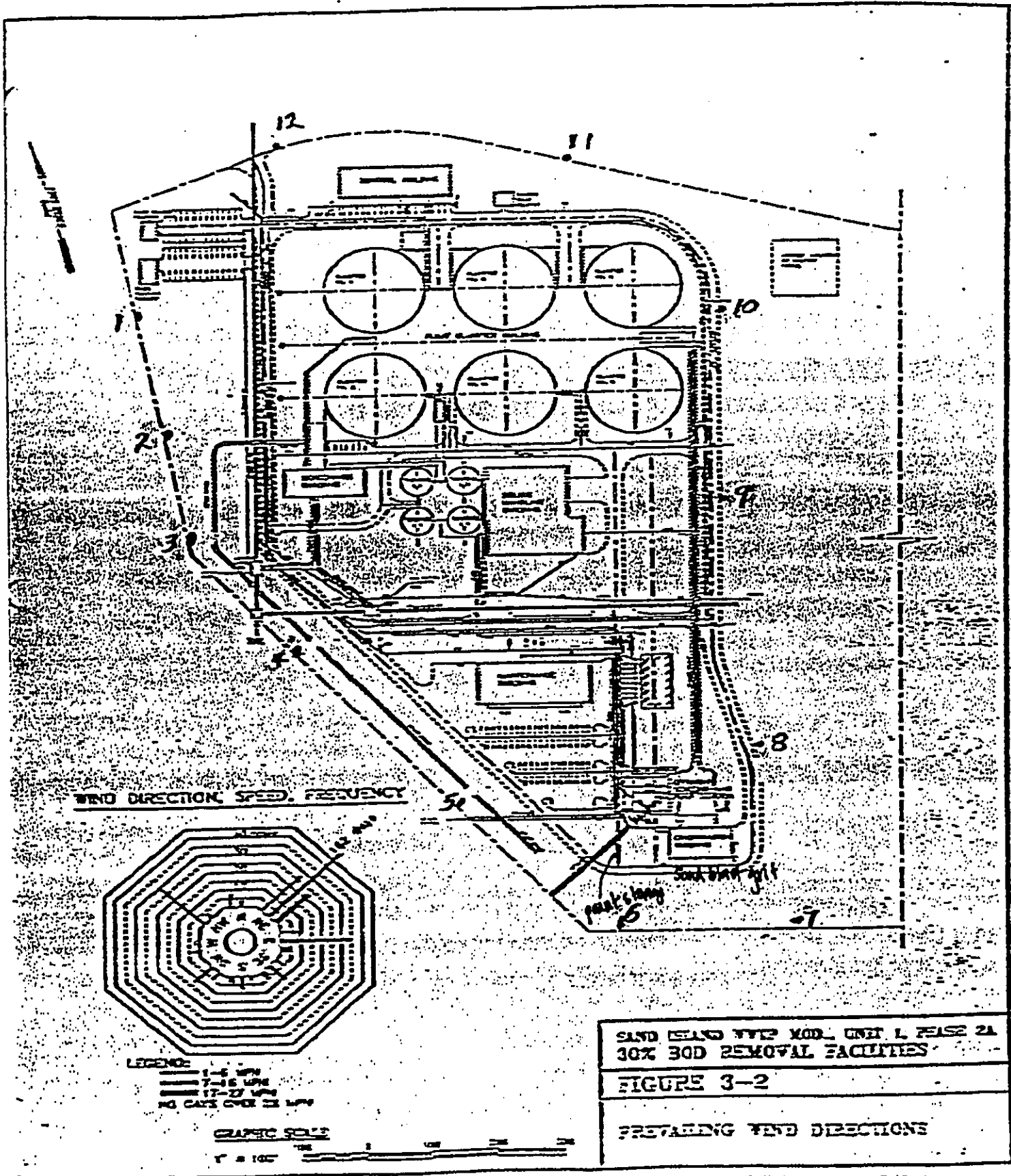
5 SOLIDS BLDG.

1 CONTROL / ADMINISTRATION BLDG

2 MAIN ELECTRIC VAULT

3 PARKWAY PUMP STA.

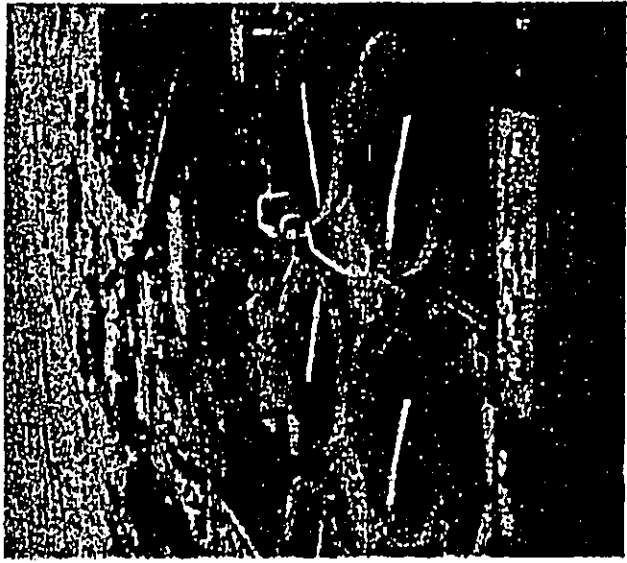
3A STATE TRNG. CTR.



My name Salas - Jt Supervisor



**SAND ISLAND
WASTEWATER TREATMENT PLANT**



**INFORMATION
GUIDE**

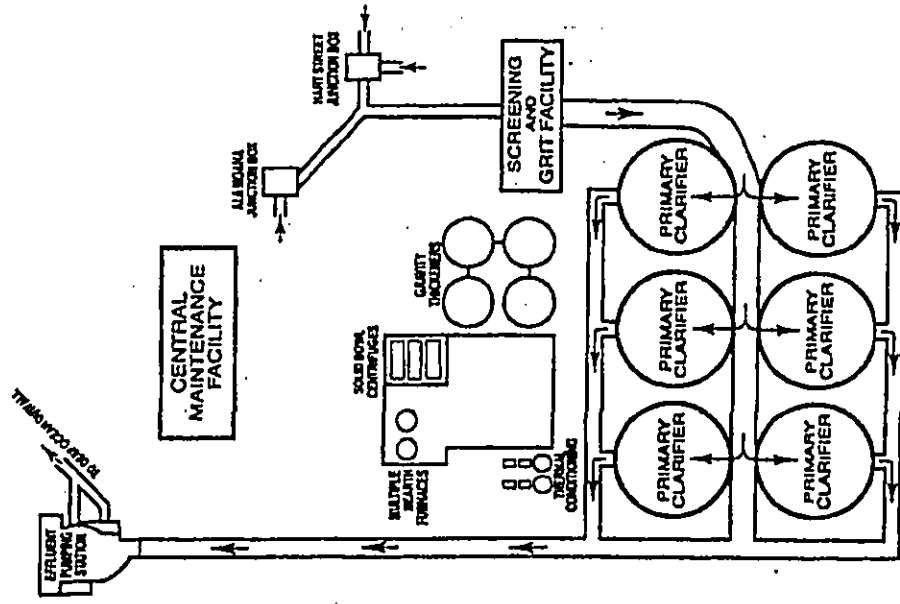
INFORMATION:
GENERAL PLANT & PROCESS DESCRIPTION
PLANT SCHEMATIC
PERTINENT DESIGN DATA

AUGUST 1986

CONSTRUCTION SUMMARY

INCREMENT	CONTRACT AMOUNT	COMMENCEMENT DATE	COMPLETION DATE	CONTRACTOR
1. Outfall	\$13.2 million	Feb. 1974	July 1975	Morrison-Knudsen
2. Phase I	5.1	Nov. 1975	Nov. 1976	Hood-Boocan
3. Phase II	44.0	Feb. 1979	Dec. 1979	Hawston Dredging
	\$64.3 million			

**SAND ISLAND WASTEWATER TREATMENT PLANT
PLANT SCHEMATIC**

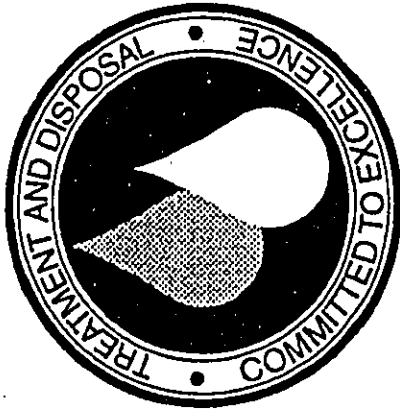


Welcome to the Sand Island Wastewater Treatment Plant.

This plant was designed to take the majority of the environmental pollutants out of liquid and solid wastes generated by residences and industries located in urban Honolulu and flushed into the sewer systems. The treated wastewater is then pumped 12,518 feet out into the ocean to a depth of 240 feet where it serves as a source of food for marine life.

Our wastewater treatment plants with their highly skilled operators are vital to maintaining the high quality of Honolulu's environment. As you tour this plant, I hope that you will develop an appreciation for the staff and technology which have played a very important role in protecting the health of our City residents and visitors.

Your guide will be happy to answer your questions and explain further the various wastewater treatment processes.



GENERAL PLANT AND PROCESS DESCRIPTION

INTRODUCTION

The Sand Island Wastewater Treatment Plant treats domestic and industrial wastewater from a tributary area extending from Moanua Valley to Kuliouou Valley. The wastewater is pumped to the plant via three major wastewater pump stations, the Ala Moana Wastewater Pump Station, Hart Street Wastewater Pump Station, and U.S. Army Wastewater Pump Station at Shafter Flats. The plant is designed to treat an average flow of 82 million gallons per day. The present average daily flow to the plant is approximately 72 million gallons.

Prior to the construction of the Sand Island Wastewater Treatment Plant, raw wastewater from the tributary area was discharged via a 78-inch diameter outfall, 3,000 feet offshore, to a depth of 40 feet.

Today, influent wastewater is screened through mechanical bar screens and treated by primary sedimentation. The solids removed in the primary clarifiers are further processed by: cyclonic "dewatering", gravity thickening, thermal conditioning, centrifugation, and incineration. The effluent from the plant is discharged either by gravity or pumping via an 84-inch diameter outfall, 13,900 feet in length, to a depth of 240 feet. The Sand Island Wastewater Treatment Plant outfall is one of the deepest ocean outfalls in the world.

Because of its location (close to proposed recreational areas; downtown Honolulu; heavily traveled tourist routes), odor control was a prime design criterion. This is evident by the extensive odor treatment equipment in use.

Headworks Facility

Mechanical bar screens remove large pieces of solids (screenings) that are present in the raw wastewater. The screenings are discharged to a conveyor belt which directs the screenings to a storage bin for direct landfill disposal.

Primary Sedimentation

Screened wastewater flows by gravity into the clarifiers. Because of the reduced velocity and quiescent conditions, the solids settle by gravity to the bottom of the clarifiers and the lighter materials, such as grease, oil, etc., float to the surface.

The settled and float materials are removed from the clarifiers by a common motor driven sludge collector mechanism and a float skimmer mechanism, respectively. These mechanisms collect and deposit the solids into their respective hoppers, where the solids are then removed by pumping.

The solids which have settled in the clarifiers are pumped to the cyclone dewaterers for grit removal. The float materials are pumped to the solids handling facility where they are concentrated in the gravity thickeners.

The primary clarifier is designed to remove approximately 65% of the suspended solids and approximately 35% of the BOD₅.

The primary treated wastewater flows by gravity to the effluent pump station.

Effluent Pumping

The treated wastewater is discharged by gravity or by pumping, depending on flow conditions. The gravity discharge system flows through a motor operated modulating valve which maintains a preselected wastewater level in the forebay. The maximum discharge by gravity is approximately 90 MGD. Effluent pumping is by three 54-inch centrifugal pumps. These pumps can be driven by either electric motors or diesel engines. The maximum pumping capacity utilizing diesel engine drive is approximately 200 MGD.

Cyclone Dewaterers and Gravity Thickeners

Sludge from the clarifiers is pumped through cyclonic dewaterers which utilize centrifugal force to separate grit from the liquid and other settleable solids. The grit is then classified, collected and directed either to a storage bin for direct landfill disposal. The remaining solids in the stream flow by gravity to sludge gravity thickeners where the solids are concentrated by gravity sedimentation. The overflow from the thickeners is directed to the headworks facility.

Thermal Conditioning

The thermal conditioning units receive thickened sludge and elevate the temperature and pressure of the sludge to 380°F and 330 psi, respectively. Under these conditions, the sludge is sterilized and partially oxidized. This process eliminates the use of chemicals, normally required for dewatering.

Centrifugation

Centrifuges receive conditioned sludge from the thermal conditioning units and increase the solids content of the sludge. This is accomplished by utilizing centrifugal forces to separate the denser solids from the flow stream. As the sludge "cake" exits the centrifuge, it is conveyed to the top of the incinerator and dropped into either hearth numbers one, two, three or four, depending on the characteristics of sludge being burnt. The "cake" may also be trucked directly to a sanitary landfill. The centrate flow is directed to the headworks of the plant.

Multiple Hearth Incineration

Incinerators are utilized to reduce the volume of the sludge "cake". The ash produced in this process is trucked to a sanitary landfill. The exhaust gases from the incinerator are recycled to generate steam for the thermal conditioning process.

PERTINENT DESIGN DATA
GENERAL

Population 451
 In thousands 451
 Flow
 Average dry weather, MGD 75
 Average daily design flow, MGD 82
 Peak dry weather, MGD 89
 Peak wet weather, MGD 173
 Loadings
 Biochemical oxygen demand, 1,000 lbs/day 94
 Suspended solids, 1,000 lbs/day 79
 Grease, 1,000 lbs/day 44.4
 Grit, ft³/day 280
 Screenings, ft³/day 210
 Influent Sewers
 Ala Moana force main
 Diameter, inches 60
 Area, ft² 19.6
 Hart Street force main
 Diameter, inches 48
 Area, ft² 12.6
 Army force main
 Diameter, inches 24
 Area, ft² 3.14

PRELIMINARY TREATMENT

Screenings
 Bar Screens
 Number 4
 Bar thickness, inches 3/8
 Channel width, feet 6
 Opening between bars, inches 1
 Max. screen approach velocity, ft/sec 3.5
 Degritting Cyclones
 Number 4
 Capacity @ 10 PSI, each, GPM 500
 Unit size, inches 18
 Classifiers
 Number 2
 Length, feet 15
 Average removal of grit, yd³/day 9
 Maximum hourly removal of grit, yd³/hour 2.2

PRIMARY TREATMENT

Primary Clarifier tanks
 Number 6
 Diameter, feet
 Clarifier 150
 Average side water depth, feet
 Clarifier 12

Detention time, hours (average flow plus recycle)
 Total tank 2.12
 Overflow rate, gal/ft² (average flow plus recycle)
 Total tank 1,100
 Maximum hydraulic capacity, each, MGD 28.8
 Raw sludge pumps
 Number 12
 Capacity, each, gal/min 250
 Primary treatment
 Assumed BOD₅ reduction, per cent 30
 BOD₅ reduction, 1,000 lbs/day 28.2
 Assumed suspended solids reduction, per cent 60
 Suspended solids reduction, 1,000 lbs/day 47.4

EFFLUENT PUMPING & CHLORINATION

Effluent Control Valve (Gravity Flow)
 Number (outlet type) 1
 Size, inches 72
 Maximum flow, MGD 90
 Effluent Pumps
 Number 3
 Discharge diameter, inches 54
 Characteristics (each pump)
 Maximum discharge
 Capacity, MGD 102
 Total head, feet 16
 Design head
 Capacity, MGD 87
 Total head, ft 29
 Chlorination
 Process water disinfection
 Number of evaporator-chlorinator 1
 Capacity range, each, lbs/day 500
 Effluent disinfection and prechlorination
 Number of evaporator-chlorinator units 6
 Capacity range, each, lbs/day 8,000

OUTFALL DATA

Outfall
 Number 1
 Land portion
 Length, feet 1,452
 Diameter, inches 84
 Submarine portion
 Length, feet 12,518
 Diameter, inches 84, 66, 48
 Depth at diffuser, feet below mean sea level 225 to 243
 Number of diffuser 282
 Diameter of diffuser ports, inches 3.53, 3.34, 3.18, 3.00

SLUDGE THICKENING

Gravity Thickening Tanks
 Number 4
 Diameter, feet 50

Maximum side water depth, feet 10
 Maximum overflow rate, gal/day/ft² 660
 Maximum centerwell velocity, ft/min 4.8
 Max. 29.7
 Solids loading, lbs/ft²/day Average 15.6
 Sludge pumps
 Number 4
 Capacity, each GPM 35 to 110

THERMAL CONDITIONING

Heat Treatment Units
 Number 2
 Capacity, each, gal/hr 5,000
 Average loading, each, gal/hr 3,100
 Volume required for 5 day storage, ft³ 36,750
 Number of storage tanks 4
 Effective storage volume, each, ft³ 10,550
 High Pressure Pumps
 Number 3
 Capacity, each, gal/min 85
 Hydraulic Bog Pump
 Capacity, gal/min 1
 110

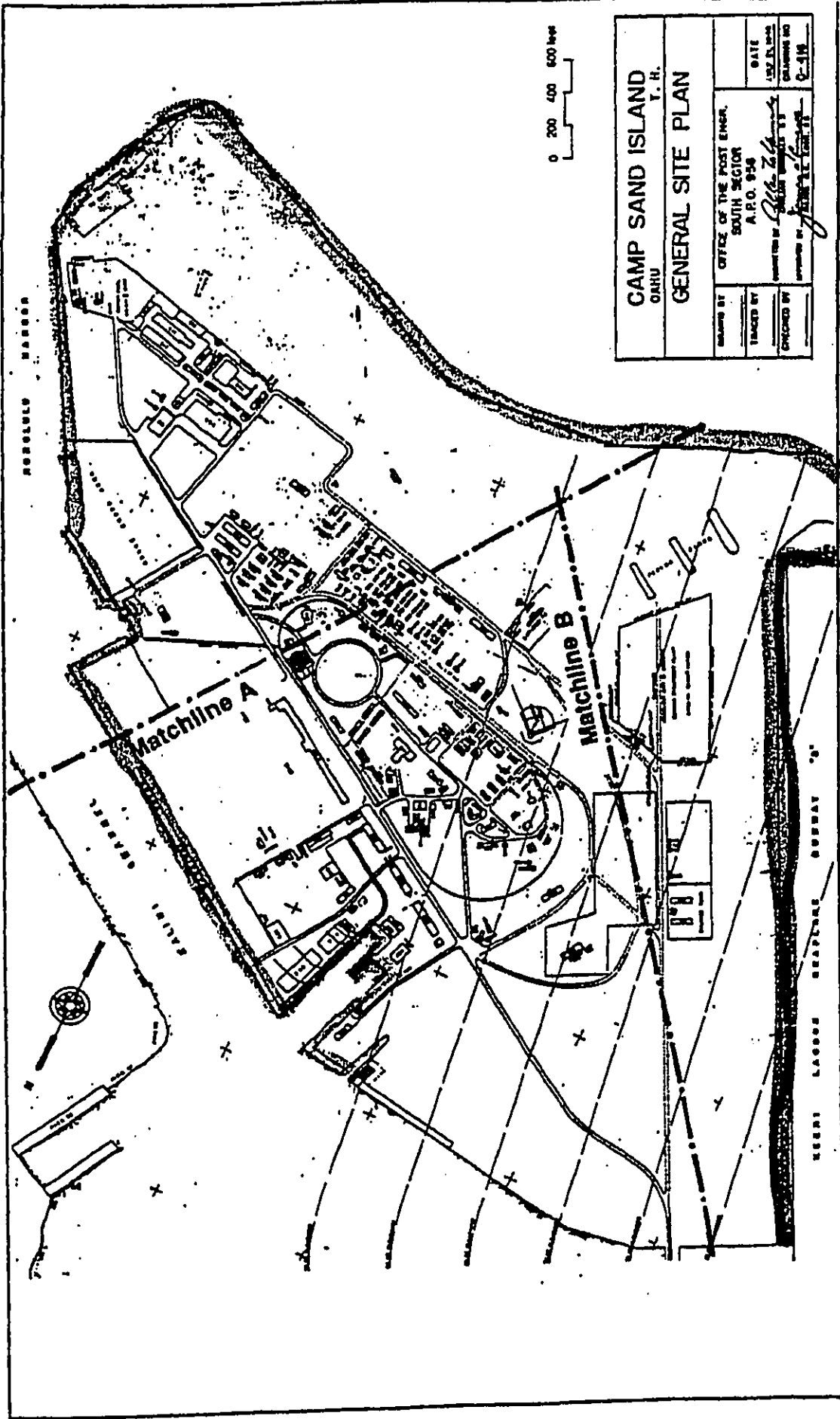
SLUDGE INCINERATION

Multiple Hearth Furnace
 Number 2
 Inside diameter, feet 16.5
 Number of hearths 9
 Total hearth area, each furnace, ft² 1,591
 Wet solids loading, lb/hr/ft² (includes sludge, grit screenings)
 (One unit in operation) average 5.5
 Volatile solids loading, lb/hr/ft²
 (includes sludge, grit & screenings)
 (One unit in operation) average 1.1

SLUDGE DEWATERING

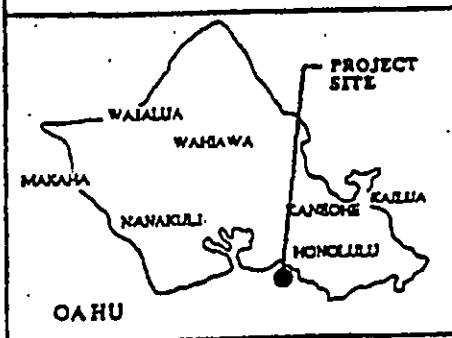
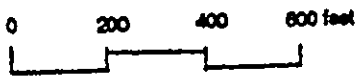
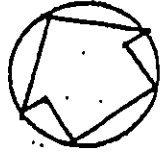
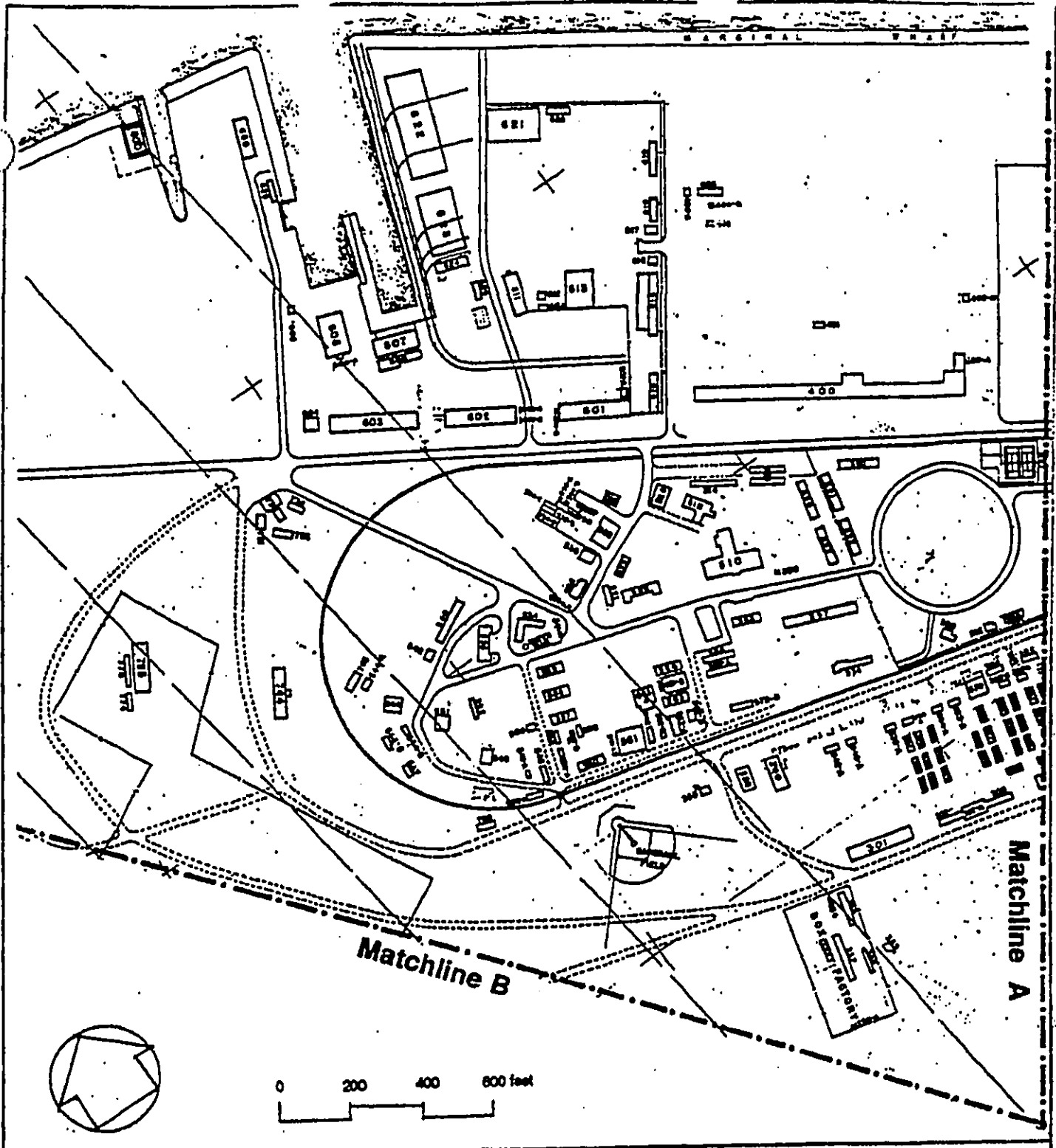
Centrifuges
 Number 3
 Capacity, each, gal/min
 Maximum 80
 Average 45 to 65
 Solids loading, each, lb/hr
 (Two units in operation) maximum 1,950
 (One unit in operation) average 2,050
 Centrifuge feed pumps
 Number 3
 Capacity, each, gal/min 35 to 80

Division of Inebment and Disposal
 Department of Inebment Management
 City and County of Honolulu
 Revised August 1976
 Printed by O.L.C. Printing Services



CAMP SAND ISLAND OAHU T. H.	
GENERAL SITE PLAN	
DESIGNED BY OFFICE OF THE POST ENGR. SOUTH SECTOR A.P.O. 956	DATE 1952.11.10
DRAWN BY <i>[Signature]</i>	CHECKED BY <i>[Signature]</i>
APPROVED BY <i>[Signature]</i>	SCALE AS SHOWN ON DRAWING NO. C-419

<p>PROJECT SITE</p> <p>MAUI KAHOOLAWE LANAI MOLOKAI OAHU HAWAII</p>	<p>Prepared for:</p> <p>U.S. Army Engineer District Pacific Ocean Division Fort Shafter, Hawaii</p> <p>Prepared by:</p> <p>Wil Chee - Planning</p>	<p>DERP - FUDS Inventory Project Report</p> <p>Sand Island Military Reservation Sand Island, Island of Oahu Hawaii</p> <p>Site No. H09HI032400</p> <p>Figure 3</p>
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Prepared for:
 U.S. Army Engineer District
 Pacific Ocean Division
 Fort Shafter, Hawaii

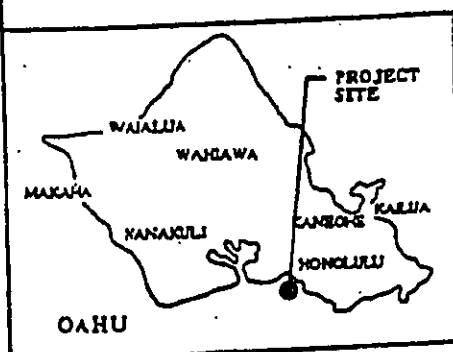
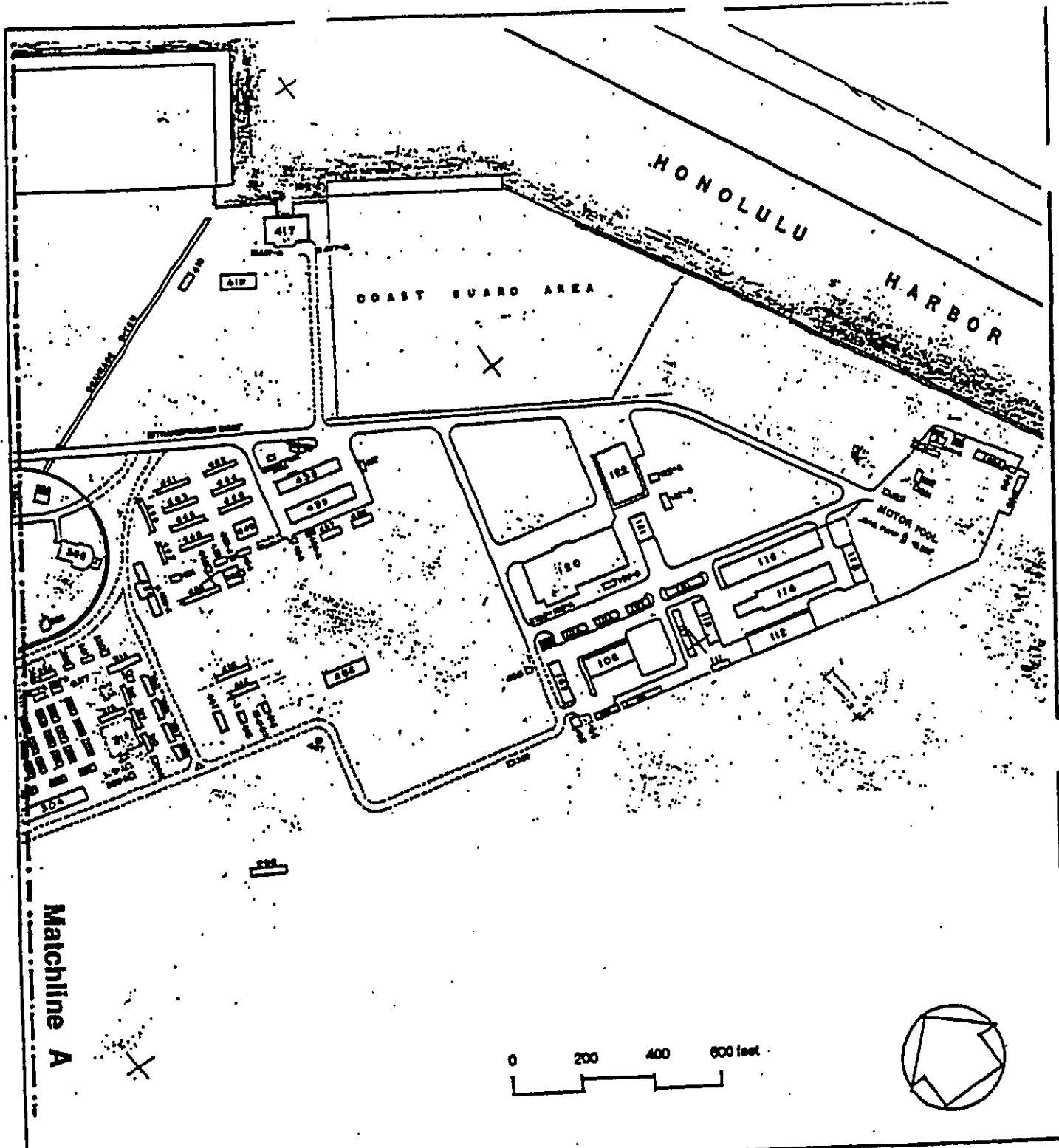
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Sand Island Military Reservation
 Sand Island, Island of Oahu
 Hawaii

Site No. H09HI032400

Figure 4



Prepared for:
 U.S. Army Engineer District
 Pacific Ocean Division
 Fort Shafer, Hawaii

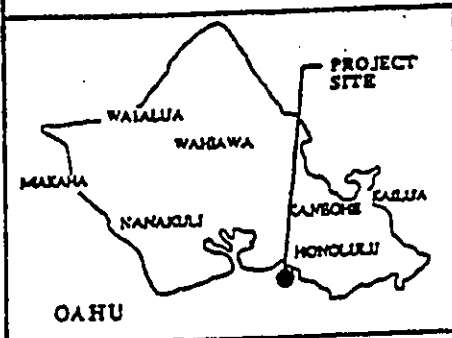
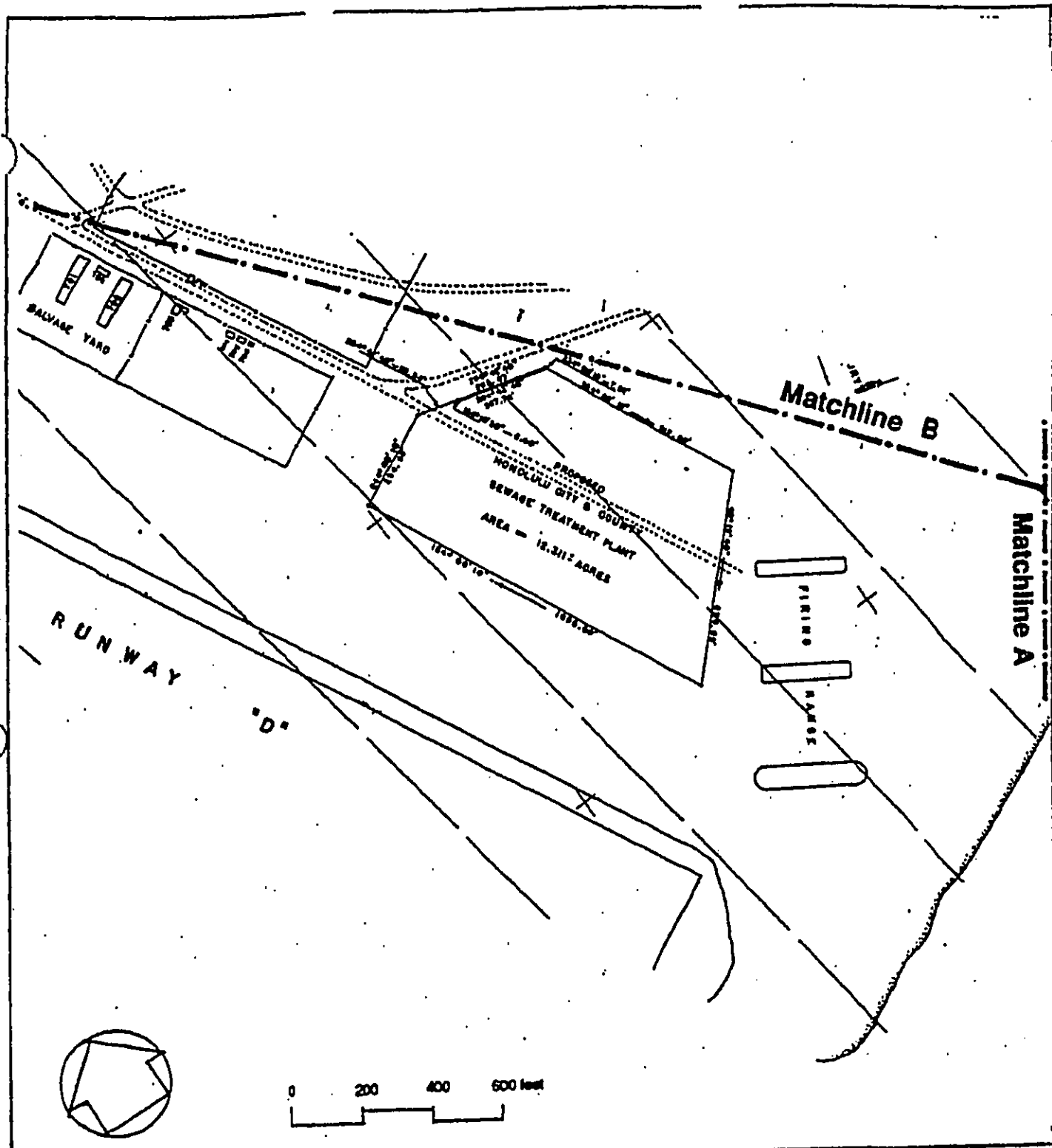
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Sand Island Military Reservation
 Sand Island, Island of Oahu
 Hawaii

Site No. HC9HI032400

Figure 5



Prepared for:
 U.S. Army Engineer District
 Pacific Ocean Division
 Fort Shafter, Hawaii

Prepared by:
 Wil Chee - Planning

DERP - FUDS Inventory Project Report

Sand Island Military Reservation
 Sand Island, Island of Oahu
 Hawaii

Site No. H09HI032400

Figure 6

Reference?
Parks Division

(18)

APPENDIX A
A HISTORY OF SAND ISLAND,
OAHU, HAWAII (1825-1966)

Sand Island, also known as Anuenue Island or Quarantine Island, is a low, level land area on the southern coast of the island of Oahu, facing Mamala Bay. The island lies between the Honolulu Harbor and Kalihi Channels. Its approximate longitude and latitude is $157^{\circ} 54' 27''$ to $157^{\circ} 52' 51''$ - $21^{\circ} 18' 5''$ to $21^{\circ} 19' 1''$ (U.S. Coast and Geodetic Survey, 1972).

In 1825, the location consisted of a reef platform which extended seaward to the approximate seaward boundary of the current Sand Island. On the Ewa (westerly) side, this reef platform was bounded by a cut through the fringing reef which has been developed into the Kalihi Channel and which was probably caused by fresh water from the Kalihi and Kahauiki Streams. On the Diamond Head (easterly) side, the reef platform was bounded by a cut through the fringing reef resulting from the fresh water run-off of the Nuuanu Stream. This cut has been developed into the entrance channel to Honolulu Harbor (Paradise of the Pacific, 1898; U.S. Army Corps of Engineers, 1918; The Propellor Club of the United States, 1967).

The seaward portion of the reef was covered by water at half-flood tide but was dry at low tide. During low tide, it was recorded that

"the lower orders of the natives get from it a considerable part of their daily subsistence, consisting of small fish, left in ponds, crabs, shell fish, etc." (Malden, 1825). The interior portion of the reef was protected from the surf by rocks. This area, reportedly, was never quite dry, and during high tides, canoes plyed back and forth as far as Pearl Locks. Two dry land areas existed on the reef, both on the Ewa (westerly) side. The mauka (closest to shore) area was called Sandy Island. The makai (seaward) area was called Hut Island (Malden, 1825).

In 1840, William Sumner, a seafaring man was granted a farmland to the west of Honolulu known as Kahaohao (Coll, 1937) by King Kamehameha III in recognition of services. This grant was confirmed by Land Claim 153, Land Commission, 1849. Seaward of this farm, Sumner was granted a fishery on the 647 Diamond Head acres of the reef lying between the Kalihi and Honolulu Harbor Channels. This area carried the Hawaiian name of Kaholaloa (Kahololoa, Kaholoa) (Alexander, 1885).

The Ewa portion of this reef was designated Mokauea. In both portions there were small islands of varying sizes, shapes and elevation (Alexander, 1885). By 1856, Sumner's plot was registered under the names William and John Sumner (Alexander, 1908).

Construction of the first lighthouse in the Hawaiian Islands started in 1858. It was located in the neck of the Honolulu Harbor Channel, just off the reef of Kaholaloa. This light operated intermittently until 1869

when it went into regular operation (Honolulu Star Bulletin, 1934).

In December 1868, the vessel "Idaho" arrived from San Francisco with a pantry boy ill from small pox. The quarantining of the "Idaho" was inept, to say the least. Crew members and cabin class passengers were allowed ashore in Honolulu although they were probably the most exposed to the disease. Unloading of the vessel was permitted with stevedoring crews allowed on and off without disinfecting procedures being employed. Fifteen people, including the pantry boy, one other ill passenger and all steerage passengers (who were probably the least exposed) were put ashore on the reef of Kaholaloa. The public furor that followed this incident was so great that, in February 1869, King Kamehameha III's government leased the island of Kamokuakulikuli, which was a small sand spit on the reef of Kaholaloa, for use as a quarantine detention post. Quarantine criteria in those days appears to have been thus: if a vessel arrived in the islands after having been at sea 15 days with no sickness worse than mal-de-mer aboard, she was considered uncontaminated and debarking and unloading could commence immediately; if the vessel had not been at sea 15 days, or if a contagious disease was aboard, quarantine and disinfecting procedures had to be initiated (Pacific Commercial Advertiser, A, B, C, 1869).

By 1885, Kamokuakulikuli Island was titled the "Quarantine Ground". It consisted of an irregular patch of ground about 2' above sea level with several buildings erected on it. One of these was

designated the small pox hospital.

Along the Honolulu Harbor side of the reef of Kahaloloa was the lighthouse, Sumner's house and a cattle wharf (see Map 1) (Alexander, 1885). The surface of the reef platform was described as mud and stones, and uncovered at low water (U.S. Hydrographic Office, 1882). Landward of the reef was a series of fish ponds, some of which, such as Kapalama and Iwilei, have given their names to sections of modern Honolulu (Alexander, 1885).

By 1888, Kamokuakulikuli Island was known as "Quarantine Island". The land area had increased but was still of irregular shape. A pier and tramway connected the island with Honolulu Harbor. A ford for carriages connected the island to the City of Honolulu, crossing what is now the inner harbor (turning basin) which at that time was partially dry at low water (U.S. Hydrographic Office, 1888).

In 1890, a new lighthouse was built along the edge of the reef of Kahololoa, replacing the one built in 1858. In the new lighthouse, the light was 26' above water level (Honolulu Star Bulletin, 1934).

In 1901, a marine hospital was established by the U.S. Public Health Service on Quarantine Island. This hospital continued in operation until the quarantine area was taken over by the Army in December 1941 (The Propellor Club of the United States, 1967).

In 1902, title to 550 acres of land including Quarantine Island and the Kahololoa section of the reef passed to the United States government

(Coll, 1937; Thrum, 1915). This was the result of an agreement between the United States, the Oahu Railway and Land Company, and the Dowsett Estate Company (possibly Land Patent #8150). This agreement designated the area known as the "Reserved Channel" (Thrum, 1915). At the time the title passed, Quarantine Island reportedly measured only two acres (The Pacific Commercial Advertiser, 1911).

Prior to 1 July 1904, all harbor construction had been performed by the monarchial, republican or territorial governments of Hawaii. By 1904, a 200' wide channel with a depth of 35', a harbor of 64 acres with a general width of 800', a minimum depth of 27', and a length of 3,500' had been developed (Corps of Engineers, 1935). Most or all of the spoils from dredging had been used to develop the Diamond Head or mauka sides of the harbor.

The first Congressional authorization for improvement of Honolulu Harbor was contained in Act 3, March 1905. This authorized a channel entrance 35' deep and 400' wide, deepening of the inner harbor to 35' with a general width of 1,200', and easing the curve where the entrance channel joins the inner harbor by cutting off Lighthouse Point on Sand Island (U.S. War Department, 1905).

Concurrent with these harbor improvements came the filling of Quarantine Island. The development of its oval shape of approximately 50 acres was completed in Fiscal Year 1906. The filled oval was surrounded by a 3' high reinforced concrete retaining wall. The land

was graded from 3' high at the wall to about 6' along the central ridge. The fill was spoils provided by a hydraulic dredge.

By 1907, a causeway connected the island to a quarantine wharf along Honolulu Harbor. A structure still designated as Sumner's stood inland along the Honolulu Harbor side of the reef. Reclaimed land was starting to appear adjacent to Honolulu. A strip of reclaimed land appeared southeast of Quarantine Island but separated from it on the Honolulu Harbor edge of the reef. The remainder of the reef was reportedly composed of mud and stones and was dry at low water (see Map 2 and U. S. Coast and Geodetic Survey, 1907).

By 1908, the Quarantine Station consisted of two major areas; one, Quarantine Island, and two, the Quarantine Wharf. It was the largest United States quarantine station in service at that time, and could accommodate 2,255 persons with ample room for expansion through use of a tent camp. Quarantine Island was divided into five functional areas: an administrative area at the Diamond Head end, a saloon or cabin class passenger area in the middle, an European steerage area, an Oriental area, and the Army tent camp. The latter three were all at the Ewa end adjacent to space available for erecting additional tents if needed (U. S. Public Health and Marine Hospital Service, 1909; the Pacific Commercial Advertiser, 1911).

At that time, there were 39 buildings on Quarantine Island. Support buildings consisted of a two story administration building, the

pharmacist's cottage, attendant's quarters, pilot's and engineer's quarters, and quarters for the Chinese attendants and Japanese laborers. Two hospitals existed; a contagious unit with 14 beds plus 3 isolation wards with 2 beds each, and a non-contagious unit with 4 beds. There was also a crematorium. Cabin class quarters accommodated 75 passengers and contained a kitchen and dining room. The Oriental barracks could accommodate 600 and also had cooking facilities. European steerage passengers could be accommodated in three barracks, each billeting 100 passengers. The camp for troops consisted of 100 raised tent platforms 14' by 15', intended to fit a regulation Army hospital tent. This camp could accommodate 1,250 troops.

An 8' wide causeway connected the station to the quarantine wharf on the edge of Honolulu Harbor. A runway was built above the causeway on concrete piers. This was about a half mile long, and on it a 30" gauge track was laid. Six cars operated on this railroad.

The quarantine wharf was 310' long and 80' wide. At the north end of the wharf, a slip was provided for the quarantine launch "Oahu", and this also served as a boat landing. On the west side of this slip was a large storeroom and workshop; on the east side, a two story building with an office for the pilot and engineer on the second floor, and on the first floor dormitories for the firemen and deck hands. At the southern end of the wharf, three tanks were mounted. They were a fresh water tank, a salt water tank, and a tank for a mercury bichloride solution.

A pipe from this latter tank lay across the entire front of the wharf with fittings to which rubber hoses could be connected for ship decontamination.

On the wharf there was a quarantine shed 150' long and 60' wide with an iron roof. The shed was divided into the receiving room, disinfecting room, undressing room, bathroom, and waiting room. All steerage passengers, upon landing, were taken with their baggage to the receiving room. The men were segregated from the women and children, and all were separated from their baggage. The men were first taken to the undressing room where each man received a numbered sack and a tag with a corresponding number. The attendants saw that each man took off and sacked his clothes and hung the tag around his neck. The men then passed to the bathroom, 32 at a time. The bathroom was arranged in the shape of a "U". Two gates at the legs of the "U" gave entrance and a gate at the top provided exit. The floor was a zinc lined "V" shaped chute. Overhead, a 3" pipe was tapped for 32 salt water showers. "Salt water is used entirely for bathing purposes and is here ideal for the purpose, because it is not only mildly antiseptic, but in this climate its temperature is never below 65°F, and, in fact, is always warmer than tap water." The chute was 4'6" high and on either side at 4' height were 1½" pipes pierced at 6" intervals for a lateral spray. Drainage was through the wharf floor. When in use, the spray was turned on and off to allow each person to soap themselves.

The water was then turned on to wash the soap off. Five minutes was sufficient for each group; 348 persons could be bathed in an hour.

While the passengers were showering, the clothes bags were placed in a steam chamber at 240° F. for a half hour. The passengers were given a towel and kimono, and their clothing was returned to them in the waiting room. Umbrellas, hats, shoes, and such articles which could not be passed through the steam chamber without injury were treated separately with a formaldehyde gas. The women and children followed the men through the showers. Upon completion of the processing, passengers were transported to Quarantine Island. The ship's crew and steerage baggage followed and were similarly treated. The vessel's interior was fumigated with sulphur and the decks were washed down with bichloride solution. (U. S. Public Health and Marine Hospital Service, 1909)

A new concrete lighthouse, built by the U. S. Lighthouse Service, was commissioned in February 1910. It was in approximately the same location as the 1890 lighthouse which was demolished. The new light was 39' above water level (Honolulu Star Bulletin, 1934).

The mission of the Quarantine Station at the end of June 1910 was fourfold: quarantine, plague preventive measures, immigration inspection, and marine-hospital relief. Although the tentage area still permitted expansion, the number of persons that could be accommodated in barracks was reduced to 1,955 individuals.

As an example of the annual activity of the Quarantine Station 10 vessels suspected of carrying contagious diseases arrived in Honolulu from 1 July 1909 to 30 June 1910. The steamer "Korea", from the Orient, had a suspected case of plague in steerage. The steerage passengers for Honolulu were held at the Quarantine Station for seven days, and the usual disinfecting procedures were performed. Subsequently, the suspected organism proved not to be plague. The U.S.N. cruiser "Washington" arrived with two cases of small pox among the crew. The two sick men and two corpsmen were transferred to the station isolation wards. One of the small pox victims died. The steamer "Makura" arrived from Australia with a case of small pox in steerage. Because the case had not been properly isolated aboard ship, it was necessary to quarantine the second class passengers as well as the steerage passengers for 14 days. The vessel was held at the Quarantine Wharf. No new cases of small pox broke out and the "Makura" sailed for Vancouver on the 15th day. The "Tamon Maru" from Japan via the Ocean and Pleasant Islands had a death at sea. The body had been thrown overboard, but cholera was suspected. On the day of arrival, two seamen fell sick, and one seaman had diarrhea. The three sick seamen were moved to isolation wards, the ship was disinfected and then anchored well outside the harbor with all on board for 5 days. The steamer "Mongolia" arrived from the Orient with a case of small pox in steerage. The case had been properly isolated,

so the "Mongolia" was taken to the Quarantine Wharf and the patient to the isolation ward. Three hundred ninety-six passengers and their effects, as well as considerable bedding, were transferred to the wharf for disinfecting. The passengers were held overnight while their quarters on the steamer were disinfected. The next morning, the continuing passengers were put on board and the "Mongolia" sailed. In the spring of 1910, the "Mongolia" arrived again from the Orient with a history of chicken pox and small pox among its passengers. The ship was held in quarantine for 3 days, but was released when no new cases developed. The "Albatross" arrived from Yokohama with one crew member down with small pox and another suspiciously sick. Both were removed to isolation wards, the ship quarantined, the crew vaccinated and the ship was then allowed to depart. The "Nippon Maru" arrived from the Orient with 233 passengers for Honolulu, including 121 Russians. Four days after arrival, 3 cases of plague were discovered among the Russians at the immigration station. With the help of the Board of Health, all the Russians and Filipinos arriving on the "Nippon Maru" were rounded up and taken to the quarantine station. One plague case died. The other passengers, after being detained 9 days, were released (U. S. Public Health and Marine Hospital Service, 1911). Statistics for the activity of the station from 1907 to 1915 are presented in Table I.

TABLE I

ACTIVITY OF HONOLULU QUARANTINE STATION
IN FISCAL YEARS

Years	1907	1908	1909	1910	1911	1912	1913	1914	1915
1. Vessels Inspected	366	379	433	324	510	379	418	402	450
2. Passengers Inspected	54,447	56,519	49,049	48,364		78,477	80,741	76,134	77,703
3. Crew Inspected	37,524	38,562	67,729	68,373	134,614	49,407	33,816	58,943	60,536
4. Passengers detained in Quarantine for Observation	4,326	2,695	5	674	1,448	2,175	1,199	290	---
5. Passengers with Quarant- inable Diseases	19	6	---	16	24	38	1	3	3
6. Persons Bathed	n/a	n/a	n/a	n/a	n/a	3,230	1,463	495	n/a
7. Pieces of Baggage Disinfected	3,919	3,465	1,782	6,891	7,817	6,647	2,451	495	n/a

NOTE: In a few instances in Lines 1, 2 and 3, figures show activity for the entire Territory of Hawaii, but in most cases, they represent activity confined to Honolulu.

SOURCE: Annual Reports of Surgeon General of the United States for Indicated Years.

By 1911, the quarantine station had a recreational area for cabin class passengers including a track which enclosed a baseball field and tennis courts, and electricity had been provided the island (the Pacific Commercial Advertiser, 1911).

The need for the military detention camp in conjunction with the quarantine station was obviated in 1915 with the establishment of a quarantine camp at Schofield Barracks. Military personnel arriving on practically every transport that year had been exposed to measles and mumps (Addieman, n. d.).

The quarantine wharf was dismantled and removed in 1916 (U. S. Public Health Service, 1918).

By Congressional Act 8, August 1917, the Act of 1905 was amended to authorize the dredging of an area 35' deep, 800' wide, 1,000' long, along the Reserved Channel (Corps of Engineers, 1918).

As of 1919, 57 structures were reported on Quarantine Island. (See Table II.) The island was divided into areas. The Diamond Head end, including the executive building, surgeon's quarters, 4 other quarters, the bath house, hospital and isolation wards, was fenced off from the rest of the island. The European steerage quarters were fenced off from the other areas and were separated as well from the Oriental steerage quarters by a large open air dining hall. A road, lying between what are now Piers 28 and 29, replacing the carriage ford, connected the Diamond Head end of the island with the City of Honolulu.

TABLE II
STRUCTURES ON QUARANTINE ISLAND AS OF 1919

One story executive building
Staff quarters
One long building with kitchen and dining room
for 1st class passengers
3 isolation wards
4 buildings for European steerage passengers
8 buildings for other cabin and steerage passengers
60' by 10' salt water swimming pool
Latrine for military personnel
Laundry building
Bath house
Crematorium
Water tank
Fire hose house
Carpenter and machine shop
Paint shop
Store room
Garage
Stable
Pump house
Blacksmith shop
Lumber storage

SOURCE: Honolulu Advertiser, 1919.

Groves of Australian ironwood trees had been planted and were flourishing in place of kiawe trees which had been cut down (Honolulu Advertiser, 1919).

President Woodrow Wilson, by Executive Order 3358, set aside the bulk land known as Sand Island and Quarantine Island for military purposes under the control of the War Department (Wilson, 1920). As of November 24, 1920, Sand Island was entered on the rolls of military installations in the Territory of Hawaii (U.S. Army Support Command, Hawaii, n. d.).

Although Sand Island had been placed on the Army's rolls of installations, the Surgeon General apparently appealed the Executive Order. He claimed these lands, mostly covered by water at high tide surrounding both the quarantine wharf and the detention barracks, constituted an integral part of the Quarantine Station. The loss of these lands would affect both proper isolation and the handling of infected vessels. In January 1923, the Attorney General of the United States confirmed the War Department's jurisdiction over these lands previously controlled and occupied by the Public Health Service (U.S. Public Health Service, 1923).

In 1925 and 1926, when private interests, in order to handle fresh pineapple, dredged two channels 100' wide, 20' deep, and 2,800' long, first on the mauka side of Kalihi Channel into Kapalama Basin, and second, from Honolulu Harbor into Kapalama Basin, Sand Island was,

for the first time, completely surrounded by water (State of Hawaii, 1925; State of Hawaii, 1926; Corps of Engineers, 1927).¹

In 1926, the U. S. Army Corps of Engineers reported all work on Honolulu Harbor, authorized by the 1905 and 1917 Acts combined, had been completed (Corps of Engineers, 1926).

In July 1926, the lighthouse on Sand Island was decommissioned and the light relocated to the Aloha Tower. The lighthouse remained standing until May 1934 when it was demolished during enlargement of Honolulu Harbor (Honolulu Star Bulletin, 1934).

1927 was the last time the quarantine station was used for quarantine purposes. This occurred when an epidemic of meningitis and small pox was brought with steerage passengers arriving from the Orient (Coll, 1937).

Army records list Sand Island as a military installation in 1928 under the command of the Commanding Officer, Ft. Shafter. However, no troops were permanently assigned to Sand Island (Addieman, n. d.).

December 1, 1928, the Corps of Engineers opened bids on the removal of 80,000 cubic yards of material from the inner harbor to give this area a uniform depth of 35'. The bids also included the removal of a corner of Sand Island to provide a turning basin (Honolulu Advertiser, 1928).

By 1929, the quarantine station had fallen into a state of disrepair. A report of that year described the station:

"All buildings at the Quarantine Station are old, some having been used for quarantine purposes in the days of the monarchy. They are wooden structures and so badly damaged by termites that little more than a shell remains of many of them. Minor repairs, such as replacement of steps, timbers, and floors have to be constantly made for the sake of safety, but no extensive repairs or alterations have been undertaken. Destruction of practically all of the buildings now standing and replacement with termite resistant buildings will be necessary in the near future." (U.S. Public Health Service, 1929)

In June 1930, the Federal government announced that the land reserved for federal use at Sand Island was to be returned to the Territory of Hawaii by the War Department under a revocable license. The Territory planned to plant coconut trees and otherwise beautify the island.

By Act 3, July 1930, the United States Congress authorized the construction of a channel 3,000' long, 300' wide and 35' deep along the mauka side of the Reserved Channel area (Corps of Engineers, 1931).

Congressional Act 30, August 1935 authorized the widening of the Honolulu Harbor entrance channel to 500' and deepening it to 40'. Lighthouse Point was to be removed as well as a strip 320' wide cut off Sand Island. This work was completed in 1935. Further, the revetment of the shore of Sand Island and the demolishing and removing of existing governmental facilities on Sand Island was also completed

(Corps of Engineers, 1935).

Between 1905 when the United States government began improvements of Honolulu Harbor, and 1935, the Federal government spent approximately \$3,905,000 on this work (Corps of Engineers, 1935).

As part of the work done, much material was dredged from the Honolulu Harbor channel on both maintenance and improvement projects. The quantity of material removed between 1929 and 1936 is shown in Table III.

TABLE III

MATERIAL DREDGED FROM HONOLULU HARBOR

Year	Cubic Yards	Year	Cubic Yards
1930	68,825	1933	525,165
1931	31,077	1934	1,097,243
1932	n/a	1935	875,648

At least some of this spoil was deposited on Sand Island, but how much is not known.

In 1935, Sand Island had 3,200 linear feet of unimproved frontage on Honolulu Harbor and the entrance channel. This frontage was controlled as follows:

War Department (Army)	2,330'
Lighthouse Service	530'
Public Health Service	340'

(Corps of Engineers, 1935).

Early in 1935, the U.S. Public Health Service accepted bids from the Hawaiian Contracting Company for the construction on Sand Island of a boat basin, wharf, wharf shed, and a disinfecting building (Honolulu Star Bulletin, 1935).

From 1935 through at least 1939, Sand Island was included in the area designated by the Army for use in the coastal defense of the Pearl and Honolulu Harbors. In 1935, this area was in the zone of responsibility of the 2d Bn, 55th Coast Artillery Regiment (Addieman, n. d.).

In 1937, the War Department (Army) controlled about 200 acres of Sand Island (Coll, 1937). About 100 acres of the island was controlled by other federal agencies (Honolulu Star Bulletin, 1937). The Quarantine Station consisted of approximately 80 acres (Coll, 1937).

In 1937, there was no beach along the outer fringe (Mamala Bay side) of the island, facing the reef; however, there was evidence of a beach growing there (Coll, 1937).

Army records of 1939 list Sand Island as a military installation assigned to the command of the Commanding General, Hawaiian Separate Coast Artillery Brigade (HSCAB). No units were permanently assigned to Sand Island (Addieman, n. d.).

In October 1940, dredging by the Corps of Engineers commenced

on the seaplane channel in the Keehi Lagoon. This work continued intermittently until 1945. Some of the spoils from this project were used to fill 75 acres of the Shafter flats (Honolulu Advertiser, B, 1946).

Military installations of an undefined nature were reported on Sand Island as of the end of February 1941 (Honolulu Advertiser, A, 1941).

In July 1941, Sand Island was reported as comprising about 410 acres (an increase of 110 acres since 1937) of which a total of about 50 acres were useable from the standpoint of building location (Honolulu Star Bulletin, B, 1941). At the same time, it was reported that the United States Army had frequently conducted seacoast artillery firing practice from the island (Honolulu Star Bulletin, B, 1941).

During August 1941, dredging for the Kapalama Basin pier project commenced using the Army's dredge "Hinds". The use of this spoil to raise the elevation of Sand Island from approximately 4' to 10' was considered (Honolulu Star Bulletin, A, 1941); however, it might have been used for other purposes.

The military commands in Hawaii were put on an alert status on November 28, 1941. Vital installations were to be placed under guard. Oahu was divided into two defense sectors with the Northern sector defended by the 24th Division and the Southern sector defended by the 25th Division (Headquarters Army Forces, Middle Pacific, n. d.; Brooks, 1973).

December 1, 1941, the 14th Naval District assumed responsibility

for Honolulu Harbor (Honolulu Star Bulletin, B, 1941). The Honolulu Harbor Defense Groups consisted of the

Captain of the Port
Harbor Patrol
Water Front Security
Net Operating Station
Mine Sweeping

(Headquarters Army Forces, Middle Pacific, n.d.).

When the Japanese planes attacked on December 7, 1941, there was a 3" anti-aircraft gun detachment of the 53d Coast Artillery Brigade (Anti-aircraft) on Sand Island. The Hawaiian Coast Artillery Command alerted the 53d Brigade at 0810 hours and within several minutes, anti-aircraft batteries at Fort Kamehameha and Fort Weaver opened up on the Japanese planes with small arms fire. At 0830, a fixed 3" battery at Fort Weaver opened fire and similar batteries at Fort Kamehameha and on Sand Island went into action. The Sand Island battery claimed the downing of two Japanese planes. This was reported as occurring at 0815 hours and would mean these planes were from the first wave of attacking Japanese planes (United States Congress, 1946; Conn, S., et al, 1964).

Within a few hours of the Japanese attack, all Japanese, Italians, and Germans who had previously been listed as enemy "agents" by Army and Naval intelligence, and the F. B. I., were "rounded up" (Short, 1941). These "agents" were, in fact, primarily residents of the Territory of Hawaii who had not taken up United States citizenship (Miyamoto, 1964).

They were detained at the immigration station in Honolulu over the night of 7/8 December; then, on the 8th, were removed by boat to the Quarantine Station on Sand Island (Short, 1941; Miyamoto, 1964). On the day the internees moved to Sand Island, the War Department (Army) took over control of the Quarantine Station from the U.S. Public Health Service (Marek, 1973).

On the 8th of December, the U.S. Coast Guard picked up some fishermen who had been at sea during the Japanese attack. As most fishermen at that time were aliens, the men picked up were interned on Sand Island (Allen, 1971).

By 12 December 1941, there were 482 persons interned at the Quarantine Station:

370 Japanese
98 Germans
14 Italians

They were initially guarded by Military Police from the Hawaiian Department and civilian police from the Honolulu Police Force. Later, a rifle company of the 25th Division was employed for this (possibly from the 161st Infantry which was responsible for this portion of the 25th Division's area). As of 12 December, a special detachment was being organized under the Provost Marshal to assume this guard (Short, 1941). This detachment may or may not have been a portion of the Honolulu Home Guard which did later take over the guard duties (Miyamoto, 1964).

The detainees on Sand Island were held in a five acre barbed wire enclosed tent camp (see Map 1). One former detainee expressed the opinion that this camp had been erected prior to the Japanese attack (Miyamoto, 1964).

After December 12, 1941, detainees continued to arrive. To the original interned nationalities were added Austrians, Finns, and Norwegians. While interned on the island, the detainees cleared a number of kiawe trees. They also reported being much bothered by mosquitos (indicating there was still much undrained swamp on the island) (Miyamoto, 1964).

By mid-February 1942, the construction of "pill" boxes along Oahu's shoreline for coastal defense had been completed (Honolulu Advertiser, 1942). (It is believed these were field type fortifications made out of locally available materials - not the prefabricated concrete type still seen on Sand Island - author.) Although these defensive positions on Sand Island have not been definitely located, the continued reference to infantry defense positions on Sand Island during the first six months of the war leave no doubt that such positions existed. What can be said is these positions were well forward of Quarantine Island on the southeast portion of Sand Island and generally on the portion of the island behind the Mamala Bay seawall.

Some (perhaps all) detainees were evacuated from Sand Island on February 18, 1942. They were detained in Honolulu until February 20,

1942, when they were placed on a transport to the mainland (Miyamoto, 1964).

In April 1942, civilian employees of the Hawaiian Constructors had been moved into a tent camp in the northwest portion of Quarantine Island (Corps of Engineers, A, 1942). How long this camp was occupied is not known, but drawings of August 1943 show the camp had then been struck.

Sand Island remained in the area of defense responsibility of the 161st Infantry, 25th Division, up to November 2, 1942, at which time the 25th was relieved of the defense responsibility which was then assumed by the 27th Division. The threat of an invasion of the Hawaiian Islands increased steadily up to the Battle of Midway (Headquarters, Army Forces, Middle Pacific, n. d.). The Battle of Midway (4-6 June 1942) had a dual effect on Sand Island. Beach defense was no longer the major mission of Army units in the Hawaiian Islands. It was replaced by a training mission; however, beach defense was not entirely neglected for a certain readiness state was maintained. (Headquarters, Army Forces, Middle Pacific, n. d.). Secondly, the Navy's interest in seaplane operations from the Hawaiian Islands decreased, although work on the Keehi Seaplane Channel continued. This dredging was mainly supplying coral for the John Rogers Airport (Dod, 1966).

With the build-up of troops more definitive defense sectors were

proscribed. Sand Island was now located in a defense sector titled the Honolulu sub-sector. This sub-sector was bounded by the Kalihi Channel and Makapuu Head. Its defense was assigned to the 27th Combat Team consisting of the

27th Infantry Division, less the 1st Battalion
8th Field Artillery Battalion, less Battery A
Company B, 63d (65th) Engineer Battalion
Detachment of the 25th Medical Battalion

(Headquarters, Army Forces, Middle Pacific, n. d.).

The area of dry land on Sand Island in 1942 was reported as 240 acres and access to Sand Island in 1942 was by boat only (Honolulu Advertiser, B, 1946).

During 1942, Sand Island was armed against air and amphibious attack. This armement consisted of quick firing and 5" anti-aircraft guns and a battery of 7" guns. Both the 5 and 7" guns had been dismounted from naval ships and turned over to the Army.

Four 7" naval guns were mounted on Sand Island (see Map 2, 4). The installations consisted of four gun positions in a line, a splinter-proof plotting room, a splinter-proof shelter for standby generators, one powder magazine and one projectile magazine for each gun located below ground with protected entrances, plus a battery direction and control tower. The guns were placed on 2" plate cushioned by 2" thick hardwood planking and anchor bolted to a heavy reinforced concrete base. The mountings of the guns on Sand Island differed from the

method of mounting other 7" naval guns on Oahu. The guns on Sand Island were not provided with splinter-proof casements. The reason given for this was the great concentration of AA near this area (Jeffus, n. d.). (The tower and some bunkers of this emplacement are still visible on the island.)

The 5" AA guns were emplaced Ewa of the 7" battery (see Map 3, 4). The battery was designated AA Battery #9 and the guns were mounted in the form of a square. The command post, fire director and generator were located in the center of the square and apparently were above ground. Each gun was provided with its own magazine which was underground with protected entrances. These magazines were 150 to 250' outside the square of guns. The 5" guns were installed in a manner similar to the 7" guns. The position was flanked with machine gun emplacements. A tent camp for the battery personnel was situated northeast of the gun emplacements (Jeffus, n. d.).

Work on the quick firing or automatic AA weapons positions was started in the fall of 1942. Each position consisted of a 37 or 40 mm AA gun, a director, a .50 caliber machine gun, ammunition storage, and a sheltered generator. These guns were mounted either directly on the ground or on towers. The towers were 10, 16 or 20' high. It was initially considered that the weight of the guns and director could only be supported by concrete towers and the first towers were so built. Later, it was discovered that wooden towers could bear the weight, and

the construction of concrete towers was discontinued. In the case of guns mounted on towers, the director had to be immediately adjacent to the guns but mounted on a separate tower. The generator was mounted in a concrete building (Jeffus, n. d.). Two towers of such an installation with supporting structure still stand along the Honolulu Harbor shore of Sand Island.

The 27th Division was relieved of its defense mission in August 1943 and was replaced by the 6th Division. During the period August 12, 1943 to October 17, 1943, the Honolulu sub-sector was assigned to the 63d Infantry, less two battalions, and the 53d Field Artillery Battalion. During this period, the defense of Sand Island was assigned to H Company, 63d Infantry (Headquarters, Army Forces, Middle Pacific, n. d.).

On the 17th of October 1943, the 6th Division assumed the defense of the entire island of Oahu under a revised defense plan written under the direction of Major General Siebert, the division commander. Under this plan, Sand Island was designated beach position/platoon position Kansas, an operational designation it retained until the end of the war (Headquarters, Army Forces, Middle Pacific, n. d.).

The Army Port and Service Command (AP&SC) was established as a major echelon of the U. S. Army Force in the Central Pacific Area (USAFICPA) on August 10, 1943. The headquarters for the AP&SC was established on Sand Island and remained there throughout the remainder

of the war (Bykofsky and Larson, 1957; Honolulu Advertiser, C, 1946). With the establishment of the AP&SC on Sand Island, the major function of the island was that of an administrative and logistical center. Among other functions, the AP&SC was assigned the administrative responsibility for the Army station complement of Oahu. The AP&SC initially occupied the area of the former quarantine station/internment camp with AP&SC headquarters being established in the concrete former administration building of the Quarantine Station (see Map 1). At the time of its occupancy, the grounds and buildings were described as having fallen into disrepair, sanitation had been neglected, weeds were rank, while water filled open ditches and served as a breeding ground for mosquitos. The unused barracks, filled with tires, served as supplementary warehouses and were in a dilapidated condition (Honolulu Advertiser, C, 1946).

In 1943, all logistical installations were concentrated around Quarantine Island. An area north of the large end of Quarantine Island had been allocated to the Civil Works division of the United States Army Corps of Engineers for dredge repair. Two warehouse buildings were erected in this area. The mission of this facility was not only to support dredges operating in the Hawaiian Islands, and at this time there were six dredges operating in the immediate vicinity of Sand Island, but also to support the dredges operating in the combat zone in the western Pacific (Jeffus, n. d.; Corps of Engineers, A, 1943).

Adjacent to, and southeast of the dredge facilities, an ordnance vehicle assembly area had been established and the main assembly shed was erected (see Map 4). On the edge of the Honolulu Harbor in the northern corner of the ordnance area, three barracks for anti-aircraft personnel had been erected (Corps of Engineers, B, 1943).

At the western end of the large circle of Quarantine Island, a tent camp was erected or was being erected to house five Transportation Corps Port Companies. On the southern side, just outside the area of Quarantine Island, a 1,925 man tent staging camp (this has also been reported as a 1,658 man camp) was erected or was in the process of being erected. (Corps of Engineers, C, 1943.)

In 1943, the submarine net protecting Honolulu Harbor stretched from the makai pier on Sand Island (the foundations of which can still be seen) to Pier #1 on the Honolulu side of the harbor (Corps of Engineers, D, 1943).

During 1943, the Army Corps of Engineers widened and deepened the entrance channel to Honolulu Harbor, as well as continued work on the Keehi Lagoon seaplane runways. The spoils from three Army dredges were used as fill on Sand Island (Corps of Engineers, A, 1943). Further, in the same year, a dirt causeway connecting Sand Island with the mainland was constructed in the Kapalama area (Honolulu Advertiser, B, 1946).

The 6th Division was relieved of defensive duties January 21, 1944,

and these duties were assumed by the 38th Division. The defense of Sand Island was taken over by the 106th Infantry (Headquarters, Army Forces, Middle Pacific, n. d.).

The mission of the 106th was: "To organize and defend the waterfront of Honolulu from Mokuoko Island to Wailupo Pond; pay particular attention to the waterfront from Kaoihi Channel to the mouth of the Ala Wai Canal; drive into the sea any enemy landing force by immediate local counter-attack. Quarantine (Sand) Island and the islands on both sides of the Kalihi Channel are to be defended." (Headquarters, Army Forces, Middle Pacific, n. d.)

The 38th Division was in turn relieved of its Oahu defense responsibilities on June 1, 1944. These defense responsibilities were then assumed by the 98th Division. Known units of the 98th Division which at times had the defense responsibilities for Sand Island were:

F. Company, 391st Infantry
Units from the 1st Bn, 372d Infantry

The 98th Division remained responsible for Sand Island's defense until the end of the war.

By mid 1944, the Army's timber pile marginal wharf was completed along the southerly side of the Reserved Channel and Kapalama Basin. The wharf proper consisted of an open quay about 4,000' long consisting of a wooden deck surfaced with black topping. No transit sheds were near the quay area, but several warehouses were located 200 to 800' back from

the quay fence; open black topped areas about 400' deep extended back from all berths except MW-5. Eleven wharves and one ferry landing were included in this complex (The Propellor Club of the United States, 1967; Corps of Engineers, 1946; Corps of Engineers, 1950). Use of the marginal wharves was apparently discontinued in 1950.

The Keehi Seaplane Channel dredging was finished in September 1944. An estimated 14,270,000 cubic yards of coral had been excavated at a cost of \$3,348,000. The major contributors were \$2,019,000 from the Corps of Engineers Rivers and Harbors funds and \$1,269,000 from Civil Aeronautics Administration funds (Jeffus, n. d.). With the completion of the marginal wharves and the seaplane channel dredging, Sand Island assumed the configuration seen today with one exception - a land bridge existed between the island and Oahu, just Ewa of the Kapalama Basin. In 1943 and 1944 the three dredges "Jefferson", "San Joaquin", and "Point Loma" had respectively contributed 2,964,000, 1,440,000 and 3,539,000 cubic yards of spoil to the island, for a total of 7,943,000 cubic yards (Corps of Engineers, A, 1943).

During 1944, logistic activities expanded to the southwest of Quarantine Island, along the shores of the seaplane runway "D", as well as in the previously occupied areas. The dredge repair facilities now had a dredged basin 260' by 600' with a depth of 25', and shop buildings A and B adjacent to the basin had been completed. With the construction of the shops, the dredge repair facility contained areas and capability

for machining, welding, blacksmith work, cable repair, rigging, electrical repair, boat repair, planing and milling, and carpentry (Jeffus, n. d.). The tent camp for the Transportation Port Companies remained, but just north of this, a new tent camp had been established. This was a detention camp of some sort as it was enclosed in barbed wire with guard towers on all four corners. The purpose of this camp can only be speculated about at this time; military records indicate the possibility of a new military stockade (a Korean P. O. W. compound had been considered for Sand Island), or this might have been a relocation of an Italian P. O. W. camp which was on Sand Island in 1944, but located south of Quarantine Island (see Map 4) (Office of the Area Engineer, 1967; Corps of Engineers, A, 1944). South of Quarantine Island had been erected a 15,000 man Quartermaster laundry, a Quartermaster dry cleaning plant, and a boiler room to support these facilities. Also, an Ordnance Tire Repair Shop, storage warehouse, and a tent camp for Ordnance Tire Repair personnel had been erected. Behind the Quartermaster laundry area, Utilities Group, APO 455, moved in and occupied 15 buildings in November 1944 (see Map 4) (Jeffus, n. d.). Finally, a drummed gasoline open air storage area had been established along the banks of seaplane runway "D".

Dredging of the Reserved Channel, the turning basin and the repair basin of the Kapalama Basin Harbor area was finished in August 1945 (Honolulu Advertiser, B, 1946).

In the final year of the war, little additional construction occurred on Sand Island. A small arms range was added this year in the area towards the present sewerpump house. Plans were under way to turn the open portions of Sand Island into a vast military recreation area, but, with the coming of peace in September 1945, construction and development of Sand Island ceased immediately. Caught in the cessation of construction was a marine repair base for small Army boats which had been started. The function apparently was carried on in the dredge repair area when this area was no longer used for dredge repairs (Jeffus, n. d.). Wartime maps show that at periods during the war waterfront portions of Sand Island bordering the Honolulu Harbor were used by the U.S. Coast Guard and the U.S. Navy.

A portion of Sand Island was authorized for transfer from the U. S. Army to the Territory of Hawaii by Presidential Executive Order #9752, July 15, 1946, for use by the City and County of Honolulu as a sewer treatment plant (Honolulu Advertiser, A, 1956). This transfer was not immediately effected, but a right of entry was granted for a sewer pipe line in November 1947. The transfer of 202 acres which contained the area for the treatment facility was consummated in August 1959 (U.S. Army Support Command, n. d.).

The Keehi seaplane channels were used during the period 1946 to 1952 by Naval Air Squadron VR-2, flying "Mars" flying boats between Hawaii and the mainland (Del Rosario, 1973).

In 1946, the U.S. Congress appropriated money to deepen the Reserved Channel to 36', widen it to 600' and dredge a turning basin at Kapalama 35' deep and 1,000' wide (Honolulu Advertiser, A, 1946). Work on the Kapalama turning basin commenced in September 1947 using the Army dredge "James F. C. Hyde". The removal of the causeway which connected Sand Island with Oahu, and the construction of a second channel, authorized by Act 3, September 1954, commenced in 1959 and was completed in 1962. During this period, a bascule bridge was constructed to provide access to Sand Island (The Propellor Club of the United States, 1967; Corps of Engineers, 1956).

As of January 1958, there were on Sand Island, the following U. S. Army activities:

1. a Quartermaster laundry and dry cleaning plant
2. an Ordnance Tire Repair Shop
3. a small Transportation Corps marine repair shop (performing repairs on small Army watercraft)
4. a Quartermaster furniture factory
5. an Engineer packing and crating facility

Also, there were the Coast Guard facility, a Hawaiian National Guard Motor Pool, and commercial companies preparing arms under the aid program (Graham, 1958).

Except for the U.S. Coast Guard facility, the remainder of Sand Island under U.S. Army control was released to the State of Hawaii on a Quit Claim dated July 25, 1965, effective May 12, 1966.

BIBLIOGRAPHY

- Addleman, W. C., n.d. History of the United States Army in Hawaii 1849 to 1939. Hqs Hawaiian Division, Schofield Barracks, T.H. 85 pp., unpublished.
- Alexander, W. D., 1885. "Map of Reef Titles Near Honolulu". Survey Office, Honolulu, Hawaii (Map). 1 p.
- _____ 1908. "Early Improvements in Honolulu Harbor". Fifteenth Annual Report of the Hawaiian Historical Society. Hawaiian Gazette Co., Honolulu, Hawaii. p. 24.
- Allen, G. E., 1971. Hawaii's War Years. Greenwood Press, Westport, Conn. 418 pp.
- Brooks, H. E., 1973. Personal communication. San Antonio, Texas.
- Bykofsky, J., and Larson, H., 1957. "The Transportation Corps: Operations Overseas". United States Army in World War II. Office of the Chief of Military History, Department of the Army, Washington, D. C. pp. 491 and 511-512.
- Coll, R., 1937. "Paradise in Sand Island". The Honolulu Advertiser, August 1, 1937. Magazine Section. pp. 1-2.
- Conn, S., et al., 1964. "Guarding the United States and Its Outposts". Office of the Chief of Military History, Department of the Army, Washington, D. C. pp. 191.
- Corps of Engineers, 1918. Annual Report of the Chief of Engineers, U.S. Army. Part I. War Department, Washington, D. C. pp. 1839-1840.
- _____ 1926. Annual Report of the Chief of Engineers, U.S. Army. Part I. Government Printing Office, Washington, D. C. p. 1755.
- _____ 1927. Annual Report of the Chief of Engineers, U.S. Army. Part I. Government Printing Office, Washington, D. C. p. 1768.
- _____ 1931. Annual Report of the Chief of Engineers, U.S. Army. Part I. Government Printing Office, Washington, D. C.

1935. The Annual Report of the Chief of Engineers, U.S. Army. Part I. Government Printing Office, Washington, D.C. p. 1585.
1935. The Ports of the Territory of Hawaii. Port Series #17, U.S. Army. Government Printing Office, Washington, D.C. pp. 39-42.
- A, 1942. "Sanitary Sewerage Maintenance Plan". Drawing F47/31, Honolulu, Hawaii. 1 p.
- A, 1943. "Dredging Development, the Keehi Lagoon, Kapalama Basin and Rear Channel". RH-991, Honolulu, Hawaii. 1 p. (Map)
- B, 1943. "Sand Island and Pier 36 (Location Details)". Drawing F124/45, Honolulu, Hawaii. 1 p.
- C, 1943. "Port Companies, Ordnance Facilities (Water and Sewage System)". Drawing F156/32, Honolulu, Hawaii. 1 p.
- D, 1943. "Conversion of 2.3 KV Primary Distribution System to 4 KV (Detail Cable from Fort Armstrong)". Drawing F145/119, Honolulu, Hawaii. 1 p.
- A, 1944. "Additional Construction P.O.W. Compound". Drawing F186/78, Honolulu, Hawaii. 1 p.
1946. Annual Report of the Chief of Engineers, 1946. Part I, Vol. II. Government Printing Office, Washington, D.C. p. 2523.
1950. Annual Report of the Chief of Engineers, 1949. Part I, Vol. II. Government Printing Office, Washington, D.C. p. 2619.
1956. Annual Report of the Chief of Engineers, 1955. Part I, Vol. II. Government Printing Office, Washington, D.C. p. 1396.
- Del Rosario, J., 1973. Personal conversation. Honolulu, Hawaii.
- Dod, K. C., 1966. "The Corps of Engineers, the War Against Japan", United States Army in World War II. Office of the Chief of Military History, United States Army, Washington, D.C. 759 pp.

Graham, 1958 n. d. Major Present Day Posts in Hawaii. G-4 Section, Hqs U.S. Army Pacific, Ft. Shafter, Hawaii (loose mimeographed pages).

Headquarters, Army Forces, Middle Pacific. History of G-3. 7 December 1941 - 2 September 1945, Honolulu, Hawaii. Military History Office, DSCOPS, UARPAC, n. d., typed. 264 pp.

Honolulu Advertiser, 1919. "Hawaii's Quarantine Station's Scientific Efficiency and Natural Beauty".

_____ November 20, 1928.

_____ June 20, 1930.

_____ February 18, 1942.

_____ A, July 6, 1946.

_____ B, November 16, 1946.

_____ C, April 6, 1946.

_____ A, April 18, 1956.

Honolulu Star Bulletin, May 19, 1934.

_____ January 18, 1935.

_____ May 27, 1937.

_____ A, November 10, 1941.

_____ B, December 1, 1941.

Jeffus, C. J., n. d. Historical Review, Corps of Engineers, United States Army, Covering Operations During World War II, Pacific Ocean Area. 3 Volumes. 1327 pp., unpublished. (Only Vol. I and II available.)

Malden, C. R., 1825. "Map of the Harbor of Honolulu in the Island of Oahu". 1 p. (Map)

Marek, C., 1973. Personal communication, Honolulu, Hawaii.

Miyamoto, K., 1964. Hawaii, End of the Rainbow. Bridgeway Press, Rutland, Vermont. pp. 297-300.

Office of the Area Engineer, 1967. "Disposal of Original Tracings for Real Property Facilities at Sand Island Military Reservation". Letter to Commanding General, United States Army Hawaii, with 1st Endorsement to Commander, Fort Shafter Area, dated July 1967, Honolulu, Hawaii. 15 pp. typed.

Paradise of the Pacific, 1898, Vol. XI, No. 2, Honolulu, Hawaii. pp. 17-18.

Short, W. C., Lt. Gen., U.S.A., 1941. Letter Office of the Department Commander, Hqs Hawaiian Department, Ft. Shafter, T. H., 12 December 1941, Subj: "Report of Battle of Oahu, to Chief of Staff of the Army", War Department, Washington, D. C. p. 3.

State of Hawaii, 1925. Annual Report of the Board of Harbor Commissioners, July 1, 1924 to June 30, 1925. The New Freedom Press, Honolulu, Hawaii. p. 12.

_____ 1926. Annual Report of the Board of Harbor Commissioners, July 1, 1925 to June 30, 1926. The Printshop Co., Ltd., Honolulu, Hawaii. p. 13.

The Pacific Commercial Advertiser, A, January 2, 1869.

_____ B, January 9, 1869.

_____ C, February 13, 1869.

_____ June 11, 1911, "Uncle Sam's 40 Acre Germ Net".

The Propellor Club of the United States, 1967. Ports of Hawaii. Propellor Club of the United States, Port of Honolulu and Red Dot Publishing Co., Honolulu, Hawaii. pp. 9-75.

Thrum, T. G., 1915. "Honolulu Harbor Extension Plans". The Hawaiian Annual, 1915, Honolulu, Hawaii. pp. 110-118.

U.S. Army Support Command, Hawaii, n. d. "Sand Island Reservation", Real Estate Division, Facilities Engineering, Schofield Barracks, Hawaii. 1 p. (Ditto copy)

U. S. Coast and Geodetic Survey, 1907. "Hawaiian Islands, Oahu Honolulu Harbor", Washington, D. C. 1 p. (Map)

_____ 1972. "Island of Oahu, Honolulu Harbor", Washington, D. C. 1 p. (Map)

United States Congress, Senate, 1946. Investigation of the Pearl Harbor Attack. Document 244, 79th Congress, 2d Session, Government Printing Office, Washington, D. C. 580 pp.

U. S. Hydrographic Office, 1882 (approx.) "Honolulu Harbor", Washington, D. C. 1 p. (Map)

_____ 1888. "Hawaiian Islands, South Coast of Oahu, Honolulu Harbor", Washington, D. C. 1 p. (Map)

U. S. Public Health and Marine Hospital Service, 1909. Annual Report of the Surgeon-General of the Public Health and Marine Hospital Service of the United States for the Fiscal Year 1908. Government Printing Office, Washington, D. C. pp. 119-124.

_____ 1911. Annual Report of the Surgeon-General of the Public Health and Marine Hospital Service of the United States for the Fiscal Year 1910. Government Printing Office, Washington, D. C. pp. 118-120.

U. S. Public Health Service, 1923. Annual Report of the Surgeon-General of the Public Health Service of the United States for the Fiscal Year 1923. Government Printing Office, Washington, D. C. p. 164.

_____ 1918. Annual Report of the Surgeon-General of the Public Health Service of the United States, Fiscal Year, 1918. Government Printing Office, Washington, D. C. p. 200.

_____ 1929. Annual Report of the Surgeon-General of the Public Health Service for the Fiscal Year 1929. Government Printing Office, Washington, D. C. pp. 147-148.

U. S. War Department, 1905. "Report of the Chief of Engineers, Part I", Annual Reports of the War Department, Vol. V. Government Printing Office, Washington, D. C. p. 711.

Wilson, W., 1920. "Executive Order 3358", The Whitehouse. Washington, D. C. 1 p.

Appendix B
Regulatory Database Search Report



**The EDR Radius Map
with GeoCheck®**

**Sand Island Wastewater Treatment Plant
1350 Sand Island Parkway
Honolulu, HI 96819**

Inquiry Number: 889508.1s

December 02, 2002

***The Source
For Environmental
Risk Management
Data***

**3530 Post Road
Southport, Connecticut 06890**

Nationwide Customer Service

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Internet: www.edrnet.com**

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

1350 SAND ISLAND PARKWAY
HONOLULU, HI 96819

COORDINATES

Latitude (North): 21.309600 - 21° 18' 34.6"
Longitude (West): 157.881700 - 157° 52' 54.1"
Universal Transverse Mercator: Zone 4
UTM X (Meters): 615989.5
UTM Y (Meters): 2356685.2

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: N/A
Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 5 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
SAND ISLAND WWTP, 16-1 SAND ISLAND 16-1 SAND ISLAND PKY RD HONOLULU, HI 96819	SPILLS	N/A
SAND ISLAND WASTEWATER TREATMNET PL 1350 SAND ISLAND PARKWAY HONOLULU, HI 96819	LUST	N/A
SAND ISLAND W/W TREATMENT PLANT, 16-1 SAND ISLAND PKY RD HONOLULU, HI 96819	SPILLS	N/A
SAND ISLAND WASTEWATER TREATMENT PL 16-1 SAND ISLAND PKY RD HONOLULU, HI 96819	SPILLS	N/A

EXECUTIVE SUMMARY

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

SWF/LF..... Permitted Landfills in the State of Hawaii

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
Dellisted NPL..... National Priority List Deletions
FINDS..... Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Liens..... Federal Superfund Liens
PADS..... PCB Activity Database System
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
SSTS..... Section 7 Tracking Systems
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in *bold italics* are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

FEDERAL ASTM STANDARD

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 09/09/2002 has revealed that there are 2 RCRIS-SQG sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>TRANSOCEANIC CABLE SHIP CO</i>	<i>1001 SAND ISLAND PKWY</i>	<i>0 - 1/8 NW</i>	<i>5</i>	<i>9</i>
<i>ACE TOWING SERVICE INC</i>	<i>120 ADAMS WAY</i>	<i>1/8 - 1/4 SE</i>	<i>B9</i>	<i>11</i>

STATE ASTM STANDARD

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the SHWS list, as provided by EDR, and dated 07/12/2001 has revealed that there are 15 SHWS sites within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>PAULEY PETROLEUM</i>	<i>PIER 32-33</i>	<i>1/4 - 1/2 ENE</i>	<i>15</i>	<i>13</i>
<i>U.S. COAST GUARD BASE HONOLULU</i>	<i>SAND ISLAND</i>	<i>1/2 - 1 SSE</i>	<i>16</i>	<i>15</i>
<i>SHELL OIL CO.</i>	<i>789 NIMITZ HWY</i>	<i>1/2 - 1 ENE</i>	<i>17</i>	<i>17</i>
<i>BHP HAWAII TERMINALS PIPELINE</i>	<i>739 NORTH NIMITZ HIGHWA</i>	<i>1/2 - 1 ENE</i>	<i>18</i>	<i>18</i>
<i>CHEVRON PRODUCTS CO KAPALAMA T</i>	<i>1105 N NIMITZ HWY</i>	<i>1/2 - 1 NE</i>	<i>19</i>	<i>22</i>
<i>PIER 35</i>	<i>NIMITZ BLVD</i>	<i>1/2 - 1 N</i>	<i>20</i>	<i>26</i>
<i>HONOLULU HARBOR</i>	<i>705 N NIMITZ HWY</i>	<i>1/2 - 1 ENE</i>	<i>D21</i>	<i>27</i>
<i>HAWAIIAN TUG & BARGE CORP</i>	<i>705 N. NIMITZ HWY PIER</i>	<i>1/2 - 1 ENE</i>	<i>D22</i>	<i>29</i>
<i>FRED L. WALDRON FEED MILL</i>	<i>701 N. NIMITZ HWY</i>	<i>1/2 - 1 ENE</i>	<i>D23</i>	<i>32</i>
<i>PICRIC ACID AT BREWER CHEMICAL</i>	<i>311 PACIFIC STREET</i>	<i>1/2 - 1 ENE</i>	<i>E24</i>	<i>34</i>
<i>BREWER CHEM CORP</i>	<i>311 PACIFIC ST</i>	<i>1/2 - 1 ENE</i>	<i>E25</i>	<i>35</i>
<i>UNOCAL 76 HONOLULU LRNG CTR</i>	<i>411 PACIFIC ST</i>	<i>1/2 - 1 ENE</i>	<i>26</i>	<i>42</i>
<i>HOME DEPOT</i>	<i>650 IWILEI RD</i>	<i>1/2 - 1 ENE</i>	<i>27</i>	<i>51</i>
<i>HAWAII STEVEDORES - MAINTENANC</i>	<i>WEST OF SAND ISLAND ACC</i>	<i>1/2 - 1 NW</i>	<i>28</i>	<i>52</i>
<i>ALOHA TOWER DEVELOPMENT</i>	<i>PIERS 8-14, NIMITZ HWY.</i>	<i>1/2 - 1 E</i>	<i>29</i>	<i>54</i>

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

A review of the LUST list, as provided by EDR, and dated 07/01/2002 has revealed that there are 5 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>JAMES L. K. TOM, INC.</i>	<i>125 ADAMS WAY</i>	<i>0 - 1/8 SE</i>	<i>B6</i>	<i>10</i>
<i>FUJISHIGE TRUCKING CO, LTD.</i>	<i>117 ADAMS WY</i>	<i>1/8 - 1/4 SE</i>	<i>10</i>	<i>11</i>
<i>MATSON TERMINALS INC</i>	<i>P.O. BOX 2630 PIER 52,</i>	<i>1/8 - 1/4 NE</i>	<i>12</i>	<i>12</i>

EXECUTIVE SUMMARY

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
HONOLULU DISPOSAL SERVICE, INC	214 HOOKAHI WY	1/4 - 1/2 SSE	C13	13
BILL'S CRANE SERVICE, INC.	1071 MAKEPONO (PREVIOUS	1/4 - 1/2 SSE	C14	13

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle 1 of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 07/01/2002 has revealed that there are 3 UST sites within approximately 0.25 miles of the target property.

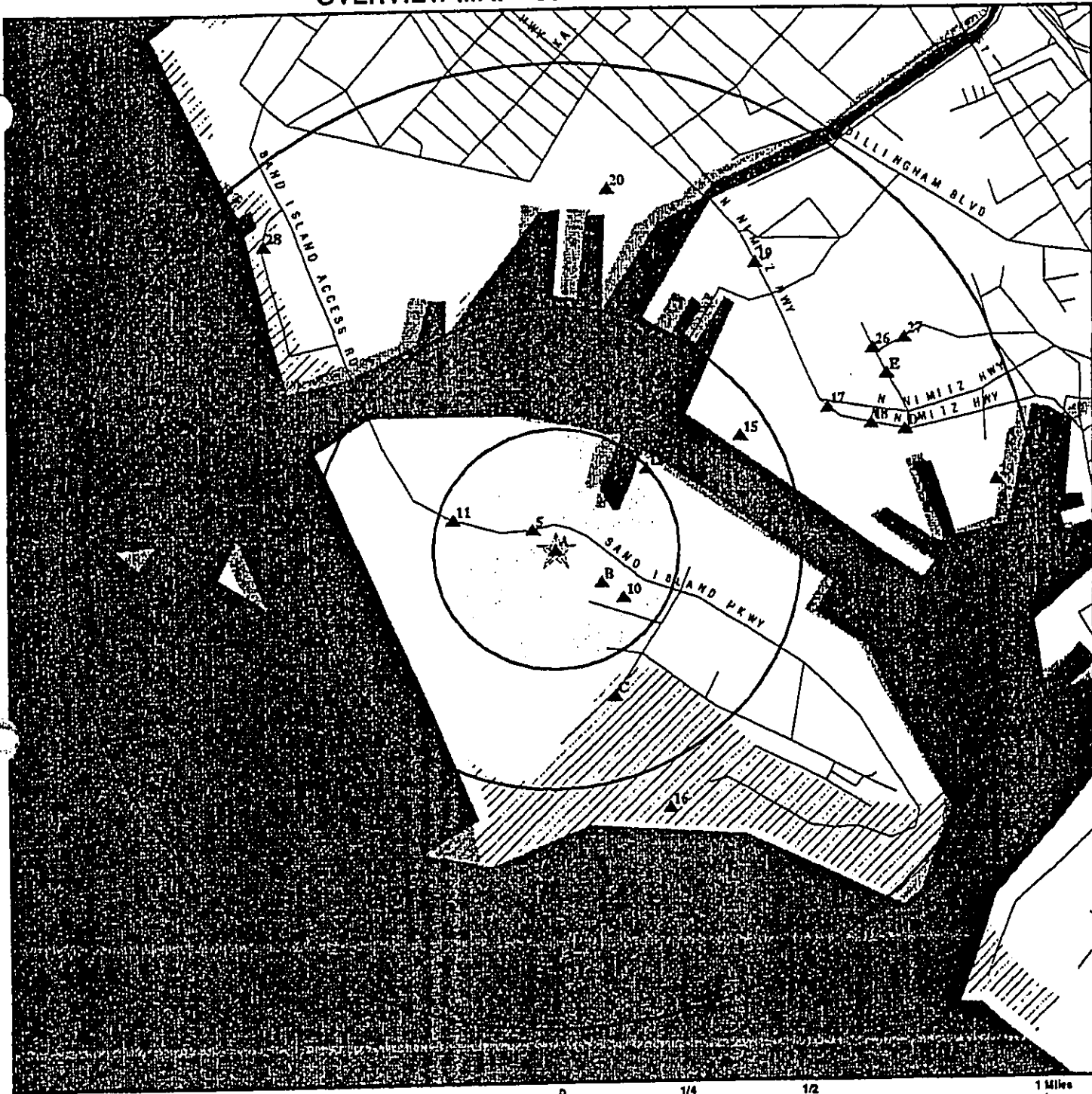
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
JAMES L. K. TOM, INC.	358 HOOKELA PLACE (FOR	0 - 1/8 SE	B7	10
COAST & COAST SERVICE	122 ADAMS WY	1/8 - 1/4 SE	B8	11
FUJISHIGE TRUCKING CO, LTD.	117 ADAMS WY	1/8 - 1/4 SE	10	11

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
LILIHA CIVIC CENTER	SHWS
ELLIOT STREET DRAINAGE CANAL	SHWS, SPILLS
HONOLULU SHIPYARD, INC. (EWA OF PI	SHWS
HONOLULU SHIPYARD, INC.	SHWS
HAWAII INSTRUMENTATION & CONTROLS,	SHWS
KING KALAKAUA PLAZA (WAIKIKI GATEW	SHWS, SPILLS
KEKAULIKE	SHWS
NIMITZ HIGHWAY RELIEF SEWER	SHWS
CHEVRON KAPALAMA NORTHEAST PARCEL	SHWS
PACIFIC RESOURCES, INC. (GASCO)	SHWS
DOMESTIC COMMERCIAL FISHING VILLAG	SHWS
HONOLULU FUELING FACILITIES CORPOR	SHWS
BHP, PIER 38	SHWS
SCRAP METAL PILE	SHWS
PACIFIC MARINE & SUPPLY CO LTD	SHWS
BHP TANK FARM, SAND ISLAND	SHWS, SPILLS
TOWCO	SHWS
USCG BASE HONOLULU	SHWS, SPILLS
KAPALAMA MILITARY RESERVATION	SHWS, UST
BARBERS POINT HARBOR EXPANSION	SHWS
TRIPLER ARMY MEDICAL CENTER	SHWS
TRIPLER ARMY MEDICAL CENTER, BUILD	SHWS
NIMITZ HIGHWAY RELIEF SEWER, JOB W	SHWS
KEEHI LAGOON CANOE FACILITY	CERCLIS
VERMICULITE OF HAWAII, INC.	CERCLIS
HAWAII STAGING AND LIGHTING	CERCLIS
ABC DSPL	CERC-NFRAP
TOWCO	CERC-NFRAP
USCG BASE HONOLULU	CERC-NFRAP
NEW MILILANI LANDFILL	SWF/LF
OLD MILILANI LANDFILL	SWF/LF
U.S. COAST GUARD BASE HONOLULU	LUST
HARBOR GRAPHICS	RCRIS-SQG, FINDS
C S X LINES L L C	RCRIS-SQG, FINDS
ALLEGIANCE HEALTHCARE CORP	RCRIS-SQG, FINDS, HAZNET
HONOLULU CORP YARD	RCRIS-SQG, FINDS
AMAZON CONSTRUCTION CO INC	RCRIS-SQG, FINDS
MATSON NAVIGATION COMPANY	RCRIS-SQG, FINDS
MATSON NAVIGATION COMPANY	RCRIS-SQG
MATSON NAVIGATION COMPANY	RCRIS-SQG
MATSON NAVIGATION COMPANY	RCRIS-SQG
CSX LINES	HAZNET

OVERVIEW MAP - 889508.1s - Environet



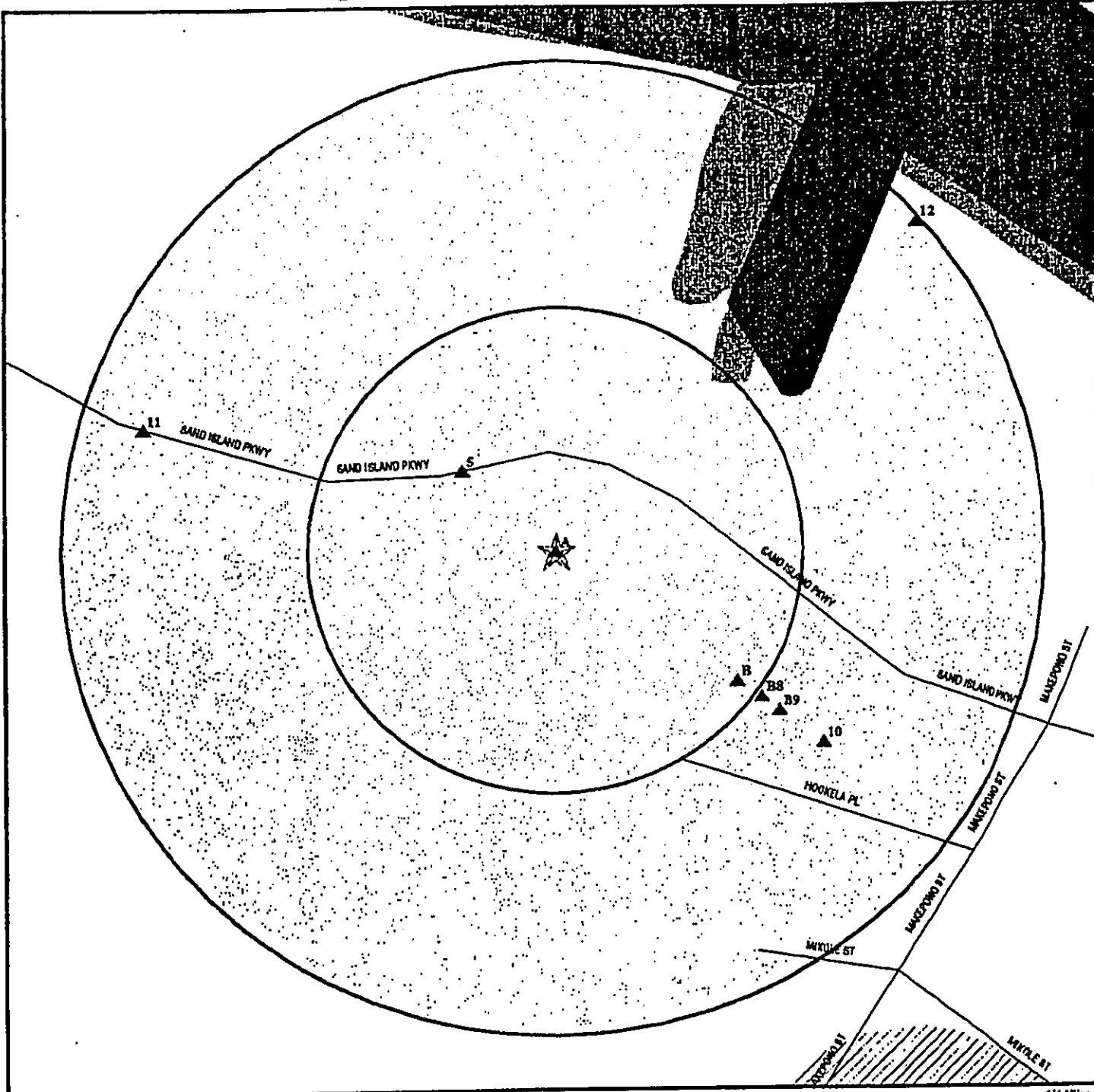
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- ☒ National Priority List Sites
- ☒ Landfill Sites

- Power transmission lines
- Oil & Gas pipelines
- ▨ 100-year flood zone
- ▩ 500-year flood zone
- ▧ Wetlands

72

TARGET PROPERTY:	Sand Island Wastewater Treatment Plant	CUSTOMER:	Environet
ADDRESS:	1350 Sand Island Parkway	CONTACT:	Martha Spengler
CITY/STATE/ZIP:	Honolulu HI 96819	INQUIRY #:	889508.1s
LAT/LONG:	21.3096 / 157.8817	DATE:	December 02, 2002 11:48 am

DETAIL MAP - 889508.1s - Environet



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites

- ~ Power transmission lines
- ~ Oil & Gas pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone
- ▨ Wetlands



TARGET PROPERTY:	Sand Island Wastewater Treatment Plant	CUSTOMER:	Environet
ADDRESS:	1350 Sand Island Parkway	CONTACT:	Martha Spangler
CITY/STATE/ZIP:	Honolulu HI 96819	INQUIRY #:	889508.1s
LAT/LONG:	21.3096 / 157.8817	DATE:	December 02, 2002 11:48 am

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	1	1	NR	NR	NR	2
ERNS		TP	NR	NR	NR	NR	NR	0
STATE ASTM STANDARD								
SHWS		1.000	0	0	1	14	NR	15
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	1	2	2	NR	NR	5
UST		0.250	1	2	NR	NR	NR	3
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
SPILLS	X	TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0
AQUIFLOW - see EDR Physical Setting Source Addendum								

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

Database(s) EDR ID Number
EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1
Target
Property

SAND ISLAND WWTP,16-1 SAND ISLAND
16-1 SAND ISLAND PKY RD
HONOLULU, HI 96819

SPILLS S105262446
N/A

Site 1 of 4 in cluster A

HI SPILLS:

Reported Date:	Not reported
Case Number:	19920422
Island:	Oahu
Incident Description:	Equipment Failure - valve leaking, causing sewage sludge spill.
Cause:	Equipment Failure - valve leaking
Substances:	Sludge Sewage
Quantity:	500 Gals
Media Affected:	Land & Water
Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	Not reported
Reported By:	Tina De Jesus
Reporters Affiliation:	Local Government
ERNS Number:	Not reported
Responder:	DOH - HEER
Responder Affiliation:	DOH-HEER
Initial Response:	Sewage Spill contained, hosed down gate area & Hypochlorinated the affected area.
Release Date:	04/21/92
Time of Release:	Not reported
Duration:	Not reported
Input By:	Adia/Tom
Date Input:	12/01/93
Staff 1:	Not reported
Staff 2:	Not reported
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported
No Further Action:	Not reported
Priority:	NFA
Comments:	
File Section:	Central
Type:	County
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Not reported
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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SAND ISLAND WWTP,16-1 SAND ISLAND (Continued)

S105262446

Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported

**A2
Target
Property**

**SAND ISLAND WASTEWATER TREATMNET PL
1350 SAND ISLAND PARKWAY
HONOLULU, HI 96819**

**LUST S105481817
N/A**

Site 2 of 4 in cluster A

LUST:
 Facility ID: 9-103745
 Alternate Event ID: 020027
 Facility Status: Confirmed Release
 Project Officer: Fu

**A3
Target
Property**

**SAND ISLAND W/W TREATMENT PLANT,
16-1 SAND ISLAND PKY RD
HONOLULU, HI 96819**

**SPILLS S105262875
N/A**

Site 3 of 4 in cluster A

HI SPILLS:
 Reported Date: Not reported
 Case Number: 19930902-3
 Island: Oahu
 Incident Description: The seal washer on a tank on line cracked causing a charge to blow. As a result, green cloud initially covered Park Area but it soon changed direction when the Fire-Hazmat team arrived. The wind took a 180 degree westward swing which eve
 Cause: Valve from Old Chlorine Tank Ruptured
 Substances: Chlorine
 Quantity: 40 lb
 Media Affected: Air
 Reportable Quantity: Not reported
 Category: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDRID Number
 EPAID Number

SAND ISLAND W/W TREATMENT PLANT, (Continued)

S105262875

Spill ? : Not reported
 Reported By: Bill Harath
 Reporters Affiliation: OCD
 ERNS Number: Not reported
 Responder: HFD-HAZMAT, DOH-HEER,OCD,HPD
 Responder Affiliation: HFD-HAZMAT, DOH-HEER,OCD,HPD
 Initial Response: OSC on scene reported that HAZMAT was already on scene. Hazmat found that the operator of the tank had already shut down the valve using SCBA equipment & other related tools. The operator, Mike Wymark, stated that the colored cloud wa
 Release Date: 09/02/93
 Time of Release: Not reported
 Duration: Not reported
 Input By: Adia/Tom
 Date Input: 12/01/93
 Staff 1: Not reported
 Staff 2: Not reported
 Emergency Response: Not reported
 Initial Site Screening Team Rank: Not reported
 No Further Action: Not reported
 Priority: NFA
 Comments:
 File Section: Central
 Type: County
 Department 1: Not reported
 Department 2: Not reported
 Department 3: Sand Island WWTP
 Cost Recovery: Not reported
 Official Notification: Not reported
 Written Report: Not reported
 Confirmation Number: Not reported
 Pounds: Not reported
 Responsible Party: Not reported
 Manifest Document Number: Not reported
 Units: Not reported
 Standard Cause: Not reported
 Numerical Quantity: Not reported
 Zip Id: Not reported
 Initial Notification: Not reported
 Written Notification: Not reported
 Imminent And Substantial: Not reported
 Lat/Lon: Not reported
 Verification of source: Not reported
 Potential Quantity Amount: Not reported
 Potential Quantity Unit: Not reported
 Verification of source: Not reported
 Source Id: Not reported
 Responsible Party Name: Not reported
 RP Address: Not reported
 RP Contact: Not reported
 RP Phone Number: Not reported
 Verification Of RP: Not reported
 Responsible Party ID: Not reported
 Contractor Amount: Not reported
 Personnel Amount: Not reported
 Equipment Amount: Not reported

MAP FINDINGS

Map ID			
Direction			
Distance			
Distance (ft.)		Database(s)	EDR ID Number
Elevation	Site		EPA ID Number

SAND ISLAND W/W TREATMENT PLANT, (Continued)

S105262875

Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported

A4
Target
Property

SAND ISLAND WASTEWATER TREATMENT PL
16-1 SAND ISLAND PKY RD
HONOLULU, HI 96819

SPILLS S105262829
N/A

Site 4 of 4 in cluster A

HI SPILLS:

Reported Date:	Not reported
Case Number:	19930616-1
Island:	Oahu
Incident Description:	Transferring Diesel from AGT Tank to day tank for emergency. Overfilled so diesel went up vent line onto roof & spilled down to road through drains, asphalt, & the plant's road.
Cause:	Overfill of Day Tank
Substances:	Diesel
Quantity:	200 Gal
Media Affected:	Air, Soil, & Asphalt
Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	Not reported
Reported By:	Mike Nunn
Reporters Affiliation:	WWTP Plant Engineer
ERNS Number:	Not reported
Responder:	Rhonda Goyke & Mike Nunn
Responder Affiliation:	DOH-HEER & Treatment Plant Personnel
Initial Response:	Water Treatment Personnel cleaned up spill using absorbent sand. SA - Assessment must be done. Document adequately cleaned up. Will send them the short form to fill out.
Release Date:	06/15/93 (Overnight)
Time of Release:	Not reported
Duration:	Not reported
Input By:	Adia/Tom
Date Input:	12/01/93
Staff 1:	Not reported
Staff 2:	Not reported
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported
No Further Action:	Not reported
Priority:	NFA
Comments:	
File Section:	Central
Type:	Private
Department 1:	CIC-WW Depart.
Department 2:	Not reported
Department 3:	Not reported
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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SAND ISLAND WASTEWATER TREATMENT PL (Continued)

S105262829

Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported

5
NW
< 1/8
336 ft.
Higher

TRANSOCEANIC CABLE SHIP CO
 1001 SAND ISLAND PKWY
 HONOLULU, HI 96819

RCRIS-SQG 1004688948
 FINDS HIR000000711

RCRIS:
 Owner: TRANSOCEANIC CABLE SHIP CO
 (201) 326-2463
 EPA ID: HIR000000711
 Contact: MARK BENNEDSEN
 (908) 396-4064

Classification: Small Quantity Generator
 Used Oil Recyc: No
 TSDf Activities: Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		Database(s) EDR ID Number EPA ID Number
--	------	--	---

TRANSOCEANIC CABLE SHIP CO (Continued) 1004688948
 Violation Status: No violations found

FINDS:
 Other Pertinent Environmental Activity Identified at Site:
 Facility Registry System (FRS)
 Resource Conservation and Recovery Act Information system (RCRAINFO)

B6 SE < 1/8 598 ft. Higher	JAMES L. K. TOM, INC. 125 ADAMS WAY HONOLULU, HI 96820 Site 1 of 4 in cluster B	LUST 1001208516 MLTS N/A
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MLTS:

License Number: 25-26951-01 License Date: 10/09/1991 License Expires: 02/28/1994 License Use: Not reported Department: Not reported Contact Name: TERRY C. JOHNSON States Allowing Use: Not reported Store Material: No Redistribution: No Burial: No Last Inspection: Not reported Inspector Name: Not reported Next Inspection: 12/1992	First License Date: 02/28/1989 Institution Code: 26951 Primary Program: Measuring Systems Portable Gauges Building: Not reported Contact Phone: 408-586-3212 Incineration: No
---	--

License Number: 53-23229-01 License Date: 06/25/1980 License Expires: 08/31/1990 License Use: Not reported Department: Not reported Contact Name: RICHARD CABANILLA States Allowing Use: Not reported Store Material: No Redistribution: No Burial: No Last Inspection: 02/1989 Inspector Name: PANG Next Inspection: 02/1993	First License Date: 08/02/1985 Institution Code: 23229 Primary Program: Measuring Systems Portable Gauges Building: P. O. BOX 30408 Contact Phone: 808-845-9748 Incineration: No
---	---

LUST:
 Facility ID: 9-101337
 Alternate Event ID: 980062
 Facility Status: Site Cleanup Completed
 Project Officer: Fu

B7 SE < 1/8 615 ft. Higher	JAMES L. K. TOM, INC. 358 HOOKELA PLACE (FORMERLY 125 ADAMS WAY) HONOLULU, HI 96819 Site 2 of 4 in cluster B	UST U001235449 N/A
--	--	-----------------------

UST:

Facility ID: 9-101337 Tank Status: Permanently Out of Use Tank Capacity: 500 Date Closed: 2/12/98	Tank ID: R-1 Installed: 3/26/79 Substance: Gasoline
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MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	Elevation	Site	Database(s)	EDR ID Number	EPA ID Number
					JAMES L. K. TOM, INC. (Continued)		U001235449	
					Owner: JAMES L. K. TOM, INC. Facility ID: 9-101337 Tank Status: Permanently Out of Use Tank Capacity: 2000 Date Closed: Not reported Owner: JAMES L. K. TOM, INC.	Tank ID: R-2 Installed: 3/26/79 Substance: Diesel		
					Facility ID: 9-101337 Tank Status: Permanently Out of Use Tank Capacity: 1000 Date Closed: 2/12/98 Owner: JAMES L. K. TOM, INC.	Tank ID: R-3 Installed: Not reported Substance: Not Listed		
B8	SE	1/8-1/4	678 ft.	Higher	COAST & COAST SERVICE 122 ADAMS WY HONOLULU, HI 96819 Site 3 of 4 in cluster B	UST	U001235102	N/A
					UST: Facility ID: 9-100220 Tank Status: Permanently Out of Use Tank Capacity: 2800 Date Closed: Not reported Owner: COAST & COAST SERVICE	Tank ID: R-1 Installed: 12/15/67 Substance: Diesel		
B9	SE	1/8-1/4	735 ft.	Higher	ACE TOWING SERVICE INC 120 ADAMS WAY HONOLULU, HI 96817 Site 4 of 4 in cluster B	RCRIS-SQG FINDS	1000134171 HID981654791	
					RCRIS: Owner: HISAKO FUJIMOTO (415) 555-1212 EPA ID: HID981654791 Contact: HISAKO FUJIMOTO (808) 455-2614 Classification: Small Quantity Generator Used Oil Recyc: No TSDF Activities: Not reported Violation Status: No violations found			
					FINDS: Other Pertinent Environmental Activity Identified at Site: Facility Registry System (FRS) Resource Conservation and Recovery Act Information system (RCRAINFO)			
10	SE	1/8-1/4	886 ft.	Higher	FUJISHIGE TRUCKING CO, LTD. 117 ADAMS WY HONOLULU, HI 96819	LUST UST	U001235207 N/A	

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		Database(s)	EDR ID Number EPA ID Number
--	------	--	-------------	--------------------------------

FUJISHIGE TRUCKING CO, LTD. (Continued)

U001235207

LUST:
 Facility ID: 9-100734
 Alternate Event ID: 930086
 Facility Status: Site Cleanup Completed
 Project Officer: Seid

UST:	Facility ID: 9-100734	Tank ID: R-1	
	Tank Status: Permanently Out of Use	Installed: 5/8/71	
	Tank Capacity: 1000	Substance: Diesel	
	Date Closed: 7/9/93		
	Owner: FUJISHIGE TRUCKING CO, LTD.		

	Facility ID: 9-100734	Tank ID: R-3	
	Tank Status: Permanently Out of Use	Installed: 5/8/71	
	Tank Capacity: 1000	Substance: Gasoline	
	Date Closed: 7/9/93		
	Owner: FUJISHIGE TRUCKING CO, LTD.		

	Facility ID: 9-100734	Tank ID: R-2	
	Tank Status: Permanently Out of Use	Installed: 5/8/71	
	Tank Capacity: 1000	Substance: Gasoline	
	Date Closed: 7/9/93		
	Owner: FUJISHIGE TRUCKING CO, LTD.		

11
 WNW
 1/8-1/4
 1152 ft.
 Higher

1X SAND ISLAND BUSINESS ASSOCIATION
 1150 SAND ISLAND PARKWAY
 HONOLULU, HI 96819

HAZNET S104584030
 N/A

HAZNET:
 Gepaid: HIC990203052
 Tepaid: CAD000088252
 Gen County: 99
 Tsd County: Los Angeles
 Tons: 0.1458
 Category: Tank bottom waste
 Disposal Method: Transfer Station
 Contact: SAND ISLAND BUSINESS ASSOC
 Telephone: (000) 000-0000
 Mailing Address: 1010 PAAPU ST
 HONOLULU, HI 96819
 County: 99

12
 NE
 1/8-1/4
 1309 ft.
 Higher

MATSON TERMINALS INC
 P.O. BOX 2630 PIER 52, SAND ISLAND
 HONOLULU, HI 96803

LUST S105043699
 N/A

LUST:
 Facility ID: 9-103703
 Alternate Event ID: 010032
 Facility Status: Site Cleanup Completed
 Project Officer: Fu

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
C13 SSE 1/4-1/2 1726 ft. Higher	HONOLULU DISPOSAL SERVICE, INC. 214 HOOKAHI WY HONOLULU, HI 96819 Site 1 of 2 in cluster C LUST: Facility ID: 9-100241 Alternate Event ID: 930049 Facility Status: LUST Cleanup Initiated: Petroleum Project Officer: Fu UST: Facility ID: 9-100241 Tank ID: R-3 Tank Status: Permanently Out of Use Installed: 5/19/81 Tank Capacity: 4000 Substance: Gasoline Date Closed: 1/20/93 Owner: HONOLULU DISPOSAL SERVICE, INC. Facility ID: 9-100241 Tank ID: R-2 Tank Status: Permanently Out of Use Installed: 5/19/80 Tank Capacity: 2000 Substance: Diesel Date Closed: 1/20/93 Owner: HONOLULU DISPOSAL SERVICE, INC. Facility ID: 9-100241 Tank ID: R-1 Tank Status: Permanently Out of Use Installed: 5/19/80 Tank Capacity: 3000 Substance: Diesel Date Closed: 1/20/93 Owner: HONOLULU DISPOSAL SERVICE, INC.	LUST UST	U001235113 N/A
C14 SSE 1/4-1/2 1732 ft. Higher	BILL'S CRANE SERVICE, INC. 1071 MAKEPONO (PREVIOUS 212 HOOKAHI HONOLULU, HI 96819 Site 2 of 2 in cluster C LUST: Facility ID: 9-100767 Alternate Event ID: 980043 Facility Status: Site Cleanup Completed Project Officer: Maniult	LUST	S103455010 N/A
15 ENE 1/4-1/2 2326 ft. Higher	PAULEY PETROLEUM PIER 32-33 HONOLULU, HI SHWS: File Section : Central Type : Private Department 1 : Not reported Department 2 : Not reported Department 3 : Not reported Table : Sitelist Island : Oahu Zip : Not reported Discovery Assessment and Remediation : Not reported Initial Site Screening Team Lead : Not reported ISST Assigned : Not reported	SHWS	S104534340 N/A

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

PAULEY PETROLEUM (Continued)

S104534340

ISST Date :	7/28/95
ISST Priority :	Medium
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assessment :	No
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	No
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remedial Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	Not reported
Input By :	Not reported
Case :	Not reported
Fed Id :	Not reported
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	Not reported
Priority :	Medium
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	Not reported
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Not reported
Tax Map Key :	Not reported
Form :	Not reported
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported
Targets :	Not reported
Manager :	Not reported
REM Result :	Not reported
Identifier :	Not reported
Site Code :	CA
Event :	Not reported
Event Type :	Not reported
Notes :	Not reported
Site :	Not reported
Site_ :	Not reported
Operator :	Not reported
Current :	Not reported
Compounds :	Not reported
Oname :	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

18 U.S. COAST GUARD BASE HONOLULU
 SSE SAND ISLAND
 1/2-1 HONOLULU, HI 96819
 3089 ft.
 Higher

SHWS U003541746
 UST N/A

SHWS:

File Section :	Central
Type :	Federal
Department 1 :	Transportation
Department 2 :	Coast Guard
Department 3 :	U.S. Coast Guard ISC Honolulu
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assesment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assesment :	Yes
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	Not reported
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	Not reported
Input By :	Not reported
Case :	Not reported
Fed Id :	HID984468890
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	Not reported
Priority :	Not reported
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	Not reported
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Not reported
Tax Map Key :	Not reported
Form :	Not reported
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)

EDR ID Number
 EPA ID Number

U.S. COAST GUARD BASE HONOLULU (Continued)

U003541746

Targets : Not reported
 Manager : Liz Galvez
 REM Result : Not reported
 Identifier : Not reported
 Site Code : Not reported
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

UST:

Facility ID:	9-101798	Tank ID:	R-NAFA-2
Tank Status:	Permanently Out of Use	Installed:	5/1/63
Tank Capacity:	4000	Substance:	Gasoline
Date Closed:	2/28/89		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		
Facility ID:	9-101798	Tank ID:	R-OOD
Tank Status:	Permanently Out of Use	Installed:	12/30/60
Tank Capacity:	1000	Substance:	Diesel
Date Closed:	12/30/83		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		
Facility ID:	9-101798	Tank ID:	R-IND-1
Tank Status:	Permanently Out of Use	Installed:	5/6/64
Tank Capacity:	1000	Substance:	Diesel
Date Closed:	9/16/88		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		
Facility ID:	9-101798	Tank ID:	R-FE-REG
Tank Status:	Permanently Out of Use	Installed:	5/1/70
Tank Capacity:	1000	Substance:	Gasoline
Date Closed:	1/1/89		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		
Facility ID:	9-101798	Tank ID:	NAFA-4
Tank Status:	Currently In Use	Installed:	5/1/89
Tank Capacity:	6000	Substance:	Gasoline
Date Closed:	Not reported		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		
Facility ID:	9-101798	Tank ID:	R-FE-UNL
Tank Status:	Permanently Out of Use	Installed:	5/1/70
Tank Capacity:	2000	Substance:	Gasoline
Date Closed:	1/1/89		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		
Facility ID:	9-101798	Tank ID:	R-NAFA-1
Tank Status:	Permanently Out of Use	Installed:	5/1/63
Tank Capacity:	4000	Substance:	Gasoline
Date Closed:	2/1/89		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

U.S. COAST GUARD BASE HONOLULU (Continued)

U003541746

Facility ID:	9-101798	Tank ID:	NAFA-3
Tank Status:	Currently In Use	Installed:	5/1/89
Tank Capacity:	6000	Substance:	Gasoline
Date Closed:	Not reported		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		

Facility ID:	9-101798	Tank ID:	R-IND-2
Tank Status:	Permanently Out of Use	Installed:	5/2/67
Tank Capacity:	350	Substance:	Diesel
Date Closed:	8/30/89		
Owner:	U.S. COAST GUARD BASE EXCHANGE SYSTEM		

17
 ENE
 1/2-1
 3308 ft.
 Higher

SHELL OIL CO.
 789 NIMITZ HWY
 HONOLULU, HI 96801

SHWS S104534379
 N/A

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assesment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assesment :	No
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	No
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	12/01/93
Input By :	Adia/Tom
Case :	Not reported
Fed Id :	HID00831855
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

SHELL OIL CO. (Continued)

S104534378

Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : Private
 Tax Map Key : Not reported
 Form : Tom/Tricia
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported
 Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : CA
 Event : Not reported
 Event Type : DS1 02/01/80 PA1 05/01/85 PA2 09/01/88 SI1 08/31/89
 Notes : Not reported
 Site : Not reported
 Site_ : Marketing & Storage of Petroleum Products- using currently above ground storage tanks.
 Operator : Same as Owner
 Current : Not reported
 Compounds : Not reported
 Oname : Shell Oil Company 789 Nimitz Hwy Honolulu, HI 96817 Bill Hammond - Hi Operations Mgr (808) 537-3911

18
 ENE
 1/2-1
 3679 ft.
 Higher

BHP HAWAII TERMINALS PIPELINE PUNCT
 739 NORTH NIMITZ HIGHWAY
 HONOLULU, HI 96817

SHWS S104657400
 SPILLS N/A

SHWS:
 File Section : Central
 Type : Private
 Department 1 : BHP
 Department 2 : Not reported
 Department 3 : Not reported
 Table : Sitelist
 Island : Oahu
 Zip : Not reported
 Discovery Assesment and Remediation : Not reported
 Initial Site Screening Team Lead : Not reported
 ISST Assigned : Not reported
 ISST Date : 8/26/97
 ISST Priority : NFA
 ISST Letter : Not reported
 Env Justice Eligible : Not reported
 Preliminary Assesment : Not reported
 PA Lead : Not reported
 PA Date : Not reported
 PA Result : Not reported
 Site Investigation : Not reported
 SI Lead : Not reported
 SI Date : Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

BHP HAWAII TERMINALS PIPELINE PUNCT (Continued)

S104657400

SI Result : Not reported
 Remediation Action Planned : Not reported
 VRP : Not reported
 Brownfields : Not reported
 Agreement : Not reported
 Remedial Investigation : Not reported
 RAA : Not reported
 Response Action Memo : Not reported
 REM Lead : Not reported
 REM Date : Not reported
 REM Last Update : 5/12/97
 Input By : Marsha Graf
 Case : 19970411-1331
 Fed Id : Not reported
 UST : Not reported
 Permits : Not reported
 RCRA : Not reported
 Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : Not reported
 Tax Map Key : Not reported
 Form : Not reported
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported
 Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : Not reported
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

HI SPILLS:

Reported Date: 03/17/97
 Case Number: 19970117-1130
 Island: Oahu
 Incident Description: NRC reported a release of an unknown amount of an unknown oil to the water after contaminated subsurface soil was disturbed.
 Cause: Disturbed contaminated subsurface soil has caused a sheen to form on the water.
 Substances: Oil
 Quantity: Unknown
 Media Affected: Ocean
 Reportable Quantity: sheen
 Category: Not reported
 Spill?: Yes

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

BHP HAWAII TERMINALS PIPELINE PUNCT (Continued)

S104857400

Reported By: NRC/Richard Rosen
Reporters Affiliation: USCG/BHP
ERNS Number: 380582
Responder:
Responder Affiliation:
Initial Response: At the time this notification was recorded the rpt. from NRC stated BHP would put booms out to contain the material so it could be cleaned. The assumption is made they did so.

Release Date: 03/17/97
Time of Release: 11:30 AM
Duration: Not reported
Input By: Tricia Nagatani
Date Input: 03/19/97
Staff 1: Mike Cripps
Staff 2: Not reported
Emergency Response: No
Initial Site Screening Team Rank: No
No Further Action: NFA
Priority: NFA
Comments: BHP responded to contain the material on the water.
File Section: Central
Type: Private
Department 1: BHP
Department 2: Not reported
Department 3: Not reported
Cost Recovery: Not reported
Official Notification: Yes
Written Report: Not reported
Confirmation Number: Not reported
Pounds: Not reported
Responsible Party: Not reported
Manifest Document Number: Not reported
Units: Not reported
Standard Cause: Not reported
Numerical Quantity: Not reported
Zip Id: Not reported
Initial Notification: Not reported
Written Notification: Not reported
Imminent And Substantial: Not reported
Lat/Lon: Not reported
Verification of source: Not reported
Potential Quantity Amount: Not reported
Potential Quantity Unit: Not reported
Verification of source: Not reported
Source Id: Not reported
Responsible Party Name: Not reported
RP Address: Not reported
RP Contact: Not reported
RP Phone Number: Not reported
Verification Of RP: Not reported
Responsible Party ID: Not reported
Contractor Amount: Not reported
Personnel Amount: Not reported
Equipment Amount: Not reported
Travel Amount: Not reported
Miscellaneous Amount: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

BHP HAWAII TERMINALS PIPELINE PUNCT (Continued)

S104657400

Federal Project Number: Not reported
 Pollution Removal Funding Auth: Not reported
 Authorization Date: Not reported
 Authorization Ceiling: Not reported
 Identifier: Not reported
 Total Environment Revolving Response Fund: 0

Reported Date: 04/11/97
 Case Number: 19970411-1331
 Island: Oahu
 Incident Description: Contractor accidentally punctured an unmarked underground pipeline releasing its contents.
 Cause: Accidental puncture of pipeline
 Substances: Black Oil
 Quantity: est. 1000 gals
 Media Affected: Soil
 Reportable Quantity: 25 gallons
 Category: Not reported
 Spill?: Yes
 Reported By: Rich Rosen
 Reporters Affiliation: BHP
 ERNS Number: Not reported
 Responder: Chevron
 Responder Affiliation:
 Initial Response: Flow stopped by Chevron by turning valve off. Contaminated soils excavated in place on plastic.

Release Date: 04/11/97
 Time of Release: 1:31
 Duration: Not reported
 Input By: Tricia Nagatani
 Date Input: 04/17/97
 Staff 1: Terry Corpus
 Staff 2: Not reported
 Emergency Response: No
 Initial Site Screening Team Rank: No
 No Further Action: NFA
 Priority: NFA
 Comments: Based on the letter dated 05/09/97, recommend NFA. All contaminated soil removed and disposed of properly.

File Section: Central
 Type: Private
 Department 1: BHP
 Department 2: Not reported
 Department 3: Tesoro Hawaii Corporation Refinery (Kapolei)
 Cost Recovery: Not reported
 Official Notification: Yes
 Written Report: 05/12/97
 Confirmation Number: 317
 Pounds: Not reported
 Responsible Party: Yes
 Manifest Document Number: Not reported
 Units: Gallons
 Standard Cause: Not reported
 Numerical Quantity: Not reported
 Zip Id: Not reported
 Initial Notification: Not reported
 Written Notification: Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

BHP HAWAII TERMINALS PIPELINE PUNCT (Continued)

S104657400

Imminent And Substantial: Not reported
 Lat/Lon: Not reported
 Verification of source: Not reported
 Potential Quantity Amount: Not reported
 Potential Quantity Unit: Not reported
 Verification of source: Not reported
 Source Id: Not reported
 Responsible Party Name: Not reported
 RP Address: Not reported
 RP Contact: Not reported
 RP Phone Number: Not reported
 Verification Of RP: Not reported
 Responsible Party ID: Not reported
 Contractor Amount: Not reported
 Personnel Amount: Not reported
 Equipment Amount: Not reported
 Travel Amount: Not reported
 Miscellaneous Amount: Not reported
 Federal Project Number: Not reported
 Pollution Removal Funding Auth: Not reported
 Authorization Date: Not reported
 Authorization Ceiling: Not reported
 Identifier: Not reported
 Total Environment Revolving Response Fund: 0

19
 NE
 1/2-1
 3778 ft.
 Higher

CHEVRON PRODUCTS CO KAPALAMA TERMINAL
 1105 N NIMITZ HWY
 HONOLULU, HI 96817

RCRIS-SQG 1000434550
 SHWS HIT000615328
 FINDS
 SPILLS

RCRIS:

Owner: CHEVRON PRODUCTS COMPANY
 (808) 527-2700
 EPA ID: HIT000615328
 Contact: CLARENCE CHONG
 (808) 527-2747

Classification: Small Quantity Generator
 Used Oil Recyc: No
 TSDF Activities: Not reported
 Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:
 Facility Registry System (FRS)
 Resource Conservation and Recovery Act Information system (RCRAINFO)

SHWS:

File Section : Central
 Type : Private
 Department 1 : Not reported
 Department 2 : Not reported
 Department 3 : Chevron Kapalama Fuel Terminal
 Table : Site/ist
 Island : Oahu
 Zip : Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

CHEVRON PRODUCTS CO KAPALAMA TERMINAL (Continued)

1000434550

Discovery Assessment and Remediation : Not reported
 Initial Site Screening Team Lead : Not reported
 ISST Assigned : Not reported
 ISST Date : Not reported
 ISST Priority : Not reported
 ISST Letter : Not reported
 Env Justice Eligible : Not reported
 Preliminary Assessment : Not reported
 PA Lead : Not reported
 PA Date : Not reported
 PA Result : Not reported
 Site Investigation : Not reported
 SI Lead : Not reported
 SI Date : Not reported
 SI Result : Not reported
 Remediation Action Planned : Not reported
 VRP : Not reported
 Brownfields : Not reported
 Agreement : Not reported
 Remedial Investigation : Not reported
 RAA : Not reported
 Response Action Memo : Not reported
 REM Lead : Not reported
 REM Date : Not reported
 REM Last Update : Not reported
 Input By : Not reported
 Case : 19930402-1
 Fed Id : Not reported
 UST : Not reported
 Permits : Not reported
 RCRA : Not reported
 Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : Not reported
 Tax Map Key : Not reported
 Form : Not reported
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported
 Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : Not reported
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

CHEVRON PRODUCTS CO KAPALAMA TERMINAL (Continued)

1000434550

Oname :	Not reported
HI SPILLS:	
Reported Date:	Not reported
Case Number:	19930315
Island:	Oahu
Incident Description:	Old Chronic Jet Fuel for Remediation
Cause:	Water /Oil Separator of Fuel Tank Leaks
Substances:	JET A FUEL
Quantity:	Unk
Media Affected:	Soil (Land)
Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	Not reported
Reported By:	Terry Barbour
Reporters Affiliation:	Chevron
ERNS Number:	Not reported
Responder:	Mike Cripps
Responder Affiliation:	HEER, CHEVRON, & OGDEN
Initial Response:	Chevron to dig up and bioremediate 1500 cubic yds of grossly contaminated soil using Ogden Co. as thier Environmental Consultant. Also will do Risk Assessment on remaining levels.
Release Date:	930315.00
Time of Release:	Not reported
Duration:	Not reported
Input By:	Adia/Tom
Date Input:	12/01/93
Staff 1:	Not reported
Staff 2:	Not reported
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported
No Further Action:	Not reported
Priority:	NFA
Comments:	
File Section:	Single
Type:	Not reported
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Not reported
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Not reported
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

CHEVRON PRODUCTS CO KAPALAMA TERMINAL (Continued)

1000434550

Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported
Reported Date:	Not reported
Case Number:	19891225-1
Island:	Oahu
Incident Description:	Pipeline leak
Cause:	VALVE OPENED IN ERROR.
Substances:	OIL, LOW SULFUR, HIGH VISCOSITY
Quantity:	30-50 bbls.
Media Affected:	GROUND
Reportable Quantity:	Y
Category:	Not reported
Spill ?:	Not reported
Reported By:	MATSUYAMA, BOYD
Reporters Affiliation:	CHEVRON USA
ERNS Number:	Not reported
Responder:	
Responder Affiliation:	
Initial Response:	CHEVRON CLEANED UP (ON THEIR PROPERTY).
Release Date:	Not reported
Time of Release:	Not reported
Duration:	Not reported
Input By:	Contract/Phil
Date Input:	Not reported
Staff 1:	Not reported
Staff 2:	Not reported
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported
No Further Action:	Not reported
Priority:	NFA
Comments:	
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Not reported
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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CHEVRON PRODUCTS CO KAPALAMA TERMINAL (Continued) 1000434550

Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Not reported
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported

20
North
1/2-1
3964 ft.
Higher

PIER 35
NIMITZ BLVD
HONOLULU, HI 96706

SHWS 1000350839
N/A

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assesment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assesment :	No

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

PIER 35 (Continued)

1000350839

PA Lead : Not reported
 PA Date : Not reported
 PA Result : Not reported
 Site Investigation : No
 SI Lead : Not reported
 SI Date : Not reported
 SI Result : Not reported
 Remediation Action Planned : Not reported
 VRP : Not reported
 Brownfields : Not reported
 Agreement : Not reported
 Remedial Investigation : Not reported
 RAA : Not reported
 Response Action Memo : Not reported
 REM Lead : Not reported
 REM Date : Not reported
 REM Last Update : Not reported
 Input By : Not reported
 Case : Not reported
 Fed Id : Not reported
 UST : Not reported
 Permits : Not reported
 RCRA : Not reported
 Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : Not reported
 Tax Map Key : Not reported
 Form : Not reported
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported
 Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : CA
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

D21 HONOLULU HARBOR
 ENE 705 N NIMITZ HWY
 1/2-1 HONOLULU, HI 96817
 3995 ft.
 Higher Site 1 of 3 in cluster D

RCRIS-SQG 1000921763
 SHWS HID066275983
 FINDS

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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HONOLULU HARBOR (Continued)

1000921763

Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	Not reported
Input By :	Not reported
Case :	Not reported
Fed Id :	Not reported
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	Not reported
Priority :	Not reported
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	Not reported
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Not reported
Tax Map Key :	Not reported
Form :	Not reported
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported
Targets :	Not reported
Manager :	Not reported
REM Result :	Not reported
Identifier :	Not reported
Site Code :	CA
Event :	Not reported
Event Type :	Not reported
Notes :	Not reported
Site :	Not reported
Site_ :	Not reported
Operator :	Not reported
Current :	Not reported
Compounds :	Not reported
Oname :	Not reported

D22
ENE
1/2-1
3995 ft.
Higher

HAWAIIAN TUG & BARGE CORP
705 N. NIMITZ HWY PIER 21
HONOLULU, HI 96817

Site 2 of 3 in cluster D

RCRIS:
 Owner: HAWAIIAN ELECTRIC INDUST.
 (415) 555-1212
 EPA ID: HID982411357
 Contact: DAN BRECHTEL
 (808) 543-9311

Classification: Small Quantity Generator
 Used Oil Recyc: No
 TSDF Activities: Not reported

RCRIS-SQG 1000146699
 SHWS HID982411357
 FINDS
 SPILLS

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

HAWAIIAN TUG & BARGE CORP (Continued)

1000146899

Violation Status: Violations exist

Regulation Violated:	279.20-24
Area of Violation:	09UOG
Date Violation Determined:	07/12/2001
Actual Date Achieved Compliance:	08/14/2001
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	07/12/2001
Penalty Type:	Not reported
Regulation Violated:	262.10-12.A
Area of Violation:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined:	02/04/1988
Actual Date Achieved Compliance:	04/28/2001

There are 2 violation record(s) reported at this site:

<u>Evaluation</u>	<u>Area of Violation</u>	<u>Date of Compliance</u>
Compliance Evaluation Inspection	09UOG	20010814
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	20010428

FINDS:

Other Pertinent Environmental Activity Identified at Site:
 Facility Registry System (FRS)
 Resource Conservation and Recovery Act Information system (RCRAINFO)

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assessment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assessment :	Not reported
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	Not reported
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

HAWAIIAN TUG & BARGE CORP (Continued)

1000148889

REM Date : Not reported
 REM Last Update : 9/2/89
 Input By : Tammie Dao
 Case : 94-1126
 Fed Id : Not reported
 UST : Not reported
 Permits : Not reported
 RCRA : Not reported
 Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : Not reported
 Tax Map Key : Not reported
 Form : Not reported
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported
 Manager : Not reported
 REM Result : Not reported
 Identifier : Not reported
 Site Code : CA
 Event : Not reported
 Event Type : Not reported
 Notes : Not reported
 Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

HI SPILLS:

Reported Date: Not reported
 Case Number: 19941126
 Island: Oahu
 Incident Description: Fuel mixture leaching from soil/storm drain at Pier 26.
 Cause:
 Substances: Diesel #2, #6, Bunker Fuel
 Quantity: 150 Gal.
 Media Affected: Not reported
 Reportable Quantity: Not reported
 Category: Not reported
 Spill?: Not reported
 Reported By: Not reported
 Reporters Affiliation: Not reported
 ERNS Number: Not reported
 Responder:
 Responder Affiliation:
 Initial Response: USCG responded to control spill. Spill is ongoing; no source was determined.
 Penco maintains boom at outfall.
 Release Date: 11/26/94
 Time of Release: Not reported
 Duration: Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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HAWAIIAN TUG & BARGE CORP (Continued)

1000146699

Input By:	MJM
Date Input:	03/06/96
Staff 1:	Bill Perry
Staff 2:	Bill Perry
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported
No Further Action:	Not reported
Priority:	NFA
Comments:	
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Not reported
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported

D23
 ENE
 1/2-1
 4032 ft.
 Higher

FRED L. WALDRON FEED MILL
 701 N. NIMITZ HWY
 HONOLULU, HI 96817

Site 3 of 3 in cluster D

SHWS S104534149
 N/A

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

FRED L. WALDRON FEED MILL (Continued)

S104534149

SHWS:
 File Section : Central
 Type : Private
 Department 1 : Not reported
 Department 2 : Not reported
 Department 3 : Not reported
 Table : Site/ist
 Island : Oahu
 Zip : Not reported
 Discovery Assesment and Remediation : Not reported
 Initial Site Screening Team Lead : Not reported
 ISST Assigned : Not reported
 ISST Date : Not reported
 ISST Priority : Not reported
 ISST Letter : Not reported
 Env Justice Eligible : Not reported
 Preliminary Assesment : Not reported
 PA Lead : Not reported
 PA Date : Not reported
 PA Result : Not reported
 Site Investigation : Not reported
 SI Lead : Not reported
 SI Date : Not reported
 SI Result : Not reported
 Remediation Action Planned : Not reported
 VRP : Not reported
 Brownfields : Not reported
 Agreement : Not reported
 Remedial Investigation : Not reported
 RAA : Not reported
 Response Action Memo : Not reported
 REM Lead : Not reported
 REM Date : Not reported
 REM Last Update : 10/16/98
 Input By : TDao
 Case : Not reported
 Fed Id : Not reported
 UST : Fac. ID#9-100852.
 Permits : Not reported
 RCRA : Not reported
 Program : Not reported
 Priority : Not reported
 Lat/Long : Not reported
 Cost : Not reported
 CU QNTY Site : Not reported
 Enforcement : Not reported
 CU Method : Not reported
 Ownership : O'Lakes Corp.
 Tax Map Key : Not reported
 Form : Not reported
 EPCRA : Not reported
 EPCRA FIL : Not reported
 Pathways : Not reported
 Targets : Not reported
 Manager : Charley Langer
 REM Result : Not reported
 Identifier :

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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FRED L. WALDRON FEED MILL (Continued)

S104534149

Site Code :	CA
Event :	Not reported
Event Type :	UST Release ID#920157.
Notes :	Case transferred from SHWB/UST to HEER Ofc.
Site :	Not reported
Site_ :	Not reported
Operator :	Not reported
Current :	Not reported
Compounds :	Not reported
Oname :	O'Lakes Corp.

E24
ENE
1/2-1
4063 ft.
Higher

PICRIC ACID AT BREWER CHEMICAL
311 PACIFIC STREET
HONOLULU, HI 96817
 Site 1 of 2 in cluster E

SHWS S104534353
N/A

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assessment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assessment :	No
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	No
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	12/14/93
Input By :	Adia/Tom
Case :	Not reported
Fed Id :	Not reported
UST :	No
Permits :	Unk
RCRA :	Unk
Program :	HEER
Priority :	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		Database(s)	EDR ID Number EPA ID Number
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PICRIC ACID AT BREWER CHEMICAL (Continued)

8104534353

Lat/Long :	Not reported
Cost :	Unk
CU QNTY Site :	Not reported
Enforcement :	None
CU Method :	removal / detonation
Ownership :	Unk
Tax Map Key :	Not reported
Form :	Tom/Terry
EPCRA :	Unk
EPCRA FIL :	Unk
Pathways :	Not reported
Targets :	Not reported
Manager :	Terry Corpus
REM Result :	Not reported
Identifier :	Not reported
Site Code :	Not reported
Event :	Penco
Event Type :	Complete
Notes :	Detonated
Site :	While cleaning chemical storage room
Site_ :	Private/Commercial
Operator :	See Above
Current :	Not reported
Compounds :	picric acid
Oname :	Unk

E25 BREWER CHEM CORP
ENE 311 PACIFIC ST
1/2-1 HONOLULU, HI 96810
4063 ft.
Higher

SHWS 1000436248
SPILLS N/A

Site 2 of 2 in cluster E

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Site/ist
Island :	Oahu
Zip :	Not reported
Discovery Assesment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	12/29/95
ISST Priority :	Medium
ISST Letter :	Not reported
Env Justice Ellgible :	Not reported
Praillinary Assesment :	No
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	No
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (R.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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BREWER CHEM CORP (Continued)

1000436248

Agreement : Remedial Investigation : RAA : Response Action Memo : REM Lead : REM Date : REM Last Update : Input By : Case : Fed Id : UST : Permits : RCRA : Program : Priority : Lat/Long : Cost : CU QNTY Site : Enforcement : CU Method : Ownership : Tax Map Key : Form : EPCRA : EPCRA FIL : Pathways : Targets : Manager : REM Result : Identifier : Site Code : Event : Event Type : Notes : Site : Site_ : Operator : Current : Compounds : Oname : HI SPILLS: Reported Date: Case Number: Island: Incident Description: Cause: Substances: Quantity: Media Affected:	Not reported Not reported Not reported Not reported Not reported Not reported 01/30/95 MJM Not reported HID059472357 Not reported Not reported Not reported HEER Medium Not reported Not reported 6.5 55-gallon drums Not reported geological survey was inconclusive. Not reported Not reported Tom/Tricia Not reported Not reported Not reported Not reported Not reported Not reported Not reported CA Ecology & Environment Inc. ; 717 W. Temple St., Los Angeles, Ca, 90012 Tel: 213-481-3870 DS1 02/01/80 PA1 05/01/85 PA2 11/02/88 S11 09/25/89 Quantity & location of buried drums containing haz wastes is not verified or documented. Site was inspected and determined not to pose an immediate threat to public or environment. EPA recommended NFA at site on 9/25/89. In operation since 1890. Fertilizer & chemicals are formulated on site. 7 ea drums were suspected to have been buried on adjacent property containing haz waste. Sample did not detect haz substances (soil & water). An HRS screening of Not reported Ken Higan (Operations Mgr.) Pacific Avenue Union Oil Co., Honolulu, HI Contact: Same (808) 522-7600 Not reported suspected caustic cleaning compound, sulfuric acid, malathion, buried on site (suspected) Not reported 10/31/85 19851031 Oahu Rusted cylinder bottom. Chlorine 150 Pounds Air
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MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

1000436248

BREWER CHEM CORP (Continued)

Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	Yes
Reported By:	Not reported
Reporters Affiliation:	Pier 35
ERNS Number:	Not reported
Responder:	
Responder Affiliation:	
Initial Response:	
Release Date:	Not reported
Time of Release:	Not reported
Duration:	Not reported
Input By:	Not reported
Date Input:	Not reported
Staff 1:	Bill Perry
Staff 2:	Not reported
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported
No Further Action:	Not reported
Priority:	NFA
Comments:	Initial call was for a bad chemical odor at Pier 35 area. HFD drove through plume when responding because the source was well upwind of the reported odor. Chlorine gas from a 150 pound cylinder was released through the rusted bottom. 3 HFD personnel were
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Brewer Environmental Industries, Pacific Street
Cost Recovery:	Not reported
Official Notification:	RP
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Courtesy
Manifest Document Number:	Not reported
Units:	Pounds
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip id:	Not reported
Initial Notification:	Yes
Written Notification:	Yes
Imminent And Substantial:	Yes
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Pounds
Verification of source:	Not reported
Source id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

BREWER CHEM CORP (Continued)

1000436248

Personnel Amount: Not reported
 Equipment Amount: Not reported
 Travel Amount: Not reported
 Miscellaneous Amount: Not reported
 Federal Project Number: Not reported
 Pollution Removal Funding Auth: Not reported
 Authorization Date: Not reported
 Authorization Ceiling: Not reported
 Identifier: Not reported
 Total Environment Revolving Response Fund: 0

Reported Date: 11/04/88
 Case Number: 19881104
 Island: Oahu
 Incident Description: Indoor Air Pollution
 Cause: UNKNOWN
 Substances: Hydrogen Sulfide
 Quantity: Unknown
 Media Affected: INDOORS
 Reportable Quantity: Not reported
 Category: Not reported
 Spill?: No
 Reported By: MARLENE
 Reporters Affiliation: BREWER CHEMICAL
 ERNS Number: Not reported
 Responder: HEER
 Responder Affiliation: HEER
 Initial Response: DRAEGER TUBES DIDN'T DETECT. MANAGER TO HANDLE PROBLEM.
 Release Date: Not reported
 Time of Release: Not reported
 Duration: Not reported
 Input By: Contract/Phil
 Date Input: Not reported
 Staff 1: Not reported
 Staff 2: Not reported
 Emergency Response: Not reported
 Initial Site Screening Team Rank: Not reported
 No Further Action: Not reported
 Priority: NFA
 Comments:
 File Section: Central
 Type: Private
 Department 1: Not reported
 Department 2: Not reported
 Department 3: Brewer Environmental Industries, Pacific Street
 Cost Recovery: Not reported
 Official Notification: Not reported
 Written Report: Not reported
 Confirmation Number: Not reported
 Pounds: Not reported
 Responsible Party: Yes
 Manifest Document Number: Not reported
 Units: Not reported
 Standard Cause: Not reported
 Numerical Quantity: Not reported
 Zip Id: Not reported
 Initial Notification: None

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

BREWER CHEM CORP (Continued)

1000436248

Written Notification: None
Imminent And Substantial: Not reported
Lat/Lon: Not reported
Verification of source: Not reported
Potential Quantity Amount: Not reported
Potential Quantity Unit: Not reported
Verification of source: Not reported
Source id: Not reported
Responsible Party Name: Not reported
RP Address: Not reported
RP Contact: Not reported
RP Phone Number: Not reported
Verification Of RP: Not reported
Responsible Party ID: Not reported
Contractor Amount: Not reported
Personnel Amount: Not reported
Equipment Amount: Not reported
Travel Amount: Not reported
Miscellaneous Amount: Not reported
Federal Project Number: Not reported
Pollution Removal Funding Auth: Not reported
Authorization Date: Not reported
Authorization Ceiling: Not reported
Identifier: Not reported
Total Environment Revolving Response Fund: Not reported

Reported Date: 04/07/92
Case Number: 18920407-1
Island: Oahu
Incident Description: Unk
Cause: Unk
Substances: Chlorine
Quantity: 25 Pounds
Media Affected: Air
Reportable Quantity: Not reported
Category: Not reported
Spill?: Yes
Reported By: Bruce Schileman
Reporters Affiliation: DOH / HEER
ERNS Number: Not reported
Responder: Bruce Schileman
Responder Affiliation: DOH-HEER
Initial Response: Notification Form not found. See Bruce Schileman for details.
Release Date: 04/07/92
Time of Release: Not reported
Duration: Not reported
Input By: Adia/Tom
Date Input: 12/01/93
Staff 1: Not reported
Staff 2: Not reported
Emergency Response: Not reported
Initial Site Screening Team Rank: Not reported
No Further Action: Not reported
Priority: NFA
Comments:
File Section: Central

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

BREWER CHEM CORP (Continued)

1000436248

Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Brewer Environmental Industries, Pacific Street
Cost Recovery:	Not reported
Official Notification:	RP
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Pounds
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	None
Written Notification:	Yes
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported
Reported Date:	02/23/93
Case Number:	19930223-25
Island:	Oahu
Incident Description:	The U.S. EPA Chemical Safety Audit at Brewer Environmental Industries, Inc. was held on Feb. 23-25, 1993.
Cause:	
Substances:	Not reported
Quantity:	Not reported
Media Affected:	Not reported
Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	No
Reported By:	Not reported
Reporters Affiliation:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

BREWER CHEM CORP (Continued)

1000436248

ERNS Number:	Not reported
Responder:	
Responder Affiliation:	
Initial Response:	
Release Date:	Not reported
Time of Release:	Not reported
Duration:	Not reported
Input By:	TDao
Date Input:	9/10/98
Staff 1:	Mike Cripps
Staff 2:	Not reported
Emergency Response:	No
Initial Site Screening Team Rank:	No
No Further Action:	Not reported
Priority:	Active
Comments:	
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Brewer Environmental Industries, Pacific Street
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Not reported
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	None
Written Notification:	None
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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BREWER CHEM CORP (Continued)

1000436248

Identifier: Not reported
 Total Environment Revolving Response Fund: Not reported

28
 ENE
 1/2-1
 4072 ft.
 Higher

UNOCAL 76 HONOLULU LRNG CTR
 411 PACIFIC ST
 HONOLULU, HI 96817

RCRIS-SQG 1000167494
 SHWS HID981852696
 SPILLS
 UST

RCRIS:

Owner: UNION OIL CO
 (415) 555-1212
 EPA ID: HID981852696
 Contact: A FRITZ
 (808) 522-7854

Classification: Small Quantity Generator
 Used Oil Recyc: No
 TSDF Activities: Not reported
 Violation Status: No violations found

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitellst
Island :	Oahu
Zip :	Not reported
Discovery Assesment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assesment :	No
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	No
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	12/01/93
Input By :	Adia/Tom
Case :	Not reported
Fed Id :	HID00833081

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	Not reported
Priority :	Not reported
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	Not reported
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Not reported
Tax Map Key :	Not reported
Form :	Tom/Tricia
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported
Targets :	Not reported
Manager :	Not reported
REM Result :	Not reported
Identifier :	Not reported
Site Code :	CA
Event :	Not reported
Event Type :	DS1 11/07/89
Notes :	Not reported
Site :	Not reported
Site_ :	Not reported
Operator :	Not reported
Current :	Not reported
Compounds :	Not reported
Oname :	Not reported

HI SPILLS:	Not reported
Reported Date:	19950120-2
Case Number:	Oahu
Island:	Oahu
Incident Description:	line broke in R234 additive, spill contained in diked area
Cause:	broken line
Substances:	Additive R-234
Quantity:	68 gallons
Media Affected:	soil
Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	Not reported
Reported By:	Deldre Kamana
Reporters Affiliation:	Unocal
ERNS Number:	Not reported
Responder:	
Responder Affiliation:	vacuumed product, IT hired by Unocal to clean up contaminated soils
Initial Response:	01/20/95
Release Date:	Not reported
Time of Release:	Not reported
Duration:	TKC
Input By:	04/19/95
Date Input:	Chris Takeno
Staff 1:	Not reported
Staff 2:	Not reported
Emergency Response:	Not reported
Initial Site Screening Team Rank:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

No Further Action:	NFA
Priority:	NFA
Comments:	
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Unocal Honolulu Terminal
Cost Recovery:	Not reported
Official Notification:	Not reported
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	Not reported
Reported Date:	05/17/96
Case Number:	19960517-1417
Island:	Oahu
Incident Description:	Contractors digging hole 6' x 6' x 4' Soil saturated with oil & water tide caused oil sheen.
Cause:	UNKN
Substances:	Petroleum product
Quantity:	UNKN
Media Affected:	Soil and Water
Reportable Quantity:	25 gallons

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

UNOCAL 78 HONOLULU LRNG CTR (Continued)

1000167484

Category:	Not reported
Spill ?:	Yes
Reported By:	Pat Iona
Reporters Affiliation:	Unocal
ERNS Number:	Not reported
Responder:	SOSC - Chris Takano
Responder Affiliation:	DOH - HEER
Initial Response:	All waste pumped out water/oil mixture and dug some of the mixture.
Release Date:	05/17/98
Time of Release:	2:17 PM
Duration:	UNKN
Input By:	Tricia Nagatani
Date Input:	06/03/98
Staff 1:	Chris Takano
Staff 2:	Not reported
Emergency Response:	No
Initial Site Screening Team Rank:	No
No Further Action:	NFA
Priority:	NFA
Comments:	
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Unocal Honolulu Terminal
Cost Recovery:	Not reported
Official Notification:	Yes
Written Report:	05/22/98
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Not reported
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	0
Reported Date:	08/04/97
Case Number:	19970714-1232
Island:	Oahu
Incident Description:	Tank truck diesel cargo compartment overfilled.
Cause:	
Substances:	Diesel Fuel #2
Quantity:	300 gallons
Media Affected:	Concrete
Reportable Quantity:	25 gallons
Category:	Not reported
Spill ?:	Yes
Reported By:	Mike Chang
Reporters Affiliation:	Unocal
ERNS Number:	395034
Responder:	Tosco Corporation
Responder Affiliation:	Unocal
Initial Response:	Material was contained under the load rack and ran into the loadrack sump tank. Aftwaste was hired to pump the sump and dispose of the diesel/water mixture at here CIP facility.
Release Date:	07/14/97
Time of Release:	1015
Duration:	Not reported
Input By:	Marsha Graf
Date Input:	8/4/97
Staff 1:	Liz Galvez
Staff 2:	Not reported
Emergency Response:	No
Initial Site Screening Team Rank:	No
No Further Action:	NFA
Priority:	NFA
Comments:	
File Section:	Single
Type:	Not reported
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Unocal Honolulu Terminal
Cost Recovery:	Not reported
Official Notification:	Yes
Written Report:	07/18/97
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Yes
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	0
Reported Date:	11/10/97
Case Number:	19971110-0947
Island:	Oahu
Incident Description:	Between tank farms 1923 and 1970. A 6 " above ground line unleaded gasoline line released about 20 gallons from a pinhole leak.
Cause:	Pinhole leak
Substances:	Gasoline, Unleaded
Quantity:	~20 gallons
Media Affected:	Soil
Reportable Quantity:	25 gallons
Category:	Not reported
Spill ?:	Yes
Reported By:	Pat Iona .
Reporters Affiliation:	TOSCO
ERNS Number:	410923
Responder:	TOSCO
Responder Affiliation:	
Initial Response:	Contractors onsite (Aitwaste). Draining line. Will blind then replace line. Soil will be collected for remediation by energy recovery or landfill.
Release Date:	11/10/97
Time of Release:	0830
Duration:	Not reported
Input By:	Marsha Graf
Date Input:	11/10/97
Staff 1:	Terry Corpus
Staff 2:	Not reported
Emergency Response:	No
Initial Site Screening Team Rank:	No
No Further Action:	NFA
Priority:	NFA
Comments:	Courtesy call will not be sending a written follow up.
File Section:	Central

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	TOSCO CORP.-Honolulu Terminal #0282
Cost Recovery:	Not reported
Official Notification:	Courtesy
Written Report:	Not reported
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Yes
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	Not reported
Written Notification:	Not reported
Imminent And Substantial:	Not reported
Lat/Lon:	Not reported
Verification of source:	Not reported
Potential Quantity Amount:	Not reported
Potential Quantity Unit:	Not reported
Verification of source:	Not reported
Source Id:	Not reported
Responsible Party Name:	Not reported
RP Address:	Not reported
RP Contact:	Not reported
RP Phone Number:	Not reported
Verification Of RP:	Not reported
Responsible Party ID:	Not reported
Contractor Amount:	Not reported
Personnel Amount:	Not reported
Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	0
Reported Date:	07/26/00
Case Number:	20000728-1404
Island:	Oahu
Incident Description:	While working on tank 2792, bolts were loosen on a 3" line running to the top of the tank (20' high). Fuel inside the 3" line was subsequently released. NRC report: While contractor was installing a slip blind on a fuel tank, the material was release
Cause:	
Substances:	Diesel & black oil
Quantity:	20-30 gal
Media Affected:	Soil
Reportable Quantity:	Not reported
Category:	Not reported
Spill ?:	Not reported

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

Reported By: Tat, Envrio. Manager
Reporters Affiliation: Tosco
ERNS Number: 538691
Responder:
Responder Affiliation:
Initial Response: Placed a catch pan under 3" line, vacuum truck pumping tank bottoms from same tank, was used to pump liquid accumulating in catch pan. Spilled fuel cleaned up. NRC report: contained, material spilled into second containment, clean up, crew on site.
Release Date: 07/28/00
Time of Release: 13:50
Duration: 5 min.
Input By: Sharon Leonida
Date Input: 07/27/2000 12:27:53 PM
Staff 1: Terry Corpus
Staff 2: Not reported
Emergency Response: Not reported
Initial Site Screening Team Rank: Not reported
No Further Action: Not reported
Priority: NFA
Comments: Written 8/2/00: confirmed abandoned line was loosen and fuel in line spilled when contractor was inserting slip blind. Clean-up completed 7/28/00, 15:20 hrs. Vacuum truck for liquide, soil to waste drums.
File Section: Central
Type: Private
Department 1: Not reported
Department 2: Not reported
Department 3: Not reported
Cost Recovery: Not reported
Official Notification: Not reported
Written Report: Not reported
Confirmation Number: Not reported
Pounds: Not reported
Responsible Party: Yes
Manifest Document Number: Not reported
Units: Gallons
Standard Cause: Not reported
Numerical Quantity: Not reported
Zip Id: Not reported
Initial Notification: Not reported
Written Notification: Not reported
Imminent And Substantial: Not reported
Lat/Lon: Not reported
Verification of source: Report by Knowledgeable Party
Potential Quantity Amount: Not reported
Potential Quantity Unit: Not reported
Verification of source: Not reported
Source Id: Not reported
Responsible Party Name: Not reported
RP Address: Not reported
RP Contact: Not reported
RP Phone Number: Not reported
Verification Of RP: Not reported
Responsible Party ID: Not reported
Contractor Amount: 0
Personnel Amount: Not reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number
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UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

Equipment Amount:	Not reported
Travel Amount:	Not reported
Miscellaneous Amount:	Not reported
Federal Project Number:	Not reported
Pollution Removal Funding Auth:	Not reported
Authorization Date:	Not reported
Authorization Ceiling:	Not reported
Identifier:	Not reported
Total Environment Revolving Response Fund:	0
Reported Date:	02/27/97
Case Number:	19970227-0745
Island:	Oahu
Incident Description:	G-24-B tank had a 4" gasket failure at the flange connection
Cause:	Foreign object left between flanges at installation
Substances:	Diesel Fuel #2
Quantity:	538 gallons
Media Affected:	Asphalt
Reportable Quantity:	yes
Category:	Not reported
Spill ?:	Yes
Reported By:	Pat Iona
Reporters Affiliation:	Supervisor Safety/Environmental
ERNS Number:	Not reported
Responder:	Union 76 Products Company
Responder Affiliation:	
Initial Response:	Allwaste of Hawaii Ltd. was called with a vacuum truck; pump is out of service; Coast Guard, National Response Center (NRC #378318) and LEPC notified.
Release Date:	02/27/97
Time of Release:	0650
Duration:	Not reported
Input By:	Liz Galvez
Date Input:	02/28/97
Staff 1:	Liz Galvez
Staff 2:	Not reported
Emergency Response:	Yes
Initial Site Screening Team Rank:	No
No Further Action:	NFA
Priority:	NFA
Comments:	Liz has report for review.
File Section:	Central
Type:	Private
Department 1:	Not reported
Department 2:	Not reported
Department 3:	Not reported
Cost Recovery:	Not reported
Official Notification:	Yes
Written Report:	03/04/97
Confirmation Number:	Not reported
Pounds:	Not reported
Responsible Party:	Not reported
Manifest Document Number:	Not reported
Units:	Gallons
Standard Cause:	Not reported
Numerical Quantity:	Not reported
Zip Id:	Not reported
Initial Notification:	Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

UNOCAL 76 HONOLULU LRNG CTR (Continued)

1000167494

Written Notification: Not reported
 Imminent And Substantial: Not reported
 Lat/Lon: Not reported
 Verification of source: Not reported
 Potential Quantity Amount: Not reported
 Potential Quantity Unit: Not reported
 Verification of source: Not reported
 Source Id: Not reported
 Responsible Party Name: Not reported
 RP Address: Not reported
 RP Contact: Not reported
 RP Phone Number: Not reported
 Verification Of RP: Not reported
 Responsible Party ID: Not reported
 Contractor Amount: Not reported
 Personnel Amount: Not reported
 Equipment Amount: Not reported
 Travel Amount: Not reported
 Miscelleneous Amount: Not reported
 Federal Project Number: Not reported
 Pollution Removal Funding Auth: Not reported
 Authorization Date: Not reported
 Authorization Ceiling: Not reported
 Identifier: Not reported
 Total Environment Revolving Response Fund: 0

UST:
 Facility ID: 9-100108 Tank ID: R-4-1
 Tank Status: Permanently Out of Use Installed: 4/15/82
 Tank Capacity: 550 Substance: Used Oil
 Date Closed: 3/7/97
 Owner: Tosco Marketing Company

27 HOME DEPOT
 ENE 650 IWILEI RD
 1/2-1 HONOLULU, HI 96817
 4414 ft.
 Higher

SHWS S104657431
 N/A

SHWS:
 File Section : Central
 Type : Private
 Department 1 : Not reported
 Department 2 : Not reported
 Department 3 : Not reported
 Table : Slist
 Island : Oahu
 Zip : Not reported
 Discovery Assesment and Remedlation : Not reported
 Initial Site Screening Team Lead : Not reported
 ISST Assigned : Not reported
 ISST Date : Not reported
 ISST Priority : Not reported
 ISST Letter : Not reported
 Env Justice Eligible : Not reported
 Preliminary Assesment : Not reported
 PA Lead : Not reported
 PA Date : Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

S104657431

HOME DEPOT (Continued)

PA Result :	Not reported
Site Investigation :	Not reported
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Yes
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Charley Langer
REM Lead :	Not reported
REM Date :	8/10/98
REM Last Update :	Marsha Graf
Input By :	Not reported
Case :	Not reported
Fed Id :	Not reported
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	VRP
Priority :	Not reported
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	Not reported
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Not reported
Tax Map Key :	Not reported
Form :	Not reported
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported
Targets :	Charley Langer
Manager :	Not reported
REM Result :	Not reported
Identifier :	CA
Site Code :	Not reported
Event :	Not reported
Event Type :	Not reported
Notes :	Not reported
Site :	Not reported
Site_ :	Not reported
Operator :	Not reported
Current :	Not reported
Compounds :	Not reported
Oname :	Not reported

28
 NW
 1/2-1
 4583 ft.
 Higher

**HAWAII STEVEDORES - MAINTENANCE
 WEST OF SAND ISLAND ACCESS RD
 HONOLULU, HI 96819**

SHWS U003221625
 LUST N/A
 UST

SHWS:
 File Section : Central
 Type : Private
 Department 1 : Not reported

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDRID Number
 EPAID Number

HAWAII STEVEDORES - MAINTENANCE (Continued)

U003221625

Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assessment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	Not reported
ISST Priority :	Not reported
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assessment :	Not reported
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	Not reported
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	Not reported
Input By :	Marsha Graf
Case :	Not reported
Fed Id :	Not reported
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	Not reported
Priority :	Not reported
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	Not reported
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Not reported
Tax Map Key :	Not reported
Form :	Not reported
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported
Targets :	Not reported
Manager :	Not reported
REM Result :	Not reported
Identifier :	Not reported
Site Code :	CA
Event :	Not reported
Event Type :	Not reported
Notes :	Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

HAWAII STEVEDORES - MAINTENANCE (Continued)

U003221625

Site : Not reported
 Site_ : Not reported
 Operator : Not reported
 Current : Not reported
 Compounds : Not reported
 Oname : Not reported

LUST:

Facility ID: 9-100934
 Alternate Event ID: 930056
 Facility Status: Site Cleanup Completed
 Project Officer: Okoji

UST:

Facility ID:	9-100934	Tank ID:	R-2
Tank Status:	Permanently Out of Use	Installed:	5/8/81
Tank Capacity:	1500	Substance:	Diesel
Date Closed:	2/16/92		
Owner:	HAWAII STEVEDORES, INC.		

Facility ID:	9-100934	Tank ID:	R-1
Tank Status:	Permanently Out of Use	Installed:	1/12/94
Tank Capacity:	8000	Substance:	Gasoline
Date Closed:	2/16/92		
Owner:	HAWAII STEVEDORES, INC.		

29
 East
 1/2-1
 4858 ft.
 Higher

ALOHA TOWER DEVELOPMENT
 PIERS 8-14, NIMITZ HWY.
 HONOLULU, OAHU, HI 96818

CERCLIS 1000483138
 SHWS HID984466708
 FINDS

CERCLIS Classification Data:

Site Incident Category:	Not reported	Federal Facility:	Not a Federal Facility
Non NPL Status:	PA Start Needed	NPL Status:	Not on the NPL
Ownership Status:	Private	Contact Tel:	(415) 972-3093
Contact:	Betsy Cumow		
Contact Title:	Not reported		

CERCLIS Assessment History:

Assessment:	DISCOVERY	Completed:	06/06/1991
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CERCLIS Site Status:

Not reported

FINDS:

Other Pertinent Environmental Activity Identified at Site:
 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
 Facility Registry System (FRS)

SHWS:

File Section :	Central
Type :	Private
Department 1 :	Not reported
Department 2 :	Not reported
Department 3 :	Not reported
Table :	Sitelist
Island :	Oahu
Zip :	Not reported
Discovery Assessment and Remediation :	Not reported
Initial Site Screening Team Lead :	Not reported
ISST Assigned :	Not reported
ISST Date :	12/15/95

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s) EDR ID Number
 EPA ID Number

ALOHA TOWER DEVELOPMENT (Continued)

1000483138

ISST Priority :	Medium
ISST Letter :	Not reported
Env Justice Eligible :	Not reported
Preliminary Assessment :	No
PA Lead :	Not reported
PA Date :	Not reported
PA Result :	Not reported
Site Investigation :	No
SI Lead :	Not reported
SI Date :	Not reported
SI Result :	Not reported
Remediation Action Planned :	Not reported
VRP :	Not reported
Brownfields :	Not reported
Agreement :	Not reported
Remedial Investigation :	Not reported
RAA :	Not reported
Response Action Memo :	Not reported
REM Lead :	Not reported
REM Date :	Not reported
REM Last Update :	01/24/96
Input By :	MJM
Case :	Not reported
Fed Id :	HID9844667806
UST :	Not reported
Permits :	Not reported
RCRA :	Not reported
Program :	Not reported
Priority :	Not reported
Lat/Long :	Not reported
Cost :	Not reported
CU QNTY Site :	high conc. in soil; no quantiles documented
Enforcement :	Not reported
CU Method :	Not reported
Ownership :	Private
Tax Map Key :	1-7-01, 2-1-01, 13,15,27
Form :	Tom/Tricia
EPCRA :	Not reported
EPCRA FIL :	Not reported
Pathways :	Not reported
Targets :	Not reported
Manager :	Not reported
REM Result :	Not reported
Identifier :	Not reported
Site Code :	CA
Event :	Harding Lawson Associates
Event Type :	DS1/ 06/06/91
Notes :	The known waste quantity is not easily accessible to the public. Heer did a PA in 1991; Development of area is planned.
Site :	Not reported
Site_ :	Land Developer
Operator :	Same as Owner
Current :	Not reported
Compounds :	PCB transformer, paints, solvents, waste petroleum products
Oname :	Aloha Tower Development, Inc 841 Bishop St, Hon., HI 96813 Eric Smith (808) 529-4400

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HONOLULU	S104534275	LILIPA CIVIC CENTER	337 AND 337 N. KING ST.	96817	SHWS
HONOLULU	S104534136	ELLIOT STREET DRAINAGE CANAL	ELLIOT ST		SHWS, SPILLS
HONOLULU	S104657434	HONOLULU SHIPYARD, INC. (EWA OF PI	EWA OF PIER 40	96813	SHWS
HONOLULU	S104534209	HONOLULU SHIPYARD, INC.	EWA OF PIER 40		SHWS
HONOLULU	S104657419	HAWAII INSTRUMENTATION & CONTROLS,	822 HALKAUNILA ST	96813	SHWS
HONOLULU	S104657451	KING KALAKAUA PLAZA (WAIKIKI GATEW	KALAKAUA AND KALAIMOKU STREETS		SHWS, SPILLS
HONOLULU	1004688841	HARBOR GRAPHICS	2222 KAM HIGHWAY	96819	RCRIS-SQG, FINDS
HONOLULU	1003879112	ABC DSPL	2760 KAMEHAMEHA HWY	96819	CERC-NFRAP
HONOLULU	1003879831	KEEHI LAGOON CANOE FACILITY	KEEHI LAGOON	96819	CERCUS
HONOLULU	S104534248	KEKAULIKE	KEKAULIKE STREET	96817	SHWS
HONOLULU	1003073287	VERMICULITE OF HAWAII, INC.	842-A MAPUNAPUNA STREET	96819	CERCUS
HONOLULU	1004654566	HAWAII STAGING AND LIGHTING	842A MAPUNAPUNA STREET	96819	CERCUS
HONOLULU	S104657484	NIMITZ HIGHWAY RELIEF SEWER	N. NIMITZ HWY AND HART ST	96813	SHWS
HONOLULU	S104534115	CHEVRON KAPALAMA NORTHEAST PARCEL	N. NIMITZ HWY	96817	SHWS
HONOLULU	S104534336	PACIFIC RESOURCES, INC. (GASCO)	531 PACIFIC STREET/MILEI	96817	SHWS
HONOLULU	1004689059	C S X LINES L L C	PIER 51 A SAND ISLAND RD	96819	RCRIS-SQG, FINDS
HONOLULU	S104534135	DOMESTIC COMMERCIAL FISHING VILLAG	PIER 38	96817	SHWS
HONOLULU	S104657433	HONOLULU FUELING FACILITIES CORPOR	PIER 51A	96819	SHWS
HONOLULU	S104534100	BHP, PIER 38	PIER 38		SHWS
HONOLULU	S104657508	SCRAP METAL PILE	PIER 34-35, NIMITZ HWY		SHWS
HONOLULU	1000252125	PACIFIC MARINE & SUPPLY CO LTD	PIERS 13 / 14	96817	SHWS
HONOLULU	S104534098	BHP TANK FARM, SAND ISLAND	SAND ISLAND		SHWS, SPILLS
HONOLULU	1000601372	ALLEGIANCE HEALTHCARE CORP	238 SAND ISLAND ACCESS RD M2	96819	RCRIS-SQG, FINDS, HAZNET
HONOLULU	1001112107	HONOLULU CORP YARD	1348 SAND ISLAND ACCESS RD	96819	RCRIS-SQG, FINDS
HONOLULU	1004689021	AMAZON CONSTRUCTION CO INC	5 SAND ISLAND RD BLDG 920-139	96819	RCRIS-SQG, FINDS
HONOLULU	1004689068	MATSON NAVIGATION COMPANY	SAND ISLAND ACCESS RD	96819	RCRIS-SQG, FINDS
HONOLULU	1004689069	MATSON NAVIGATION COMPANY	SAND ISLAND ACCESS RD	96819	RCRIS-SQG
HONOLULU	1004689070	MATSON NAVIGATION COMPANY	SAND ISLAND ACCESS RD	96819	RCRIS-SQG
HONOLULU	1004689071	MATSON NAVIGATION COMPANY	SAND ISLAND ACCESS RD	96819	RCRIS-SQG
HONOLULU	S105082263	CSX LINES	1420 SAND ISLAND ACCESS RD	96819	HAZNET
HONOLULU	1000707623	TOWCO	16-1 SAND ISLAND PARKWAY RD.	96819	SHWS
HONOLULU	1003879701	TOWCO	16-1 SAND ISLAND PARKWAY ROAD	96819	SHWS
HONOLULU	1003878850	USCG BASE HONOLULU	SAND ISLAND ACCESS ROAD	96819	CERC-NFRAP
HONOLULU	S104534410	USCG BASE HONOLULU	SAND ISLAND ACCESS ROAD	96819	SHWS, SPILLS
HONOLULU	U001235591	U.S. COAST GUARD BASE HONOLULU	SAND ISLAND		LUST
HONOLULU	U003221556	KAPALAMA MILITARY RESERVATION	SAND ISLAND ACCESS RD, BLDG 93		SHWS, UST
HONOLULU	S104534082	BARBERS POINT HARBOR EXPANSION	TKAK 9-1-14: PORTION OF 24 AND		SHWS
HONOLULU	S104534398	TRIPLER ARMY MEDICAL CENTER	TRIPLER ARMY MEDICAL CENTER	96819	SHWS
HONOLULU	S104657520	TRIPLER ARMY MEDICAL CENTER, BUILD	TRIPLER ARMY MEDICAL CENTER, B		SHWS
HONOLULU COUNTY	S103763647	NEW MILILANI LANDFILL	WAIPIO		SWFLF
HONOLULU COUNTY	S103763648	OLD MILILANI LANDFILL	WAIPIO		SWFLF
HONOLULU COUNTY	S104657485	NIMITZ HIGHWAY RELIEF SEWER, JOB W	MAKAI SIDE OF NIMITZ HWY OPPOS	96819	SHWS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA
Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/18/02
Date Made Active at EDR: 08/20/02
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 08/01/02
Elapsed ASTM days: 50
Date of Last EDR Contact: 11/04/02

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 817-918-1143

EPA Region 8
Telephone: 214-655-8659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-8774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Source: EPA
Telephone: N/A

Date of Government Version: 05/29/02
Date Made Active at EDR: 09/20/02
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 08/01/02
Elapsed ASTM days: 50
Date of Last EDR Contact: 11/04/02

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

Source: EPA
Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/15/02
Date Made Active at EDR: 10/28/02
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 09/23/02
Elapsed ASTM days: 35
Date of Last EDR Contact: 09/23/02

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Source: EPA
Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/15/02
Date Made Active at EDR: 10/28/02
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 10/03/02
Elapsed ASTM days: 25
Date of Last EDR Contact: 09/23/02

CORRACTS: Corrective Action Report

Source: EPA
Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 05/02/02
Date Made Active at EDR: 07/15/02
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/06/02
Elapsed ASTM days: 70
Date of Last EDR Contact: 09/09/02

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS
Telephone: 800-424-9346

Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 09/09/02
Date Made Active at EDR: 10/28/02
Database Release Frequency: Varies

Date of Data Arrival at EDR: 09/24/02
Elapsed ASTM days: 34
Date of Last EDR Contact: 09/24/02

ERNS: Emergency Response Notification System

Source: EPA/NTIS
Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/01
Date Made Active at EDR: 07/15/02
Database Release Frequency: Varies

Date of Data Arrival at EDR: 07/02/02
Elapsed ASTM days: 13
Date of Last EDR Contact: 10/28/02

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System

Source: EPA/NTIS
Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/99
Database Release Frequency: Biennially

Date of Last EDR Contact: 09/18/02
Date of Next Scheduled EDR Contact: 12/18/02

CONSENT: Superfund (CERCLA) Consent Decrees

Source: EPA Regional Offices
Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision

Source: EPA
Telephone: 703-418-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/21/01
Database Release Frequency: Annually

Date of Last EDR Contact: 10/07/02
Date of Next Scheduled EDR Contact: 01/06/03

DELISTED NPL: National Priority List Deletions

Source: EPA
Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/18/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/04/02
Date of Next Scheduled EDR Contact: 02/03/03

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report

Source: EPA
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 06/13/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/07/02
Date of Next Scheduled EDR Contact: 01/06/03

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation
Telephone: 202-368-4555

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 05/31/02
Database Release Frequency: Annually

Date of Last EDR Contact: 10/21/02
Date of Next Scheduled EDR Contact: 01/20/03

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/12/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 10/08/02
Date of Next Scheduled EDR Contact: 01/06/03

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 09/10/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/30/02
Date of Next Scheduled EDR Contact: 12/30/02

NPL LIENS: Federal Superfund Liens

Source: EPA
Telephone: 205-584-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 08/28/02
Date of Next Scheduled EDR Contact: 11/25/02

PADS: PCB Activity Database System

Source: EPA
Telephone: 202-564-3887

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/28/02
Database Release Frequency: Annually

Date of Last EDR Contact: 11/13/02
Date of Next Scheduled EDR Contact: 02/10/03

RAATS: RCRA Administrative Action Tracking System

Source: EPA
Telephone: 202-564-4104

RCRA Administrative Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administrative actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 09/10/02
Date of Next Scheduled EDR Contact: 12/09/02

TRIS: Toxic Chemical Release Inventory System

Source: EPA
Telephone: 202-280-1531

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 09/24/02
Date of Next Scheduled EDR Contact: 12/23/02

TSCA: Toxic Substances Control Act

Source: EPA
Telephone: 202-260-5521

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 09/09/02
Date of Next Scheduled EDR Contact: 12/09/02

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA
Telephone: 202-564-2501

Date of Government Version: 04/25/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/24/02
Date of Next Scheduled EDR Contact: 12/23/02

SSTS: Section 7 Tracking Systems

Source: EPA
Telephone: 202-564-5008

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 10/22/02
Date of Next Scheduled EDR Contact: 01/20/03

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Telephone: 202-564-2501

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/25/02
Database Release Frequency: Quarterly

Date of Last EDR Contact: 09/24/02
Date of Next Scheduled EDR Contact: 12/23/02

STATE OF HAWAII ASTM STANDARD RECORDS

SHWS: Sites List

Source: Department of Health

Telephone: 808-586-4249

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 07/12/01
Date Made Active at EDR: 10/18/01
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 09/24/01
Elapsed ASTM days: 22
Date of Last EDR Contact: 09/25/02

SWF/LF: Permitted Landfills in the State of Hawaii

Source: Department of Health

Telephone: 808-586-4245

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/03/99
Date Made Active at EDR: 05/25/99
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/10/99
Elapsed ASTM days: 15
Date of Last EDR Contact: 10/31/02

LUST: Leaking Underground Storage Tank Database

Source: Department of Health

Telephone: 808-586-4228

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 07/01/02
Date Made Active at EDR: 07/31/02
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 07/15/02
Elapsed ASTM days: 16
Date of Last EDR Contact: 09/30/02

UST: Underground Storage Tank Database

Source: Department of Health

Telephone: 808-586-4228

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 07/01/02
Date Made Active at EDR: 07/30/02
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 07/15/02
Elapsed ASTM days: 15
Date of Last EDR Contact: 09/30/02

STATE OF HAWAII ASTM SUPPLEMENTAL RECORDS

SPILLS: Release Notifications

Source: Department of Health

Telephone: 808-586-4249

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/01/00
Database Release Frequency: Varies

Date of Last EDR Contact: 09/25/02
Date of Next Scheduled EDR Contact: 12/23/02

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

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OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK®: PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

SAND ISLAND WASTEWATER TREATMENT PLNT
1350 SAND ISLAND PARKWAY
HONOLULU, HI 96819

TARGET PROPERTY COORDINATES

Latitude (North):	21.309601 - 21° 18' 34.6"
Longitude (West):	157.881699 - 157° 52' 54.1"
Universal Transverse Mercator:	Zone 4
UTM X (Meters):	615989.5
UTM Y (Meters):	2356685.2

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: N/A
Source: USGS 7.5 min quad index

GENERAL TOPOGRAPHIC GRADIENT AT TARGET PROPERTY

Target Property: General West

Source: General Topographic Gradient has been determined from the USGS 1 Degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> HONOLULU, HI	<u>FEMA Flood Electronic Data</u> YES - refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	1500010115C
Additional Panels in search area:	Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> NOT AVAILABLE	<u>NWI Electronic Data Coverage</u> YES - refer to the Overview Map and Detail Map
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HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

AQUIFLOW®

Search Radius: 2,000 Miles.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

<u>ROCK STRATIGRAPHIC UNIT</u>		<u>GEOLOGIC AGE IDENTIFICATION</u>
Era:	-	Category: -
System:	-	
Series:	-	
Code:	N/A (decoded above as Era, System & Series)	

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Belkman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	LITHIC USTORTHENTS
Soil Surface Texture:	variable
Hydrologic Group:	Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 40 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (ln/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	6 inches	variable	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 2.00 Min: 0.20	Max: 7.30 Min: 6.10
2	6 inches	60 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Elastic silt.	Max: 2.00 Min: 0.20	Max: 7.30 Min: 6.10
3	60 inches	64 inches	unweathered bedrock	Not reported	Not reported	Max: 2.00 Min: 0.06	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordnant soil types may appear within the general area of target property.

Soil Surface Textures: sand
silty clay loam

Surficial Soil Types: sand
silty clay loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: sand
coarse sand

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A2	211859157530401	1/4 - 1/2 Mile North
B3	211908157524801	1/4 - 1/2 Mile NE
B4	211903157524301	1/4 - 1/2 Mile NE
5	211853157523801	1/2 - 1 Mile ENE
B6	211908157524402	1/2 - 1 Mile NE
B7	211913157524303	1/2 - 1 Mile NE
D10	211908157522801	1/2 - 1 Mile ENE
C11	211825157522701	1/2 - 1 Mile ESE
D12	211912157523001	1/2 - 1 Mile NE
D15	211910157522801	1/2 - 1 Mile NE
E16	211811157534001	1/2 - 1 Mile NW
D19	211911157522801	1/2 - 1 Mile NE
D22	211908157522501	1/2 - 1 Mile ENE
D23	211912157522801	1/2 - 1 Mile NE
D24	211908157522201	1/2 - 1 Mile ENE
D26	211908157522201	1/2 - 1 Mile ENE
D27	211907157522101	1/2 - 1 Mile ENE
F29	211901157521701	1/2 - 1 Mile ENE
D31	211910157522003	1/2 - 1 Mile ENE
D32	211910157522002	1/2 - 1 Mile ENE
D33	211910157522001	1/2 - 1 Mile ENE
G37	211933157525401	1/2 - 1 Mile North
G38	211933157525402	1/2 - 1 Mile North
G42	211934157525501	1/2 - 1 Mile North
D45	211913157522001	1/2 - 1 Mile ENE
H48	211917157522201	1/2 - 1 Mile NE
H49	211918157522101	1/2 - 1 Mile NE
H52	211917157522101	1/2 - 1 Mile NE
H53	211917157522000	1/2 - 1 Mile NE
54	211926157534001	1/2 - 1 Mile NW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
H48	HI0000301	1/2 - 1 Mile NE

Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	3-1853-001	1/8 - 1/4 Mile North
C8	3-1852-008	1/2 - 1 Mile ESE
9	3-1852-010	1/2 - 1 Mile SE
D13	3-1952-014	1/2 - 1 Mile NE
D14	3-1952-024	1/2 - 1 Mile NE
D17	3-1952-025	1/2 - 1 Mile NE
E18	3-1953-002	1/2 - 1 Mile NW
D20	3-1952-030	1/2 - 1 Mile NE
D21	3-1952-029	1/2 - 1 Mile ENE
D25	3-1952-032	1/2 - 1 Mile ENE
D28	3-1952-031	1/2 - 1 Mile ENE
F30	3-1952-037	1/2 - 1 Mile ENE
D34	3-1952-028	1/2 - 1 Mile ENE
D35	3-1952-027	1/2 - 1 Mile ENE
D36	3-1952-026	1/2 - 1 Mile ENE
G39	3-1952-035	1/2 - 1 Mile North
G40	3-1952-036	1/2 - 1 Mile North
D41	3-1952-033	1/2 - 1 Mile ENE
G43	3-1952-034	1/2 - 1 Mile North
D44	3-1952-012	1/2 - 1 Mile ENE
H47	3-1952-013	1/2 - 1 Mile NE
H50	3-1952-011	1/2 - 1 Mile NE
H51	3-1952-021	1/2 - 1 Mile NE

PHYSICAL SETTING SOURCE MAP - 889508.1s



- ⚡ County Boundary
- ⚡ Major Roads
- ⚡ Contour Lines
- ✈ Airports
- ⊕ Water Wells
- ⊕ Public Water Supply Wells
- ↓ Groundwater Flow Direction
- ⊕ Indeterminate Groundwater Flow at Location
- ⊕ Groundwater Flow Varies at Location
- Cluster of Multiple Icons

⊙ Earthquake epicenter, Richter 5 or greater

TARGET PROPERTY:	Sand Island Wastewater Treatment Plant	CUSTOMER:	Environet
ADDRESS:	1350 Sand Island Parkway	CONTACT:	Martha Spengler
CITY/STATE/ZIP:	Honolulu HI 96819	INQUIRY #:	889508.1s
LAT/LONG:	21.3096 / 157.8817	DATE:	December 02, 2002 11:49 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
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A1 North 1/8 - 1/4 Mile Higher	HI WELLS	3-1853-001
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Wtd:	3-1853-001	Island Code:	3
Island Name:	Oahu	Well no:	1853-01
Well name:	Sand Isle Wharf	Old name:	Not Reported
Yr drilled:	1973	Driller:	CONTINENTAL
Quad_map:	13	Latitude:	211859
Longitude:	1575304	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	Not Reported
Ground Elev:	Not Reported	Well depth:	120
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	Not Reported	Use Desc:	Not Reported
Use year:	Not Reported	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	05/17/1973 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump Intake elev:	Not Reported
Pump depth:	Not Reported		

A2 North 1/4 - 1/2 Mile Higher	FED USGS	211859157530401
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BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1973	State:	Hawaii
Altitude:	2.00 ft.	Topographic Setting:	Not Reported
Well Depth:	120.00 ft.	Prim. Use of Site:	Test
Depth to Water Table:	Not Reported	Prim. Use of Water:	Other
Date Measured:	Not Reported		

B3 NE 1/4 - 1/2 Mile Higher	FED USGS	211906157524801
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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1968	State:	Hawaii
Altitude:	6.00 ft.	Topographic Setting:	Not Reported
Well Depth:	290.00 ft.	Prim. Use of Site:	Observation
Depth to Water Table:	Not Reported	Prim. Use of Water:	Unused
Date Measured:	Not Reported		

B4
NE
1/4 - 1/2 Mile
Higher

FED USGS 211903157524301

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1973	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Flat surface
Well Depth:	75.00 ft.	Prim. Use of Site:	Waste disposal
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

5
ENE
1/2 - 1 Mile
Higher

FED USGS 211853157523601

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1973	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Flat surface
Well Depth:	65.00 ft.	Prim. Use of Site:	Waste disposal
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

B6
NE
1/2 - 1 Mile
Higher

FED USGS 211908157524402

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1973	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Flat surface
Well Depth:	75.00 ft.	Prim. Use of Site:	Waste disposal
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

B7
NE
1/2 - 1 Mile
Higher

FED USGS 211913157524303

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1973	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Flat surface
Well Depth:	75.00 ft.	Prim. Use of Site:	Waste disposal
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID	Direction	Distance	Elevation	Database	EDR ID Number
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C8	ESE	1/2 - 1 Mile	Higher	HI WELLS	3-1852-008
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Wid:	3-1852-008	Island Code:	3
Island Name:	Oahu	Well no:	1852-08
Well name:	Coast Guard Res	Old name:	Not Reported
Yr drilled:	1971	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211828
Longitude:	1575229	UTM:	Y
Gps:	N	Owner/user:	State Aquatics
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	8	Well depth:	80
Solid casing Depth:	32	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	.81
Chloride value:	0	Test date:	08/23/1971 00:00:00
Pumping Test rate:	900	Drop in water Lvl:	2.3
Chloride Test:	18000	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	400
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-72	bot_solid depth:	-24
Bot_perf depth:	Not Reported	Well Capacity:	391
Pump Capacity:	.578	Draft (mgd):	Not Reported
Tax map key:	1-5-041:002	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1971 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump Intake elev:	Not Reported
Pump depth:	Not Reported		

9	SE	1/2 - 1 Mile	Higher	HI WELLS	3-1852-010
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Wid:	3-1852-010	Island Code:	3
Island Name:	Oahu	Well no:	1852-10
Well name:	Ocean Seafoods 1	Old name:	Not Reported
Yr drilled:	1898	Driller:	MELS WTR WKS
Quad_map:	13	Latitude:	211819
Longitude:	1575233	UTM:	Y
Gps:	N	Owner/user:	Ocean Seafoods
Old number:	Not Reported	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	6
Ground Elev:	10	Well depth:	63

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Solid casing Depth:	20	Perf casing Depth:	60
Use:	OTH	Use Desc:	Other
Use year:	98	Water Top Elev:	.1
Chloride value:	22000	Test date:	03/04/1998 00:00:00
Pumping Test rate:	125	Drop in water Lvl:	1.45
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	85
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	98	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-53	bot_solid depth:	-10
Bot_perf depth:	-50	Well Capacity:	Not Reported
Pump Capacity:	.093	Draft (mgd):	Not Reported
Tax map key:	1-5-041:328	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	Not Reported
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	-11
Pump depth:	21		

D10
ENE
1/2 - 1 Mile
Higher
FED USGS 211908157522801

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1971	County:	Honolulu
Altitude:	5.00 ft.	State:	Hawaii
Well Depth:	65.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Waste disposal
Date Measured:	Not Reported	Prim. Use of Water:	Industrial

C11
ESE
1/2 - 1 Mile
Higher
FED USGS 211825157522701

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1971	County:	Honolulu
Altitude:	8.00 ft.	State:	Hawaii
Well Depth:	100.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Aquaculture

D12
NE
1/2 - 1 Mile
Higher
FED USGS 211912157523001

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1923	County:	Honolulu
Altitude:	4.00 ft.	State:	Hawaii
Well Depth:	682.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	00024.2K ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	12121923	Prim. Use of Water:	Industrial

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
D13 NE 1/2 - 1 Mile Higher	3-1952-014 Oahu Kapalama 1923 13 1575230 N 119- Not Reported 4 613 SLD 98 268 Not Reported Not Reported C Not Reported TKB Not Reported Not Reported Not Reported -678 Not Reported Not Reported 1-5-012;006 25.8 Not Reported Not Reported 0 Not Reported	HI WELLS	3-1952-014
Wid: Island Name: Well name: Yr drilled: Quad_map: Longitude: Gps: Old number: Type: Ground Elev: Solid casing Depth: Use: Use year: Chloride value: Pumping Test rate: Chloride Test: Units: Annual Draft: Geology: Installed: Max chlorides: Min chlorides: Bot_hole depth: Bot_perf depth: Pump Capacity: Tax map key: Latest head mmt: Current CI mmt: Pump Inst. Date: Transmissivity: Pump depth:	Island Code: Well no: Old name: Driller: Latitude: UTM: Owner/user: Well_type: Casing dia: Well depth: Perf casing Depth: Use Desc: Water Top Elev: Test date: Drop in water Lvt: Temperature: Pump Capacity: Static Water Lvt: Geology desc: Last Measured: Max CI year: Min CI year: bot_solid depth: Well Capacity: Draft (mgd): Aquifer code: Cur head mmt: Const. Date: Surveyor: Pump intake elev:		

D14 NE 1/2 - 1 Mile Higher	3-1952-024 Oahu Kapalama 1947 13 1575228 N 119-1 Not Reported Not Reported	HI WELLS	3-1952-024
Wid: Island Name: Well name: Yr drilled: Quad_map: Longitude: Gps: Old number: Type: Ground Elev:	Island Code: Well no: Old name: Driller: Latitude: UTM: Owner/user: Well_type: Casing dia: Well depth:		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Solid casing Depth:	54	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	89	Water Top Elev:	0
Chloride value:	13000	Test date:	Not Reported
Pumping Test rate:	2000	Drop in water Lvl:	5.0
Chloride Test:	16800	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
BoL_hole depth:	Not Reported	bot_solid depth:	Not Reported
BoL_perf depth:	Not Reported	Well Capacity:	400
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-012:006	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1947 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump Intake elev:	Not Reported
Pump depth:	Not Reported		

D15
NE
1/2 - 1 Mile
Higher
FED USGS 211910157522801

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1947	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	80.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

E16
NW
1/2 - 1 Mile
Higher
FED USGS 211911157534001

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1976	State:	Hawaii
Altitude:	8.00 ft.	Topographic Setting:	Not Reported
Well Depth:	100.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Aquaculture
Date Measured:	Not Reported		

D17
NE
1/2 - 1 Mile
Higher
HI WELLS 3-1952-025

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid: 3-1952-025
 Island Name: Oahu
 Well name: Kapalama
 Yr drilled: 1947
 Quad_map: 13
 Longitude: 1575228
 Gps: N
 Old number: 119-2
 Type: Not Reported
 Ground Elev: Not Reported
 Solid casing Depth: 42
 Use: OTH
 Use year: 81
 Chloride value: 16200
 Pumping Test rate: 1500
 Chloride Test: 17600
 Units: Not Reported
 Annual Draft: Not Reported
 Geology: RF
 Installed: Not Reported
 Max chlorides: Not Reported
 Min chlorides: Not Reported
 Bot_hole depth: Not Reported
 Bot_perf depth: Not Reported
 Pump Capacity: Not Reported
 Tax map key: 1-5-012:006
 Latest head mmt: 0
 Current CI mmt: Not Reported
 Pump Inst. Date: Not Reported
 Transmissivity: 0
 Pump depth: Not Reported

Island Code: 3
 Well no: 1952-25
 Old name: Not Reported
 Driller: MULLIN
 Latitude: 211911
 UTM: Y
 Owner/user: Hon Gas
 Well_type: Not Reported
 Casing dia: 18
 Well depth: 81
 Perf casing Depth: Not Reported
 Use Desc: Other
 Water Top Elev: 0
 Test date: Not Reported
 Drop in water Lvl: 3.2
 Temperature: Not Reported
 Pump Capacity: 0
 Static Water Lvl: Not Reported
 Geology desc: Artificial fill
 Last Measured: Not Reported
 Max CI year: Not Reported
 Min CI year: Not Reported
 bot_solid depth: Not Reported
 Well Capacity: 469
 Draft (mgd): Not Reported
 Aquifer code: 30103
 Cur head mmt: Not Reported
 Const. Date: 01/01/1947 00:00:00
 Surveyor: Not Reported
 Pump intake elev: Not Reported

E18
 NW
 1/2 - 1 Mile
 Higher

HI WELLS 3-1953-002

Wid: 3-1953-002
 Island Name: Oahu
 Well name: Salt Water
 Yr drilled: 1976
 Quad_map: 13
 Longitude: 1575340
 Gps: N
 Old number: Not Reported
 Type: Not Reported
 Ground Elev: 8
 Solid casing Depth: 100
 Use: SLD
 Use year: 76
 Chloride value: 0
 Pumping Test rate: 275
 Chloride Test: Not Reported
 Units: Not Reported
 Annual Draft: Not Reported
 Geology: Not Reported
 Installed: Not Reported

Island Code: 3
 Well no: 1953-02
 Old name: Not Reported
 Driller: CONTINENTAL
 Latitude: 211911
 UTM: Y
 Owner/user: State Dags
 Well_type: Not Reported
 Casing dia: 4
 Well depth: 120
 Perf casing Depth: Not Reported
 Use Desc: Sealed
 Water Top Elev: 0
 Test date: 02/12/1976 00:00:00
 Drop in water Lvl: .7
 Temperature: Not Reported
 Pump Capacity: 0
 Static Water Lvl: Not Reported
 Geology desc: Not Reported
 Last Measured: Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-112	bot_solid depth:	-92
Bot_perf depth:	Not Reported	Well Capacity:	393
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-2-013:002	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	02/04/1976 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump Intake elev:	Not Reported
Pump depth:	Not Reported		

D19
NE
1/2 - 1 Mile
Higher
FED USGS 211811157522801

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1947	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	81.00 ft.	Prm. Use of Site:	Unused
Depth to Water Table:	Not Reported	Prm. Use of Water:	Other
Date Measured:	Not Reported		

D20
NE
1/2 - 1 Mile
Higher
HI WELLS 3-1952-030

Wid:	3-1952-030	Island Code:	3
Island Name:	Oahu	Well no:	1952-30
Well name:	Kapalama	Old name:	Not Reported
Yr drilled:	1951	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211812
Longitude:	1575228	UTM:	Y
Gps:	N	Owner/user:	Hon Gas
Old number:	119-3	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	16
Ground Elev:	7	Well depth:	75
Solid casing Depth:	51	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	89	Water Top Elev:	0
Chloride value:	12600	Test date:	Not Reported
Pumping Test rate:	810	Drop in water Lvl:	3.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-68	bot_solid depth:	-44
Bot_perf depth:	Not Reported	Well Capacity:	270
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-012:006	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1951 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D21
ENE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-029

Wid:	3-1952-029	Island Code:	3
Island Name:	Oahu	Well no:	1952-29
Well name:	Kapalama Battery	Old name:	Not Reported
Yr drilled:	1951	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211808
Longitude:	1575225	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	117-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	14
Ground Elev:	Not Reported	Well depth:	40
Solid casing Depth:	37	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	88	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-010:010	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1951 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D22
ENE
1/2 - 1 Mile
Higher

FED USGS 211908157522501

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1951	State:	Hawaii
Altitude:	4.00 ft.	Topographic Setting:	Not Reported
Well Depth:	40.00 ft.	Prim. Use of Site:	Unused
Depth to Water Table:	Not Reported	Prim. Use of Water:	Unused
Date Measured:	Not Reported		

D23
NE
1/2 - 1 Mile
Higher

FED USGS 211912157522801

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1951	State:	Hawaii
Altitude:	8.90 ft.	Topographic Setting:	Flat surface
Well Depth:	51.00 ft.	Prim. Use of Site:	Waste disposal
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

D24
ENE
1/2 - 1 Mile
Higher

FED USGS 211906157522201

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1957	State:	Hawaii
Altitude:	4.00 ft.	Topographic Setting:	Not Reported
Well Depth:	40.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

D25
ENE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-032

Wid:	3-1952-032	Island Code:	3
Island Name:	Oahu	Well no:	1952-32
Well name:	Kapalama Battery	Old name:	Not Reported
Yr drilled:	1957	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211908
Longitude:	1575222	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	117-3	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	14
Ground Elev:	Not Reported	Well depth:	40

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Solid casing Depth:	20	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	88	Water Top Elev:	0
Chloride value:	17000	Test date:	Not Reported
Pumping Test rate:	750	Drop in water Lvl:	1.5
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	500
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-011:004	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1957 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D26
ENE
1/2 - 1 Mile
Higher
FED USGS 211908157522201

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1957	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	40.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

D27
ENE
1/2 - 1 Mile
Higher
FED USGS 211907157522101

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1954	State:	Hawaii
Altitude:	4.00 ft.	Topographic Setting:	Not Reported
Well Depth:	42.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

D28
ENE
1/2 - 1 Mile
Higher
HI WELLS 3-1952-031

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid:	3-1952-031	Island Code:	3
Island Name:	Oahu	Well no:	1952-31
Well name:	Kapalama Battery	Old name:	Not Reported
Yr drilled:	1954	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211907
Longitude:	1575221	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	117-2	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	14
Ground Elev:	Not Reported	Well depth:	42
Solid casing Depth:	20	Perf casing Depth:	Not Reported
Use:	IND	Use Desc:	Industrial
Use year:	88	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop In water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-011:004	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1954 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

F29
ENE
1/2 - 1 Mile
Higher

FED USGS 211901157521701

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1972	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	109.00 ft.	Prim. Use of Site:	Waste disposal
Depth to Water Table:	8.00 ft.	Prim. Use of Water:	Unused
Date Measured:	10131972		

F30
ENE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-037

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid:	3-1952-037	Island Code:	3
Island Name:	Oahu	Well no:	1952-37
Well name:	Kapalama	Old name:	Not Reported
Yr drilled:	1972	Driller:	CONTINENTAL
Quad_map:	13	Latitude:	211901
Longitude:	1575217	UTM:	Y
Gps:	N	Owner/user:	Union Oil Co
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	109
Solid casing Depth:	43	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	10/13/1972 00:00:00
Pumping Test rate:	22	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-039:012	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	10/13/1972 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D31
ENE
1/2 - 1 Mile
Higher
FED USGS 211910157522003

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1950	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	35.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

D32
ENE
1/2 - 1 Mile
Higher
FED USGS 211910157522002

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1950	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	35.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID			
Direction			
Distance		Database	EDR ID Number
Elevation			
D33		FED USGS	211910157522001
ENE			
1/2 - 1 Mile			
Higher			

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1950	County:	Honolulu
Altitude:	5.00 ft.	State:	Hawaii
Well Depth:	36.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Industrial

D34		HI WELLS	3-1952-028
ENE			
1/2 - 1 Mile			
Higher			

Wid:	3-1952-028	Island Code:	3
island Name:	Oahu	Well no:	1952-28
Well name:	Kapalama Battery	Old name:	Not Reported
Yr drilled:	1950	Driller:	MULLIN
Quad_map:	13	Latitude:	211910
Longitude:	1575220	UTM:	Y
Gps:	N	Owner/user:	Lone Star Haw
Old number:	114-C	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	18
Ground Elev:	Not Reported	Well depth:	35
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	IND	Use Desc:	Industrial
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-012:003	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1950 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D35		HI WELLS	3-1952-027
ENE			
1/2 - 1 Mile			
Higher			

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid:	3-1952-027	Island Code:	3
Island Name:	Oahu	Well no:	1952-27
Well name:	Kapalama Battery	Old name:	Not Reported
Yr drilled:	1950	Driller:	MULLIN
Quad_map:	13	Latitude:	211910
Longitude:	1575220	UTM:	Y
Gps:	N	Owner/user:	Lone Star Haw
Old number:	114-B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	18
Ground Elev:	Not Reported	Well depth:	35
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	IND	Use Desc:	Industrial
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max CI year:	Not Reported
Min chlorides:	Not Reported	Min CI year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-012:003	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current CI mmt:	Not Reported	Const. Date:	01/01/1950 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D36
ENE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-026

Wid:	3-1952-026	Island Code:	3
Island Name:	Oahu	Well no:	1952-28
Well name:	Kapalama Battery	Old name:	Not Reported
Yr drilled:	1950	Driller:	MULLIN
Quad_map:	13	Latitude:	211910
Longitude:	1575220	UTM:	Y
Gps:	N	Owner/user:	Lone Star Haw
Old number:	114-A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	18
Ground Elev:	Not Reported	Well depth:	38
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	IND	Use Desc:	Industrial
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	600
Annual Draft:	Not Reported	Static Water Lvl:	7.0
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	.884	Draft (mgd):	Not Reported
Tax map key:	1-5-012:003	Aquifer code:	30103
Latest head mmt:	7	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1950 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

G37
North
1/2 - 1 Mile
Higher
FED USGS 211933157525401

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1960	County:	Honolulu
Altitude:	15.00 ft.	State:	Hawaii
Well Depth:	250.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Industrial (cooling)

G38
North
1/2 - 1 Mile
Higher
FED USGS 211933157525402

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1967	County:	Honolulu
Altitude:	15.00 ft.	State:	Hawaii
Well Depth:	80.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Industrial (cooling)

G39
North
1/2 - 1 Mile
Higher
HI WELLS 3-1952-035

Wid:	3-1952-035	Island Code:	3
Island Name:	Oahu	Well no:	1952-35
Well name:	Kapalama	Old name:	Not Reported
Yr drilled:	1960	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211933
Longitude:	1575254	UTM:	Y
Gps:	N	Owner/user:	Bishop Estate
Old number:	130-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	16
Ground Elev:	15	Well depth:	250

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Solid casing Depth:	20	Perf casing Depth:	205
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	12.9
Chloride value:	11600	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-235	bot_solid depth:	-5
Bot_perf depth:	-190	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-030:001	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1960 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump Intake elev:	Not Reported
Pump depth:	Not Reported		

G40
North
1/2 - 1 Mile
Higher

HI WELLS 3-1952-036

Wid:	3-1952-036
Island Name:	Oahu
Well name:	Kepalama
Yr drilled:	1967
Quad_map:	13
Longitude:	1575254
Gps:	N
Old number:	130-2
Type:	Not Reported
Ground Elev:	15
Solid casing Depth:	46
Use:	OTH
Use year:	81
Chloride value:	11311
Pumping Test rate:	525
Chloride Test:	16500
Units:	C
Annual Draft:	Not Reported
Geology:	QLS
Installed:	Not Reported
Max chlorides:	Not Reported
Min chlorides:	Not Reported
Bot_hole depth:	-85
Bot_perf depth:	Not Reported
Pump Capacity:	Not Reported
Tax map key:	1-5-030:002
Latest head mmt:	0
Current Cl mmt:	Not Reported
Pump Inst. Date:	Not Reported
Transmissivity:	0
Pump depth:	Not Reported

Island Code:	3
Well no:	1952-36
Old name:	Not Reported
Driller:	NAT WHITON
Latitude:	211933
UTM:	Y
Owner/user:	Bishop Estate
Well_type:	Not Reported
Casing dia:	18
Well depth:	80
Perf casing Depth:	Not Reported
Use Desc:	Other
Water Top Elev:	.3
Test date:	Not Reported
Drop in water Lvl:	27.0
Temperature:	26.7
Pump Capacity:	0
Static Water Lvl:	Not Reported
Geology desc:	Quaternary limestone deposits
Last Measured:	Not Reported
Max Cl year:	Not Reported
Min Cl year:	Not Reported
bot_solid depth:	-31
Well Capacity:	19
Draft (mgd):	Not Reported
Aquifer code:	30103
Cur head mmt:	Not Reported
Const. Date:	01/01/1967 00:00:00
Surveyor:	Not Reported
Pump Intake elev:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

D41
ENE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-033

Wid: 3-1952-033
Island Name: Oahu
Well name: Kapalama Battery
Yr drilled: 1978
Quad_map: 13
Longitude: 1575218
Gps: N
Old number: 117-4
Type: Not Reported
Ground Elev: Not Reported
Solid casing Depth: 20
Use: IND
Use year: 78
Chloride value: 17000
Pumping Test rate: Not Reported
Chloride Test: Not Reported
Units: Not Reported
Annual Draft: Not Reported
Geology: RF
Installed: Not Reported
Max chlorides: Not Reported
Min chlorides: Not Reported
Bot_hole depth: Not Reported
Bot_perf depth: Not Reported
Pump Capacity: Not Reported
Tax map key: 1-5-011:004
Latest head mmt: 0
Current Cl mmt: Not Reported
Pump Inst. Date: Not Reported
Transmissivity: 0
Pump depth: Not Reported

Island Code: 3
Well no: 1952-33
Old name: Not Reported
Driller: ROSCOE MOSS
Latitude: 211908
UTM: Y
Owner/user: Castle & Cooke Hawaii, Inc. [03]
Well_type: Not Reported
Casing dia: 14
Well depth: 40
Perf casing Depth: Not Reported
Use Desc: Industrial
Water Top Elev: 0
Test date: Not Reported
Drop in water Lvl: Not Reported
Temperature: Not Reported
Pump Capacity: 0
Static Water Lvl: Not Reported
Geology desc: Artificial fill
Last Measured: Not Reported
Max Cl year: 0
Min Cl year: 0
bot_solid depth: Not Reported
Well Capacity: Not Reported
Draft (mgd): Not Reported
Aquifer code: 30103
Cur head mmt: Not Reported
Const. Date: 01/01/1978 00:00:00
Surveyor: Not Reported
Pump intake elev: Not Reported

G42
North
1/2 - 1 Mile
Higher

FED USGS 211934157525501

BASIC WELL DATA

Site Type: Single well, other than collector or Ranney type
Year Constructed: 1959
Altitude: 15.00 ft.
Well Depth: 85.00 ft.
Depth to Water Table: Not Reported
Date Measured: Not Reported
County: Honolulu
State: Hawaii
Topographic Setting: Not Reported
Prim. Use of Site: Withdrawal of water
Prim. Use of Water: Industrial

G43
North
1/2 - 1 Mile
Higher

HI WELLS 3-1952-034

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Wid: 3-1952-034
Island Name: Oahu
Well name: Kapalama
Yr drilled: 1959
Quad_map: 13
Longitude: 1575255
Gps: N
Old number: 130-
Type: Not Reported
Ground Elev: 15
Solid casing Depth: 60
Use: OTH
Use year: 81
Chloride value: 0
Pumping Test rate: 750
Chloride Test: 18850
Units: Not Reported
Annual Draft: Not Reported
Geology: OLS
Installed: Not Reported
Max chlorides: Not Reported
Min chlorides: Not Reported
Bot_hole depth: -70
Bot_perf depth: Not Reported
Pump Capacity: Not Reported
Tax map key: 1-5-030:002
Latest head mmt: 0
Current Cl mmt: Not Reported
Pump Inst. Date: Not Reported
Transmissivity: 0
Pump depth: Not Reported

Island Code: 3
Well no: 1952-34
Old name: Not Reported
Driller: NAT WHITON
Latitude: 211934
UTM: Y
Owner/user: Bishop Estate
Well_type: Not Reported
Casing dia: 12
Well depth: 85
Perf casing Depth: Not Reported
Use Desc: Other
Water Top Elev: 4
Test date: Not Reported
Drop in water Lvl: 31.4
Temperature: Not Reported
Pump Capacity: 0
Static Water Lvl: Not Reported
Geology desc: Quaternary limestone deposits
Last Measured: Not Reported
Max Cl year: Not Reported
Min Cl year: Not Reported
bot_solid depth: -45
Well Capacity: 24
Draft (mgd): Not Reported
Aquifer code: 30103
Cur head mmt: Not Reported
Const. Date: 01/01/1959 00:00:00
Surveyor: Not Reported
Pump intake elev: Not Reported

D44
ENE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-012

Wid: 3-1952-012
Island Name: Oahu
Well name: Kapalama
Yr drilled: 1920
Quad_map: 13
Longitude: 1575220
Gps: N
Old number: 114-
Type: Not Reported
Ground Elev: 6
Solid casing Depth: 528
Use: UNU
Use year: 93
Chloride value: 170
Pumping Test rate: Not Reported
Chloride Test: Not Reported
Units: C
Annual Draft: 85
Geology: TKB
Installed: Not Reported

Island Code: 3
Well no: 1952-12
Old name: Not Reported
Driller: MCCANDLESS
Latitude: 211913
UTM: Y
Owner/user: Cann Slf Stor
Well_type: Not Reported
Casing dia: 9
Well depth: 599
Perf casing Depth: Not Reported
Use Desc: Unused
Water Top Elev: 28.2
Test date: Not Reported
Drop in water Lvl: Not Reported
Temperature: 22.7
Pump Capacity: 900
Static Water Lvl: 18.4
Geology desc: Tertiary Koolau basalt
Last Measured: Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-593	bot_solid depth:	-522
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	1,298	Draft (mgd):	0.2
Tax map key:	1-5-012:001	Aquifer code:	30103
Latest head mmt:	18.4	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1920 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D45
ENE
1/2 - 1 Mile
Higher
FED USGS 211913157522001

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1920	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Flat surface
Well Depth:	610.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	0002.32 ft.	Prim. Use of Water:	Industrial
Date Measured:	12211923		

H46
NE
1/2 - 1 Mile
Higher
FED USGS 211917157522201

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1923	State:	Hawaii
Altitude:	4.00 ft.	Topographic Setting:	Not Reported
Well Depth:	650.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

H47
NE
1/2 - 1 Mile
Higher
HI WELLS 3-1952-013

Wid:	3-1952-013	Island Code:	3
Island Name:	Oahu	Well no:	1952-13
Well name:	Kapalama 2	Old name:	Not Reported
Yr drilled:	1923	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211917
Longitude:	1575222	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	118-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	4	Well depth:	650

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Solid casing Depth:	550	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	00	Water Top Elev:	28.4
Chloride value:	158	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.2
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-648	bot_solid depth:	-548
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-5-012:005	Aquifer code:	30103
Latest head mmt:	26.2	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1923 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

H48
NE
1/2 - 1 Mile
Higher

FRDS PWS HI0000301

PWS ID: HI0000301 PWS Status: Active
Date Initiated: 7706 Date Deactivated: Not Reported
PWS Name: DOLE CANNERY
801 DILLINGHAM BLVD
HONOLULU, OAHU, HI 96817

Addressee / Facility: System Owner/Responsible Party
MR. MORT NIMEROFF, ENGINEER
DOLE PACKAGED FOODS COMPANY
P.O. BOX 3380
HONOLULU, HI 96801

Facility Latitude:	21 19 17	Facility Longitude:	157 52 21
Facility Latitude:	21 19 17	Facility Longitude:	157 52 19
Facility Latitude:	21 19 17	Facility Longitude:	157 52 22
City Served:	CANNING OP		
City Served:	HONOLULU	Population:	00001200
Treatment Class:	Treated		

PWS currently has or had major violation(s) or enforcement: Yes

Violations information not reported.

ENFORCEMENT INFORMATION:

System Name:	DOLE CANNERY		
Violation Type:	Max Contaminant Level, Monthly (TCR)		
Contaminant:	COLIFORM (TCR)	Analytical Value:	00000000.00
Compliance Period:	1995-06-01 - 1995-06-30	Enforcement ID:	Not Reported
Violation ID:	9500005	Enf. Action:	Not Reported
Enforcement Date:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

ENFORCEMENT INFORMATION:

System Name:	DOLE CANNERY		
Violation Type:	Monitoring, Repeat Minor (TCR)		
Contaminant:	COLIFORM (TCR)	Analytical Value:	00000000.00
Compliance Period:	1995-06-01 - 1995-06-30	Enforcement ID:	9500001
Violation ID:	9500008	Enf. Action:	State Violation/Reminder Notice
Enforcement Date:	1995-08-21		
System Name:	DOLE CANNERY		
Violation Type:	Monitoring, Repeat Minor (TCR)		
Contaminant:	COLIFORM (TCR)	Analytical Value:	00000000.00
Compliance Period:	1995-08-01 - 1995-08-30	Enforcement ID:	9500002
Violation ID:	9500008	Enf. Action:	State Public Notif Requested
Enforcement Date:	1995-08-21		
System Name:	DOLE CANNERY		
Violation Type:	Monitoring, Repeat Minor (TCR)		
Contaminant:	COLIFORM (TCR)	Analytical Value:	00000000.00
Compliance Period:	1995-06-01 - 1995-06-30	Enforcement ID:	9500003
Violation ID:	9500008	Enf. Action:	State Public Notif Issued
Enforcement Date:	1995-06-27		

H49
NE
1/2 - 1 Mile
Higher

FED USGS 211916157522101

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1913	State:	Hawaii
Altitude:	5.00 ft.	Topographic Setting:	Not Reported
Well Depth:	513.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

H50
NE
1/2 - 1 Mile
Higher

HI WELLS 3-1952-011

Wid:	3-1952-011	Island Code:	3
Island Name:	Oahu	Well no:	1952-11
Well name:	Kapalama 1	Old name:	Not Reported
Yr drilled:	1913	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211916
Longitude:	1575221	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	117-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	5	Well depth:	513

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Solid casing Depth: 492
 Use: SLD
 Use year: 00
 Chloride value: 200
 Pumping Test rate: Not Reported
 Chloride Test: Not Reported
 Units: Not Reported
 Annual Draft: 909
 Geology: Not Reported
 Installed: Not Reported
 Max chlorides: Not Reported
 Min chlorides: Not Reported
 Bot_hole depth: -508
 Bot_perf depth: Not Reported
 Pump Capacity: Not Reported
 Tax map key: 1-5-012:005
 Latest head mmt: 26.2
 Current Cl mmt: Not Reported
 Pump Inst. Date: Not Reported
 Transmissivity: 0
 Pump depth: Not Reported

Perf casing Depth: Not Reported
 Use Desc: Sealed
 Water Top Elev: 31
 Test date: Not Reported
 Drop in water Lvl: Not Reported
 Temperature: Not Reported
 Pump Capacity: 0
 Static Water Lvl: 26.2
 Geology desc: Not Reported
 Last Measured: Not Reported
 Max Cl year: 0
 Min Cl year: 0
 bot_solid depth: -487
 Well Capacity: Not Reported
 Draft (mgd): 2.5
 Aquifer code: 30103
 Cur head mmt: Not Reported
 Const. Date: 01/01/1913 00:00:00
 Surveyor: Not Reported
 Pump intake elev: Not Reported

H51
 NE
 1/2 - 1 Mile
 Higher

HI WELLS 3-1952-021

Wid: 3-1952-021
 Island Name: Oahu
 Well name: Kapalama 4
 Yr drilled: 1927
 Quad_map: 13
 Longitude: 1575221
 Gps: N
 Old number: 116-
 Type: Not Reported
 Ground Elev: 4
 Solid casing Depth: 486
 Use: SLD
 Use year: 99
 Chloride value: 78
 Pumping Test rate: Not Reported
 Chloride Test: Not Reported
 Units: Not Reported
 Annual Draft: Not Reported
 Geology: TKB
 Installed: Not Reported
 Max chlorides: Not Reported
 Min chlorides: Not Reported
 Bot_hole depth: -508
 Bot_perf depth: Not Reported
 Pump Capacity: Not Reported
 Tax map key: 1-5-012:005
 Latest head mmt: 26.3
 Current Cl mmt: Not Reported
 Pump Inst. Date: Not Reported
 Transmissivity: 0
 Pump depth: Not Reported

Island Code: 3
 Well no: 1952-21
 Old name: Not Reported
 Driller: MCCANDLESS
 Latitude: 211917
 UTM: Y
 Owner/user: Castle & Cooke Hawaii, Inc. [03]
 Well_type: Not Reported
 Casing dia: 10
 Well depth: 612
 Perf casing Depth: Not Reported
 Use Desc: Sealed
 Water Top Elev: 0
 Test date: Not Reported
 Drop in water Lvl: Not Reported
 Temperature: Not Reported
 Pump Capacity: 0
 Static Water Lvl: 26.3
 Geology desc: Tertiary Koolau basalt
 Last Measured: Not Reported
 Max Cl year: Not Reported
 Min Cl year: Not Reported
 bot_solid depth: -482
 Well Capacity: Not Reported
 Draft (mgd): Not Reported
 Aquifer code: 30103
 Cur head mmt: Not Reported
 Const. Date: 01/01/1927 00:00:00
 Surveyor: Not Reported
 Pump intake elev: Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID		Database	EDR ID Number
Direction			
Distance			
Elevation			
H52		FED USGS	211917157522101
NE			
1/2 - 1 Mile			
Higher			

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1927	State:	Hawaii
Altitude:	4.00 ft.	Topographic Setting:	Not Reported
Well Depth:	612.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Industrial
Date Measured:	Not Reported		

H53		FED USGS	211917157522000
NE			
1/2 - 1 Mile			
Higher			

BASIC WELL DATA

Site Type:	Multiple wells (a group of wells that are pumped through a single header)	County:	Honolulu
Year Constructed:	Not Reported	State:	Hawaii
Altitude:	6.00 ft.	Topographic Setting:	Not Reported
Well Depth:	Not Reported	Prim. Use of Site:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Water:	Not Reported
Date Measured:	Not Reported		

54		FED USGS	211928157534001
NW			
1/2 - 1 Mile			
Higher			

BASIC WELL DATA

Site Type:	Single well, other than collector or Ranney type	County:	Honolulu
Year Constructed:	1978	State:	Hawaii
Altitude:	3.00 ft.	Topographic Setting:	Not Reported
Well Depth:	Not Reported	Prim. Use of Site:	Waste disposal
Depth to Water Table:	Not Reported	Prim. Use of Water:	Commercial
Date Measured:	Not Reported		

**GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON**

AREA RADON INFORMATION

Federal EPA Radon Zone for HONOLULU County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96819

Number of sites tested: 4

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.475 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.050 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[®] Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the data of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Balkman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the national Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water
Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water
Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

Ground Water Wells

Source: Department of Land and Natural Resources
Telephone: 808-587-0242

RADON

Area Radon Information

Source: USGS

Telephone: 303-202-4210

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 202-564-9370

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration



"Linking Technology with Tradition"

Sanborn® Map Report

Ship to: Martha Spengler
Environet
2850 Paa Street
Honolulu, HI 96819

Order Date: 11/27/2002 **Completion Date:** 12/02/2002

Inquiry #: 889508.2S

P.O. #: NA

Site Name: Sand Island Wastewater Treatment Plant

Address: 1350 Sand Island Parkway

City/State: Honolulu, HI 96819

3012783ACP

808-239-6803

Cross Streets: Sand Island Access Road

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client-supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

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Appendix C
Site Reconnaissance Photographs



Photo 1: View of the northeastern portion of the site. Photograph taken from Building 6 on SIWWTP.

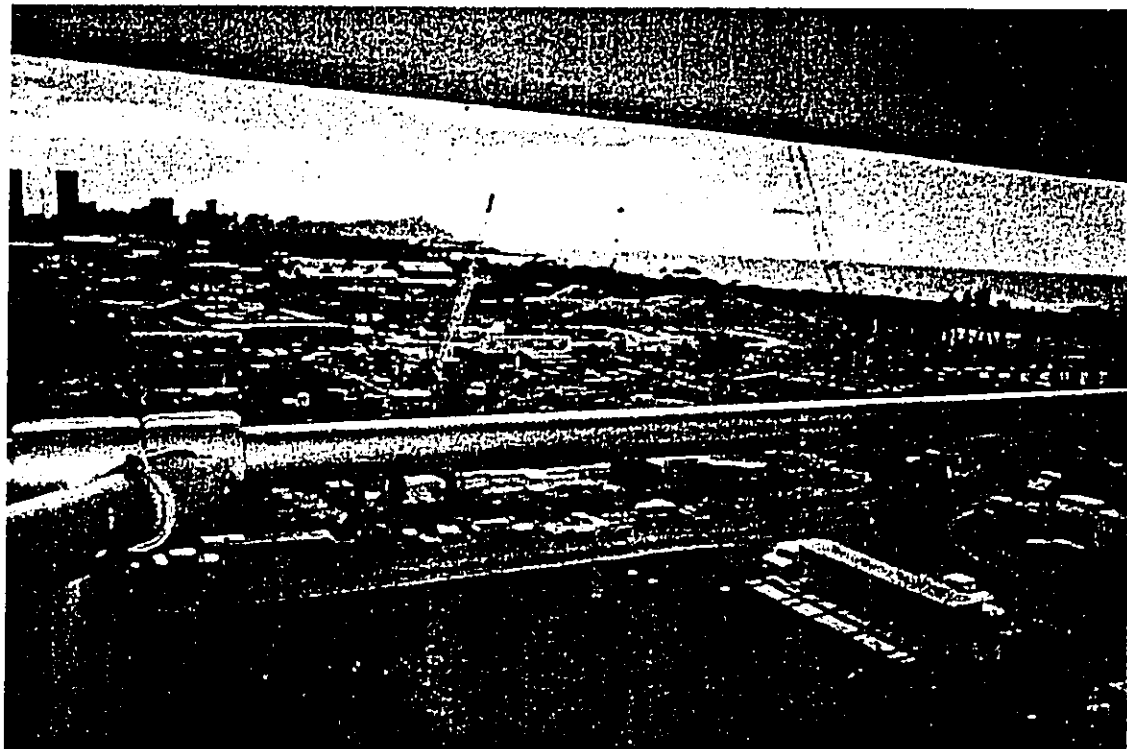


Photo 2: View of the eastern portion of the site from the top of Building 6.



Photo 3: Photograph of soil and debris piles located on the southwestern adjacent property. Photograph is taken from TMK 1-5-041: 006 facing northeast.

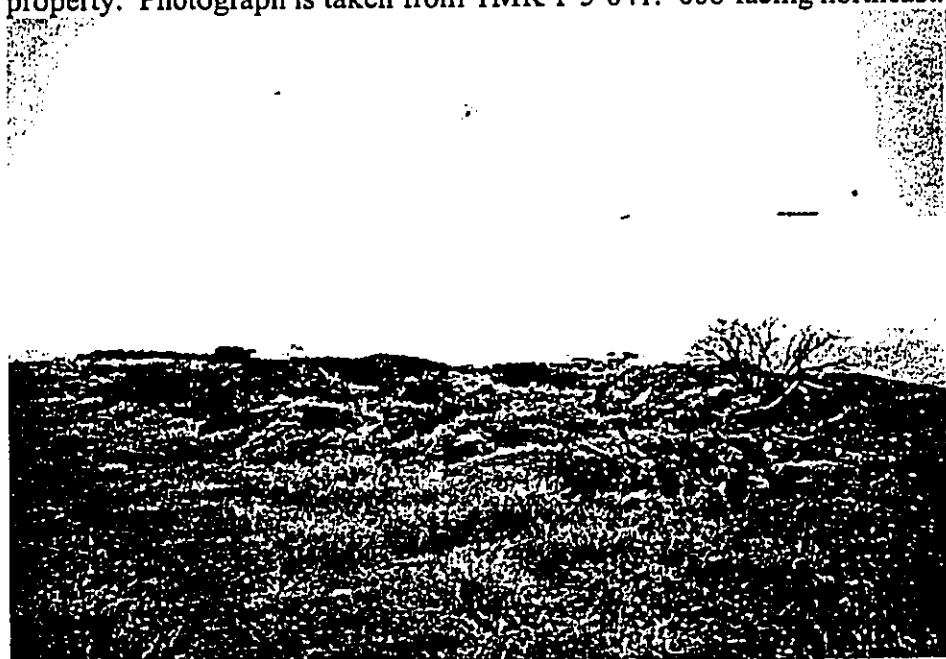


Photo 4: Photograph debris piles and soil located on the southern adjacent property (TMK 1-5-041: 006) facing south.



Photo 5: Photograph of drums and construction debris stored on the southeastern corner of the project site. The drums are reported to be empty and left on site by a previous tenant.



Photo 6: Two 55-gallon drums left on the northeast portion of the project site in the proposed HECO facility location. Drums appear to be left from a previous environmental investigation.



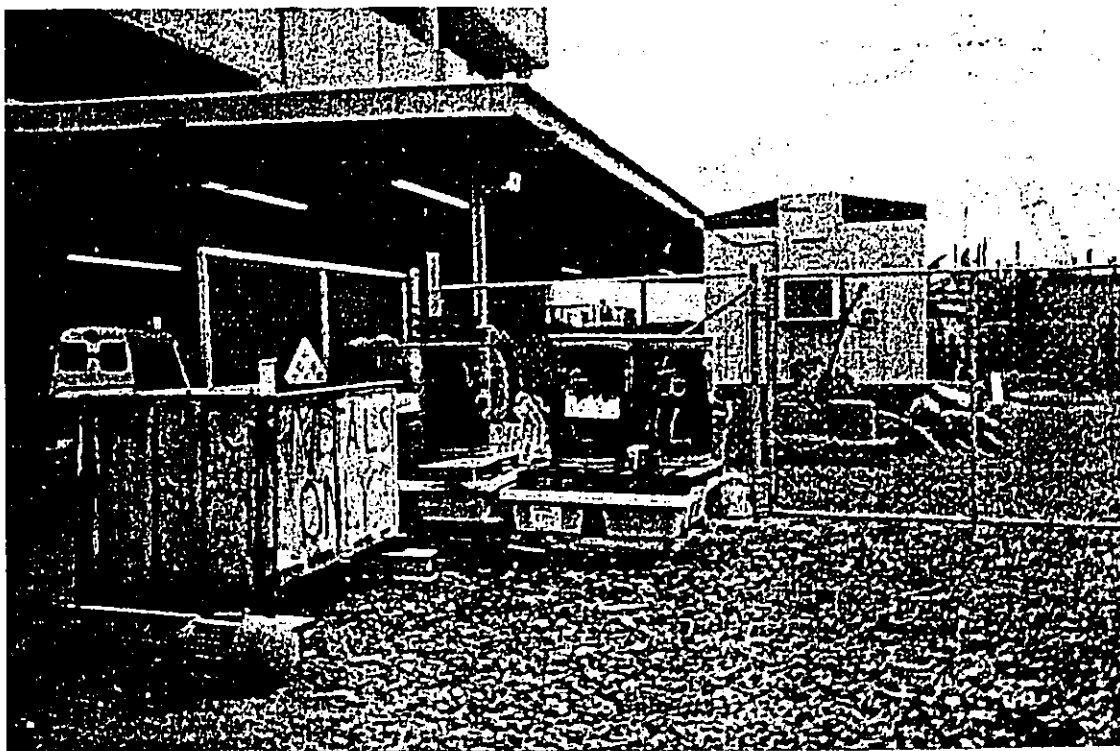
Photograph 7: Photograph of drum storage on the eastern construction staging area.



Photograph 8: Photograph of oil/lubricant dispensing area located on the eastern construction staging area.



Photograph 9: Photograph of oil storage area located beneath Building 10 at the Sand Island WWTP.



Photograph 10: Photograph of oil storage area located south of Building 9 at the Sand Island WWTP.

Appendix D

Questionnaire

Phase I Environmental Site Assessment Questionnaire

1. Facility Name: Sand Island Wastewater Treatment Plant
 Street Name: 1350 Sand Island Parkway
 City and State: Honolulu, Hawaii
 County: Honolulu
 Zipcode: 96819

2. Person(s) answering the questions

A. Name, Company, Title: Jay Nakadulane, City & County (Environmental Services) Acting Assistant Plant Superintendent 847-8332

B. Name, Company, Title: _____
 Phone Number: _____

C. Name, Company, Title: _____
 Phone Number: _____

3. If available, please provide site sketch or map. Indicate the scale and show outlines of all site buildings, all drains, storage areas, wells, drums, transformers, pits, sumps, and drywells.

4. Type of property (administration, warehouse, truck lot, garage, etc.): Industrial, Wastewater Treatment System.

5. Acreage: approx. 5.5 Age of Property Development: 1975

6. Number of stories per building No. 1 2 story Square footage per Building
No. 2 - 1 story, No. 3 - 1 story 3 stories down, No. 3A - 1 story, No. 4 - 2 stories,
No. 5 - 3 stories, No. 6 - 5 stories, No. 7, none, No. 8 - 2 stories, No. 9 - 3 stories,
No. 10 - 2 stories, No. 11 - 1 story.

7. If known, please list previous occupants and what each used the site (please go back occupant by occupant until pre-development, if possible):

Previous occupant/use: _____	Dates _____
Previous occupant/use: _____	Dates _____
Previous occupant/use: _____	Dates _____
Previous occupant/use: _____	Dates _____
Previous occupant/use: _____	Dates _____
Previous occupant/use: _____	Dates _____

8. Please list current onsite activities: Treatment of wastewater, repair & maintenance wastewater related equipment, laboratory related work for waste water analysis.

Are vehicles washed onsite? If so, yes,
where? a designated wash site for vehicles wash is located near

Is maintenance conducted onsite? If so, what types of maintenance activities take place? yes, the repair & maintenance of wastewater related equipment in buildings 8 & 9.

Is fueling conducted onsite? If so, yes
where? building 8 has a 1500 gal. Diesel fuel tank which is used to fuel portable equipment.

Is painting conducted onsite? If so, yes
where? Painting is done at the rear of the plant, the S/E corner. Painting are performed on repair equipment

9. Are there any hydraulic lifts onsite? If so, indicate location and describe fluids used and their management as well as the condition of any subsurface pits associated with the lifts. yes, most of the hydraulic equipments are portable. The stationary equipments are located in the building. Uses typical Hyd. oil.

10. Water is supplied
by: Board of Water Supply.

If groundwater is used, provide information about groundwater wells:

Size	Location	Installation Date	Depth
<u>N/A</u>			

How often are the wells sampled for water quality? N/A
What are the results? N/A
Please provide copies of the analytical results if possible.

11. Sewer service is provided by: Plant, In plant sewer system

12. Are there any floor drains in the building(s)? If so, how many? Where do they discharge? Please indicate the drain locations on the site sketch. yes, all buildings. all drains discharge to our in plant system.

13. Are there any oil-water separators onsite? If so, indicate the following:

Size	Location	Installation Date	Condition/Non-aqueous phase
N/A			

Who empties/cleans the separators? N/A

How often? _____

Is the waste tested prior to disposal? If so, what are the results? _____

Where/how is the waste disposed of? _____

14. Is there a septic system onsite? If so, indicate the following:

Size	Location	Installation Date	Permits
N/A			

Who services/cleans the septic tank? _____

How frequently? _____

15. Electric service is provided

by: H.E.C.O.

16. Are there storm water drains onsite? If so,

How many? yes-1 Discharge Point? Honolulu Harbor

Locations North West Side of plant.

Are drainage ditches or retention ponds present onsite? If so, yes.

How many? 1 Discharge Point? Same, Harbor

Locations West Side of the plant.

If no drains, ditches, or retention ponds how is storm water handled? _____

17. Indicate all chemical and raw materials used, generated stored, released, transported, or disposed of in connection with the site. Please show locations of drums, chemical storage areas, and tanks on the site sketch.

Chemical	Quantity	Location	Condition
<u>See on Tier II</u>	<u>Tier II</u>	<u>Farms</u>	

18. Indicate all hazardous waste stored or generated onsite.

Chemical	Quantity	Location	Condition	Hauler
<i>See Tier II forms</i>				

Please provide representative manifests

19. Current/active ASTs. Are the ASTs registered/permitted by the Fire Department? ? . If so, please provide the permit number(s).

Please provide any leak detection reports, inventory reports, or reports regarding releases or tank removal.

Size	Contents	Date Installed	Tank Material	Registration	Condition
<i>7500</i>	<i>500 gal. Diesel</i>	<i>1976</i>	<i>Steel</i>		<i>excellent</i>
<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>		<i>"</i>

20. Inactive or removed ASTs. Were the ASTs permitted by the Fire Department? ? . If so, please provide the permit numbers

Please provide any leak detection reports, inventory reports, or reports regarding releases or tank removal.

Size	Contents	Date Installed	Tank Material	Registration	Condition
<i>N/A</i>			<i>Fiberglass</i>		

21. Current/active USTs. Please provide a copy of the registration as well as any leak detection reports, inventory reports, or reports regarding releases or tank removal.

Size	Contents	Date Installed	Tank Material	Registration	Condition
<i>1000 gal</i>	<i>Diesel</i>	<i>1997</i>	<i>Fiberglass</i>		<i>excellent</i>

→ Replaced
with tanks

Size	Contents	Date Installed	Tank Material	Registration	Condition
100 gals	Diesel	1997	Steel		Excellent
See gals	?	?	Steel	See report	OLD/Rusted

23. Identify suspect PCB containing equipment. Please note location on site sketch. Equipment includes transformers, circuit breakers, capacitors, hydraulic fluids, lubricants, cutting oils, lamp ballasts, vacuum pumps, heat transfer system, and plasticizer.

applications: NONE

Equipment	Owner	Condition	PCB-content	Serial #	Pathways

24. Solid waste currently generated onsite:

Type	Container/Location	Hauler	Condition
General trash	Trash Bin / Various	City + County of Hen.	
Used Oil	55 gal drums / Various	W. Kentucky	
Used Oil Filters	Trash Bin / Various	C. + Co. of Hen.	
Oily Rags	" "	"	
Used Pallets	" "	"	
Used Drums	" "	Oil Company	
Used Antifreeze	55 gal drums / E.P.S. station	United Tech	
Scrap Metal	Bin / Build 8	C. + Co. of Hen. recycle	
Used Tires	" "	"	
Used Batteries	" "	"	
Parts Washer Solvent	" "	Solvent Comp.	
Other			
Other			
Other			

25. Has an asbestos survey (including sampling) been conducted at the site? If yes, when and by whom?

Yes, Private Company

What were the results? Asbestos was found in the Incinerator area, Thickman area & the floor tiles of the P/C Office.

26. What does wastewater consist of?

Where is it discharged? Storm Discharge - 2.5 miles deep Ocean outfall.
Provide permit number, if applicable, and indicate any problems:

28. Have you note any of the following on the site or adjacent properties:

Stressed vegetation (if so, please indicate the location): NONE

Indications of Liquid or Solid Waste Dumping (if so, please indicate the location): NONE

Discolored Flowing or Poned Waters (if so, please indicate the location): NONE

Abnormal Odors (if so, please indicate the location): NONE

Presence of unnatural fill material or soil grading (if so, please indicate the location): NONE

Remedial Activities/Contaminated Site Cleanup Activities (if so, please indicate the location): PCB Cleanup. Site of the future Clarifier Tanks 7 & 8.

09-23-02 08:25AM Environmental Services 10 808 848-6532

p. 8

POI 8/23
g: AP/S
02-10 File
58C

BENJAMIN J. CAVETANO
GOVERNOR OF HAWAII



BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

HONOLULU, HAWAII

August 22, 2002

U08038SF

Mr. Sean Omatsu
Wastewater Division
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

Dear Mr. Omatsu:

SUBJECT: Sand Island Wastewater Treatment Plant
1350 Sand Island Access Road, Honolulu
Facility I.D. No. 9-103745 / Release I.D. No. 020027

The Department of Health (DOH) has reviewed the *Underground Storage Tank Closure Report*, dated May 6, 2002 and prepared by Fuel Oil Polishing Company, Inc. Please note that the aforementioned document now resides with the public record for the subject facility.

Based on the information submitted, we conclude that *no further action* is necessary in response to the subject release. Please be aware that if future information reveals presence of contamination originating from the subject site, then additional investigation and/or cleanup actions may be required.

Should you have any questions regarding this letter, please contact Mr. Shunsheng Fu of our Underground Storage Tank Section at (808) 588-4226.

Sincerely,

STEVEN Y.K. CHANG, P.E., CHIEF
Solid and Hazardous Waste Branch

Post-it® Fax Note	7871	Date	9/20/02	# of pages	1
To	SEAN OMATSU	From	SEAN OMATSU		
Co./Dept.		Co.			
Phone #		Phone #	521-5153		
Fax #	848-6532	Fax #			

JN 2
SN -
File!

From: Sybico, Jesse
Sent: Thu 4/11/2002 8:57 AM
To: Fu Shun Sheng
Cc: Lam, Collins

Subject:

Mr. Fu,

This is to confirm my report to Mr. Jack Richardson and my subsequent telephone call to you yesterday, 04/10/02.

Date exposed: 04/09/02
Location: 1350 Sand Island Parkway Honolulu, HI 96819
Facility Name: Sand Island WasteWater Treatment Plant
Activity: UST uncovered while excavating trench for new sewer line
Reported by: Jesse Sybico, CM Resident Engineer, T845-2573 on 04/10/02
Reported to: Mr. Jack Richardson, T586-4226
UST Dimensions 3'diameter x 8' long = 500 gals (approximate)
Sheen noted floating in pit
Also reported to Fire Prevention Bureau: Brenda, T831-7765

Release # 020027
Facility # New
DOH Officer, Mr. Shun Sheng Fu, T586-4226
Alternate: Roxanne Kwan

Owner: City & County of Honolulu
ENV - Roy Takara, Plant Division Chief, T847-8300
DDC - Cindy Masuoka, Wastewater Project Engineer, T527-5843

General Contractor: Robison Construction Inc, Tim Tucker, 843-8144
Specialty Subcontractor (to be hired): Fopco, Dennis McElrath, 682-7161

Should you need more information, please give me a call. Also, per your request, I will inform you when Fopco gets ready and removes the UST.



Environmental Protection Agency
Washington, DC 20460

Form Approved
OMB No. 2050-0061

Notification for Underground Storage Tanks

STATE USE ONLY

Agency Name and Address: Department of Health Solid and Hazardous Waste Branch 919 Ala Moana Blvd., Room 212 Honolulu, Hawaii 96814 Phone (808) 586-4226		ID NUMBER:
<input type="checkbox"/> A. NEW FACILITY		DATE RECEIVED:
<input checked="" type="checkbox"/> B. AMENDED		DATE ENTERED INTO COMPUTER:
<input type="checkbox"/> C. CLOSURE		DATA ENTRY CLERK INITIALS:
<input checked="" type="checkbox"/> Number of tanks at facility	<input type="checkbox"/> Number of continuation sheets attached	OWNER WAS CONTACTED TO CLARIFY RESPONSES, COMMENTS:

INSTRUCTIONS AND GENERAL INFORMATION

Please type or print in ink. Also, be sure you have signatures in ink for sections VIII and XI. Complete a notification form for each location containing underground storage tanks. If more than 8 tanks are owned at this location, you may photocopy pages 3 through 5 and use them for additional tanks.

The primary purpose of this notification program is to locate and evaluate underground storage tank systems (USTs) that store or have stored petroleum or hazardous substances. The information you provide will be based on reasonably available records, or in the absence of such records, your knowledge or recollection.

Federal law requires UST owners to use this notification form for all USTs storing regulated substances that are brought into use after May 8, 1988, or USTs in the ground as of May 8, 1988 that have stored regulated substances at any time since January 1, 1974. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA), as amended.

Who Must Notify? Section 9002 of RCRA, as amended, requires owners of USTs that store regulated substances (unless exempted) to notify designated State or local agencies of the existence of their USTs. "Owner" is defined as:

- the case of an UST in use on November 8, 1984, or brought into use after that date, any person who owns an UST used for storage, use, or dispensing of regulated substances; or
- in the case of an UST in use before November 8, 1984, but no longer in use on that date, any person who owned the UST immediately before its discontinuation.

Also, if the State so requires, any facility that has made any changes to facility information or UST system status, must submit a notification form (only amended information needs to be included).

What USTs Are Included? An UST system is defined as any one or combination of tanks that (1) is used to contain an accumulation of regulated substances, and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Regulated USTs store petroleum or hazardous substances (see the following "What Substances Are Covered").

What Tanks Are Excluded From Notification?

- Tanks removed from the ground before May 8, 1988;
- Farm or residential tanks of 1,100 gallons or less capacity storing motor fuel for noncommercial purposes;
- Tanks storing heating oil for use on the premises where stored;
- Septic tanks;
- Pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an interstate pipeline facility regulated under State laws;
- Surface impoundments, pits, ponds, or lagoons;
- Storm water or waste water collection systems;
- Flow-through process tanks;
- Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
- Tanks on or above the floor of underground areas, such as basements or tunnels;
- Tanks with a capacity of 110 gallons or less.

What Substances Are Covered? The notification requirements apply to USTs containing petroleum or certain hazardous substances. Petroleum includes gasoline, used oil, diesel fuel, crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (80 degrees Fahrenheit / 14.7 pounds per square inch absolute). Hazardous substances are those listed in Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA.

Where To Notify? Send completed forms to:

Department of Health
Solid and Hazardous Waste Branch
919 Ala Moana Blvd., Room 212
Honolulu, Hawaii 96814 Phone (808) 586-4226

When To Notify? 1. Owners of USTs in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1988. 2. Owners who bring USTs into use after May 8, 1988, must notify within 30 days of bringing the UST into use. 3. If the State requires notification of any amendments to facility, send information to State agency immediately.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$11,000 for each tank for which notification is not given or for which false information is given.

I. OWNERSHIP OF UST(s)			II. LOCATION OF UST(s)		
Owner Name (Corporation, Individual, Public Agency, or Other Entity) CITY & COUNTY OF HONOLULU			If required by State, give the geographic location of USTs by degrees, minutes, and seconds. Example: Latitude 42° 36' 12" N, Longitude 85° 24' 17" W Latitude _____ Longitude _____		
Street Address 650 SOUTH KING ST.			Facility Name or Company Site Identifier, as applicable SAND ISLAND PARKWAY WWPS*		
County			<input type="checkbox"/> If address is the same as in Section I, check the box and proceed to section III. <input type="checkbox"/> If address is different, enter address below: Street Address 16-1 SAND ISLAND PARKWAY		
City HONOLULU	State HI	Zip Code 96813	City HONOLULU	State HI	Zip Code 96819

* WWPS = wastewater pump station



United States
Environmental Protection Agency
Washington, DC 20460

Notification for Underground Storage Tanks

III. TYPE OF OWNER

- Federal Government
- State Government
- Commercial
- Local Government
- Private

IV. INDIAN COUNTRY

USTs are located on land within an Indian Reservation or on trust lands outside reservation boundaries.

USTs are owned by a Native American nation or tribe.

Tribe or Nation where USTs are located:

V. TYPE OF FACILITY

- Gas Station
- Petroleum Distributor
- Air Taxi (Airline)
- Aircraft Owner
- Auto Dealership
- Railroad
- Federal - Non-Military
- Federal - Military
- Industrial
- Contractor
- Trucking/Transport
- Utilities
- Residential
- Farm
- Other (Explain) _____

VI. CONTACT PERSON IN CHARGE OF TANKS

Name: <i>WATSON GIER</i>	Job Title: <i>WWPS SUPT.</i>	Address: <i>1350 Sand Island Parkway Honolulu, HI 96819</i>	Phone Number (Include Area Code): <i>847-8319</i>
-----------------------------	---------------------------------	--	--

VII. FINANCIAL RESPONSIBILITY

I have met the financial responsibility requirements (in accordance with 40 CFR Subpart H) by using the following mechanisms:

Check All that Apply

- Self Insurance
- Commercial Insurance
- Risk Retention Group
- Local Government Financial Test
- Guarantee
- Surety Bond
- Letter of Credit
- Bond Rating Test
- State Funds
- Trust Fund
- Other Method (describe here) _____

VIII. CERTIFICATION (Read and sign after completing ALL SECTIONS of this notification form)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in Sections I through XI of this notification form and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative (Print) <i>Carlton Yap</i>	Signature <i>Carlton Yap</i>	Date Signed <i>12/17/99</i>
---	---------------------------------	--------------------------------

Paperwork Reduction Act Notice
EPA estimates public reporting burden for this form to average 30 minutes per response including time for reviewing instructions, gathering and maintaining the data needed and completing and reviewing the form. Send comments regarding this burden estimate to Director, OP, Regulatory Information Division (2137), U.S. Environmental Protection Agency, 401 M Street, Washington D.C. 20460, marked "Attention Desk Officer for EPA." This form omits the previous notification form as printed in 40 CFR Part 280, Appendix I. Previous editions of this notification form may be used while supplies last.



United States
Environmental Protection Agency
Washington, D.C. 20460

OMB No. 2060-0068

Notification for Underground Storage Tanks

IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for all tanks and piping at this location.)

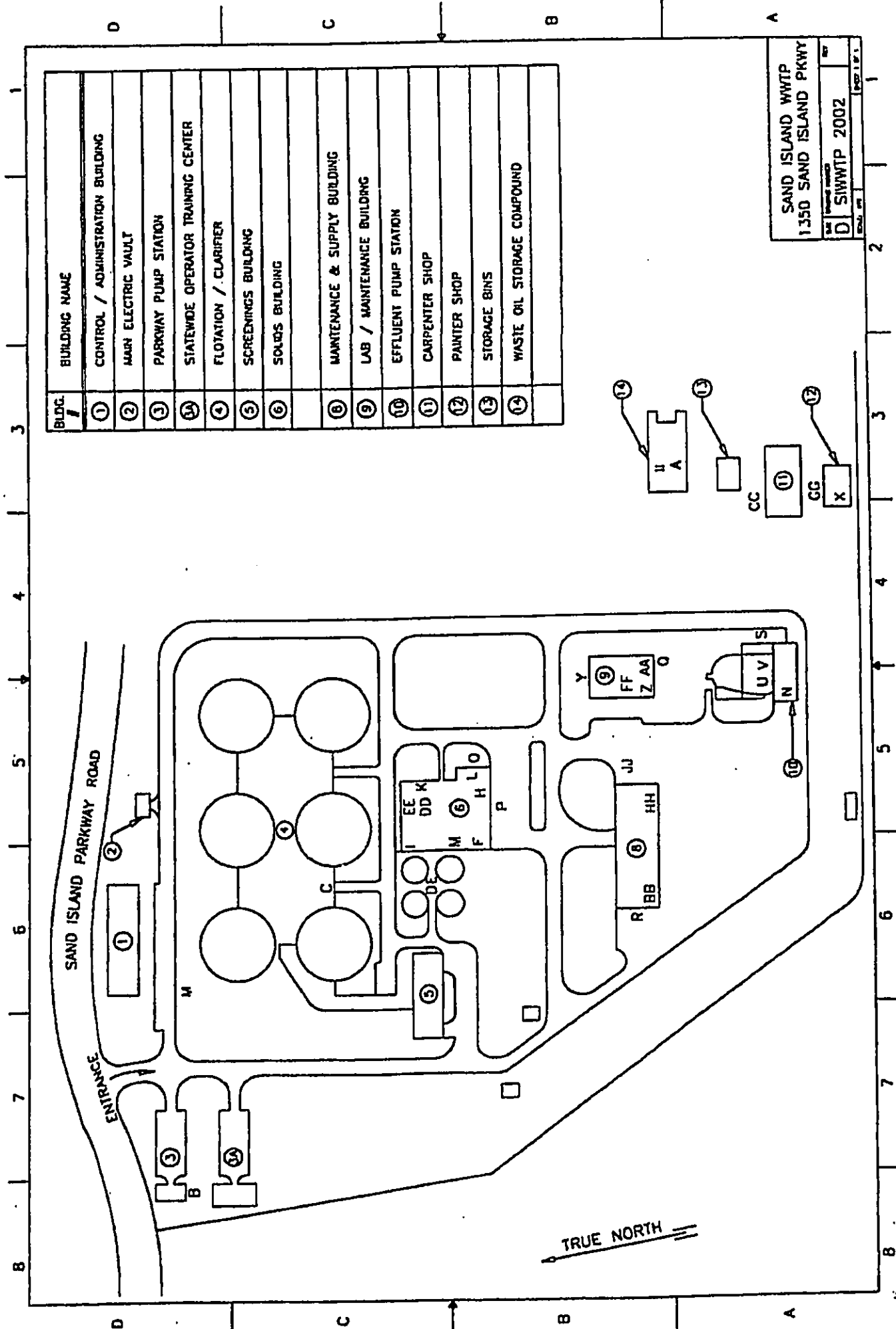
Notification Number	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____	Tank No. _____
Status of Tank (check only one) Currently In Use <input checked="" type="checkbox"/> Temporarily Closed <input type="checkbox"/> Permanently Closed <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date of Installation (month/year)	1981 (EXISTING)				
Estimated Total Capacity (gallons)	1000				
Material of Construction (check all that apply) Asphalt Coated or Bare Steel <input type="checkbox"/> Cathodically Protected Steel <input type="checkbox"/> Coated and Cathodically Protected Steel <input type="checkbox"/> Composite (Steel Clad with Fiberglass) <input type="checkbox"/> Fiberglass Reinforced Plastic <input checked="" type="checkbox"/> Lined Interior <input type="checkbox"/> Excavation Liner <input type="checkbox"/> Double Walled <input type="checkbox"/> Polyethylene Tank Jacket <input type="checkbox"/> Concrete <input type="checkbox"/> Unknown <input type="checkbox"/> If Other, please specify here _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check box if tank has ever been repaired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Piping Material (check all that apply) Bare Steel <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> Fiberglass Reinforced Plastic <input checked="" type="checkbox"/> Copper <input type="checkbox"/> Cathodically Protected <input type="checkbox"/> Double Walled <input checked="" type="checkbox"/> Secondary Containment <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Other, please specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Piping Type "Safe" Suction (no valve at tank) <input checked="" type="checkbox"/> (Check all that apply) "U.S." Suction (valve at tank) <input type="checkbox"/> Pressure <input type="checkbox"/> Gravity Feed <input type="checkbox"/> Check box if piping has ever been repaired	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



United States
 Environmental Protection Agency
 Washington, DC 20460

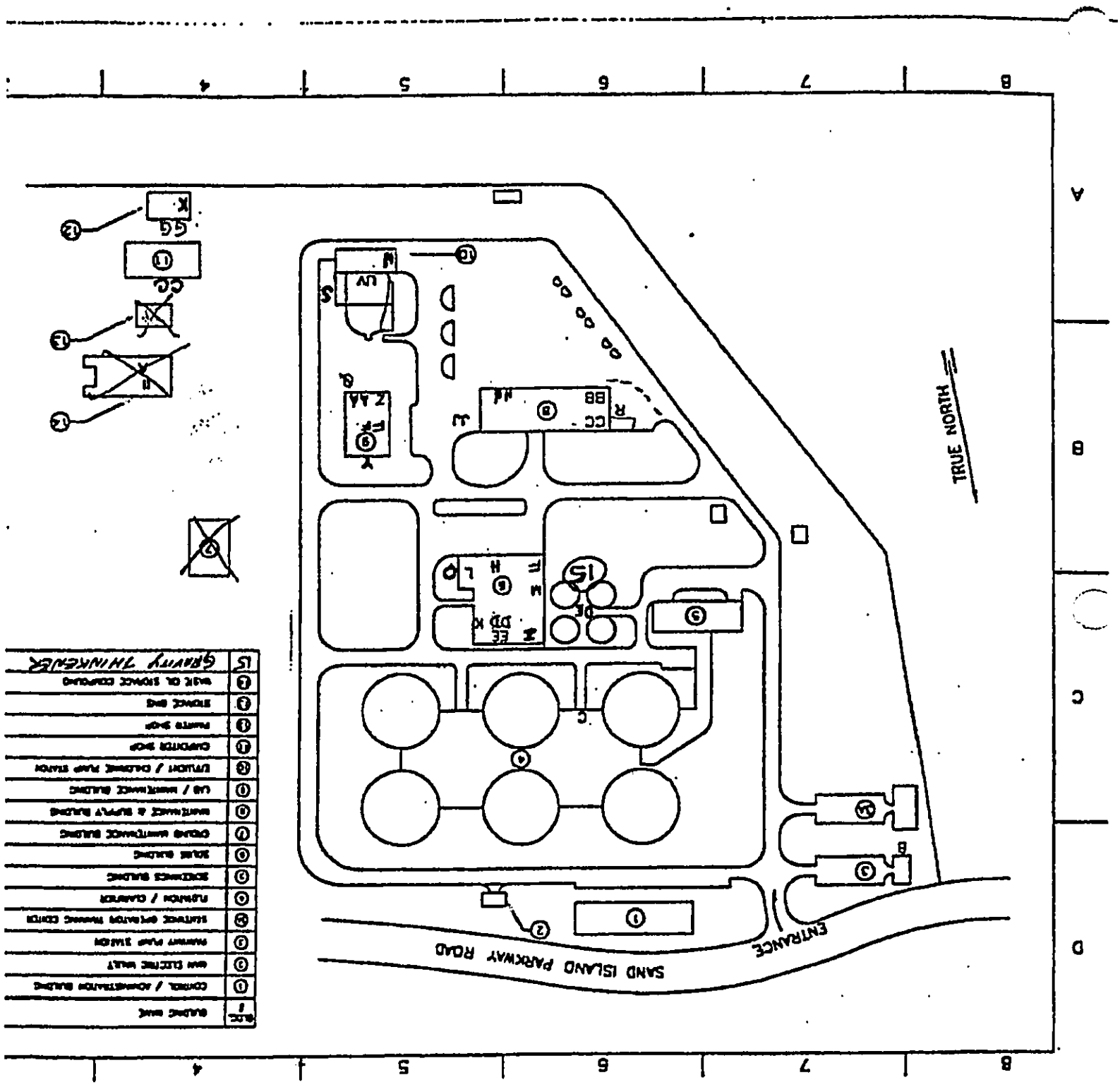
Notification for Underground Storage Tanks

Identification Number	Tank No. 1	Tank No. 2	Tank No. 3	Tank No. 4	Tank No. 5					
Substance Currently Stored (or last stored in the case of closed tanks) (Check all that apply)	Gasoline <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Diesel <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Gasohol <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Kerosene <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Heating Oil <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Used Oil <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
If Other, please specify here										
Hazardous Substance CERCLA name and/or CAS number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Mixture of Substances Please specify here	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8. Release Detection (check all that apply)	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE
	Manual tank gauging <input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
	Tank tightness testing <input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
	Inventory Control <input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
	Automatic tank gauging <input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
	Vapor monitoring <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Groundwater monitoring <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Interstitial monitoring <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Automatic line leak detectors <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Line tightness testing <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No release detection required (such as some types of suction piping, emergency generator tanks or field constructed tanks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other method allowed by implementing agency (such as SIRI)										
Please specify other method here										
9. Spill and Overfill Protection	Overfill device installed <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Spill device installed <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



SAND ISLAND WWTP
 1350 SAND ISLAND PKWY
 SAND ISLAND, AK 99588
 SHEET NO. D
 PROJECT NO. SIWWTP 2002
 DATE: 10/1/01





HAZARDOUS MATERIALS STORAGE LOCATION MAP KEY
SAND ISLAND WWTP

LETTER	MATERIALS	LOCATION	BRIEF DESCRIPTION
A	LABORATORY HAZARDOUS WASTE	WASTE OIL STORAGE COMPOUND	EAST END (IN A SHED)
B	DIESEL FUEL #2	PARKWAY PUMP STATION (#3)	SOUTHWEST END OF BUILDING (UNDERGROUND STORAGE TANK)
C	OIL	FLOTATOR/CLARIFIER (#4)	SERVICE AREA #3 (BASEMENT)
D	ODOR CONTROL CHEMICALS	GRAVITY THICKENER BASEMENT	
E	SODIUM HYDROXIDE (CAUSTIC SODA)	GRAVITY THICKENER BASEMENT	
F	GASOLINE	SOLIDS BUILDING (#6)	GROUND FLOOR, CHEMICAL ROOM, WEST END OF BUILDING
G	OILS	FLOTATOR/CLARIFIER	OUTSIDE NEXT TO ROAD
H	NITRIC ACID	SOLIDS BUILDING (#6)	GROUND FLOOR, WEST SIDE
I	SODIUM HYDROXIDE (CAUSTIC SODA)	SOLIDS BUILDING (#6)	GROUND FLOOR, EAST SIDE
J	OILS	SOLIDS BUILDING	GROUND FLOOR, EAST END OF BUILDING
K	OILS	SOLIDS BUILDING (#6)	TOP LEVEL, INCINERATION AREA
L	SODIUM HYDROXIDE (CAUSTIC SODA)	SOLIDS BUILDING	GROUND FLOOR, WEST SIDE
M	POLYMERS	SOLIDS BUILDING (#6)	GROUND FLOOR, NEXT TO PAINT LOCKER
	POLYMERS	CHEMICAL FEED FACILITY	FENCED AREA OUTSIDE CHEMICAL FEED FACILITY
N	OILS	EFFLUENT PUMP STATION (#10)	GROUND FLOOR, UNDER EAST STAIRWAY
O	DIESEL FUEL #2	SOLIDS BUILDING (#6)	OUTSIDE, NEXT TO ROAD (ABOVEGROUND STORAGE TANK)
P	PAINTS, CALCIUM HYPOCHLORITE	SOLIDS BUILDING (#6)	OUTSIDE BUILDING IN GRAY 20' MATSON CONTAINER
Q	OILS	MAINTENANCE & SUPPLY BUILDING (#8)	OUTSIDE BUILDING NEXT TO ROAD

~~DELETE~~

~~DELETE~~

HAZARDOUS MATERIALS STORAGE LOCATION MAP KEY

SAND ISLAND WWTP

~~DELETE~~

R	DEGREASER	LAB/MAINTENANCE BUILDING (#9)	OUTSIDE BUILDING NEXT TO ROAD
S	DIESEL FUEL #2	EFFLUENT PUMP STATION (#10)	OUTSIDE, GROUND LEVEL EAST SIDE OF FOREBAY
T	OILS/USED OIL	EFFLUENT/CHLORINE PUMP STATION	SECOND LEVEL WEST END OF BUILDING
U	DEGREASER	EFFLUENT PUMP STATION (#10)	SECOND LEVEL WEST END OF BUILDING
V	SODIUM HYDROXIDE (CAUSTIC SODA)	EFFLUENT PUMP STATION (#10)	GROUND LEVEL, WEST END OF CHLORINE CYLINDERS
			GROUND LEVEL, SOUTH END OF CHLORINE CYLINDERS (200 POUNDS)
X	PAINTS	CARPENTER/PAINT SHOP	GROUND LEVEL, WHOLE SHOP
Y	LAB CHEMICALS	LAB/MAINTENANCE BUILDING (#9)	2ND FLOOR BIOLOGY AND CHEMISTRY LABS
Z	USED OILS	NEW CARPENTER SHACK	CARPENTER SHACK, NORTH SIDE
AA	TRICHLOROETHYLENE AEROSOL PAINTS, ODOR CONTROL CHEMICALS	MAINTENANCE & SUPPLY BUILDING (#8)	STOREROOM, GROUND LEVEL
BB	ACETYLENE	MAINTENANCE & SUPPLY BUILDING (#8)	GROUND LEVEL, WEST END OF MACHINE SHOP
CC	GASOLINE	CARPENTER/PAINT SHOP MAINTENANCE COMPOUND	LOCATED IN WEST END OF SHOP, STORED IN STORAGE CABINET
DD	OILS	SOLIDS BUILDING (#6)	2ND FLOOR, NORTHEAST END OF BUILDING
EE	USED OILS	SOLIDS BUILDING (#6)	2ND FLOOR, NORTHEAST END OF BUILDING
FF	ACETYLENE	LAB/MAINTENANCE BUILDING (#9)	GROUND FLOOR, SOUTHWEST END OF BUILDING
GG	USED OILS	WASTE OIL STORAGE COMPOUND	GROUND FLOOR NORTH OF CARPENTER BUILDING
HH	OIL	MAINTENANCE & SUPPLY BUILDING (#8)	GROUND FLOOR POWER GENERATION SECTION

Tier Two
Emergency and Hazardous Chemical Inventory
Specific Information by Chemical

Reporting Period: January 1 to December 31, 2002

Page 1

Printed: March 3, 2003

Facility Name: Sand Island WWTP

FACILITY IDENTIFICATION:

Sand Island WWTP
1350 Sand Island Parkway
Honolulu, HI 96819
County: Honolulu
Number of employees:

IDENTIFICATION NUMBERS:

SIC: 4952

CONTACT INFORMATION:

City & County of Honolulu, Department of Environmental Services,
Title: Director Contact Type 1: Owner / Operator
Address: 1000 Uluohia Street, Suite 308, Kapolei, HI, 96707
Phones: Work: 692-5159

Division of Wastewater Treatment and Disposal, SCADA Control Center,
Title: SCADA Operator Contact Type 1: Emergency Contact
Address: 1350 Sand Island Parkway, Honolulu, HI, 96819
Phones: 24-hour: 847-8307

CHEMICAL DESCRIPTIONS:

[x] All chemicals in inventory are identical to last year's submission

[x] Identical to previous year

CAS: 68476-34-6

[] TRADE SECRET

CHEM NAME: DIESEL FUEL

[] Pure [x] Mix [] Solid [x] Liquid [] Gas [] EHS

PHYSICAL & HEALTH HAZARDS:

[x] Fire [] Sudden Release of Pressure [] Reactivity [x] Immediate (acute) [] Delayed (chronic)

INVENTORY:

Max Daily Amt code: 05

Avg Daily Amt code: 05

No. of days on-site: 365

STORAGE CODES & STORAGE LOCATIONS:

Container Type: B Pressure: 1 Temp: 4 Location: UST, Southwest of Parkway WWPS Amount:

Container Type: A Pressure: 1 Temp: 4 Location: AST, East of Effluent Pump Station forebay Amount:

CHEMICALS IN INVENTORY STATE FIELDS: No additional chemical information is required by Hawaii

[x] Identical to previous year

CAS: 7697-37-2

[] TRADE SECRET

CHEM NAME: NITRIC ACID, >40%

[] Pure [x] Mix [] Solid [x] Liquid [] Gas [x] EHS

PHYSICAL & HEALTH HAZARDS:

[x] Fire [] Sudden Release of Pressure [] Reactivity [x] Immediate (acute) [] Delayed (chronic)

INVENTORY:

Max Daily Amt code: 04

Tier Two
Emergency and Hazardous Chemical Inventory
Specific Information by Chemical

Reporting Period: January 1 to December 31, 2002

Page 2

Printed: March 3, 2003

Facility Name: Sand Island WWTP

Max Daily Amt code: 04
Avg Daily Amt code: 03
No. of days on-site: 365

STORAGE CODES & STORAGE LOCATIONS:

Container Type: D Pressure: 1 Temp: 4 Location: Inside Solids Building (West Side) Amount:

CHEMICALS IN INVENTORY STATE FIELDS: No additional chemical information is required by Hawaii

Identical to previous year

CAS: 1310-73-2

TRADE SECRET

CHEM NAME: SODIUM HYDROXIDE, (LIQUID)

Pure Mix Solid Liquid Gas EHS

PHYSICAL & HEALTH HAZARDS:

Fire Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)

INVENTORY:

Max Daily Amt code: 04
Avg Daily Amt code: 04
No. of days on-site: 365

STORAGE CODES & STORAGE LOCATIONS:

Container Type: D Pressure: 1 Temp: 4 Location: Inside Gravity Thickener Building, Basement Amount:

CHEMICALS IN INVENTORY STATE FIELDS: No additional chemical information is required by Hawaii

Identical to previous year

CAS: 7732-18-5

TRADE SECRET

CHEM NAME: SODIUM HYPOCHLORITE

Pure Mix Solid Liquid Gas EHS

PHYSICAL & HEALTH HAZARDS:

Fire Sudden Release of Pressure Reactivity Immediate (acute) Delayed (chronic)

INVENTORY:

Max Daily Amt code: 02
Avg Daily Amt code: 01
No. of days on-site: 365

STORAGE CODES & STORAGE LOCATIONS:

Container Type: O Pressure: 1 Temp: 4 Location: Inside Effluent Pump station (North side) Amount:

CHEMICALS IN INVENTORY STATE FIELDS: No additional chemical information is required by Hawaii

FACILITY STATE FIELDS:

Hawaii requests the following:
Indicate Island: Oahu

STATE / LOCAL FEES: \$100

I have attached a site plan

I have attached a list of site coordinate abbreviations

I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operators's authorized representative: Earl W. M. Ng, Acting Chief

Division of Wastewater Treatment and Disposal

Date Signed:

Appendix E
Selected Documents Reviewed at DOH

December 5, 1991

SANDIS

To: Solid and Hazardous Waste
From: Mike Cripps, On-Scene Coordinator
Hazard Evaluation and Emergency Response Office
Subject: ~~Site Visit Inspection Report:~~ Sand Island Location
Towmasters Auto Compacting and Storage Facility, November
25, 1991

On 11/20/91 an inspection of the facility was made at the 11/19/91 request of Phil Dingle, a C&C Honolulu Wastewater Treatment Operator at the Sand Island Wastewater Treatment Facility adjacent to the Towmasters Operation. Both sites are on state land leased to City and County. The towmasters operation is on the portion where a future secondary treatment facility would be built.

A walkthrough with video documentation was made by Terry Corpus and Mike Cripps (HEER). Also present were Mr. Dingle, Charlie McAngus shift supervisor, and Scott Schultz a Wastewater Treatment Engineer.

In the complaint Mr. Dingle states switches containing elemental mercury and transformers containing PCB'S have been dumped by City and County at the facility and the following problems exist on the Towmasters auto junking site:

- 1) Waste oil, gasoline, ethylene glycol (antifreeze), brake fluid (glycols), asbestos (brake linings) contaminating soil from ongoing demolition process.

RECOMENDATIONS:
THE HEER OFFICE HAS NOT
FOUND AN IMMEDIATE & SUB-
STANTIAL ENDANGERMENT AT
THE SITE. THE HEER OFFICE
RECOMMENDS THAT THE SOLIDWASTE
PROGRAM INVESTIGATE THE SITE,
PRIMARILY THE OIL CONTAMINATED
SOIL AND THE BATTERY DISPOSAL
MESS.

Mikes
interpretation
of Jim's writing

- 2) Batteries from cars not removed during demolition, left on soil in smashed condition.

Additionally, a pile of soil approximately 30 feet high from ~~MPF~~^{MTL} busbarn/police station creates a dust hazard. The soil may be LUST contaminated. A City and County designated homeless persons campsite is located immediately downwind of the perimeter fence.

Observations:

The site contains several thousand cars which have been compacted by a crusher. The crusher is no longer at the site. There is, however, an ongoing stripping operation where cars are brought in and prepared for removal to the shredder at Campbell Industrial Park. The areas where the crusher had been operated showed oil stained soil. New soil had been pushed around apparently to cover contaminated soil in several areas. Vegetation was distressed. The area of ongoing operation had fresh stains on the soil. Gas tanks were ripped open for draining.

Batteries were still in several of the junked cars as well as lying about on the ground and smashed with contents on and in the soil - see video tape.

Recommendations:

The H&ER office has not found an imminent and substantial endangerment at the site. The H&ER office recommends that the Solid Waste program investigate the site, primarily the oil contaminated disposal areas.

James
Wright's
←

Sand Isle Waste Treatment Plant

11/20/91

3:25 pm - on-site

- 1) Scott Schultz - Engineer
 - 2) Charles McAngus - Shift Supervisor
- mercury switches
 - transformer present
 - oil and gas contamination
 - Melvin Lee - Building Dept.
 - Crusher moved 3 times
 - Soil from the Alapai Police Station found on-site

4/20/92

Clarence Surigao (527-6801)

- 1) Waste oil storage
- 2) Tanks with holes from the use of a pick
- 3) Transformer with #16920 painted on Westinghouse
Style A-2912 N 50 C 4 B
60S A 307
120/240 Volt

Late 1988 - 1989: start of Towco
approximately 25 acres

Old bus barn soil, not contaminated

Flynn-Learner - operator?
Jim Banigan (682-5810)

Towco - hauls vehicles, abandoned vehicles
dismantling operation, sells off any useful items
vehicles go to Flynn-Learner for shredding

5/6/92

Clarence Surigao - Sand Island

Transformer was picked up by Hawaiian Electric (no PCBs)
The transformer is owned by Hawaiian Electric Co.

5/6/92

Donn Fukuda

The transformer is one of Hawaiian Electric's. Mike Troy went out on Monday 5/4/92 to verify the transformer no. and serial no. The network system informed Donn that the transformer is supposedly still on line in Kaneohe.

It was picked up by an overhead crew on 5/6/92 and is now located on a staging area.

Donn recalls that Sand Island was used as a staging area for underground cables.

He is still investigating.

HECO will be taking the lid off for sampling and sending a sample off to the lab.

A copy of the report will be sent to HEER.

Leakage was verified by Mike, but none was found on the pallet.

It is unknown at this time if it contains PCBs.

5/12/92

Donn Fukuda

The test results indicate the PCB content to be less than 1 ppm. HECO will still investigate how the transformer got to Sand Island. It is probably the result of a hauler illegally disposing of it. A copy of the report will be sent to the HEER Office.

5/26/92

Clarence Surigao

16-1 Sand Island Road
Honolulu, Hawaii 96819

A copy of HECO's letter was sent to Clarence

6/19/92

Clarence Surigao

Russell Miyaki, Director of the Dept. of Finance (C & C)
(523-4616)

Flynn-Learner

Jim Banigan (contact) (682-5810)
City and County of Honolulu, Dept. of Finance
Abandoned Vehicle Section (733-2530)

Site Reconnaissance made by Bryce Hataoka on April 30, 1992

Rainfall Frequency Study for Oahu, Report R-73, Hawaii State Department of Land and Natural Resources, Division of Water and Land Development. Prepared by the University of Hawaii, Water Resources Center, 1984.

The 2-year, 24-hour rainfall is 4 inches.

DLNR - Fish Catch for 1990

Inshore (400) - 10,753 pounds
Offshore (420) - 74,413 pounds

Solid Waste Office Files

Hawaii Metal Recycling
Derelict Vehicle Storage Yard

A certified letter to Mr. William G. Mahas
President, Tow Master, Limited
2831 Kaihikapu Street

- letter dated October 11, 1990.
- follow up of a complaint inspection on October 8, 1990.
- improper disposal of waste oil, lead acid batteries
- requesting a response on corrective measures and a time schedule of work

Solid Waste Management Permit Application Form

- application form sent to Mr. Jim Banigan, Manager
Hawaii Metal Recycling Co.
91-056 Hanua Street
- permit to operate a Derelict Vehicle Storage Yard
- no response from the company as of June 21, 1992

Hawaii Metal Recycling Co.

owned by: Flynn-Learner and TR 40 (consists of 2 Texas
Companies)

Towco

owned by: Drive Line Components and Tow Masters

Drive Line Components
2831 Kaihikapu Street
(839-9771)
(William G. Mahas)

Flynn-Learner
(682-5810)
(Jim Banigan)

Tow Master, Limited
16-3 Sand Island Parkway Road
(832-1300)

- Tow Masters Hawaii
1750 Kalakaua Avenue, Suite 112
(947-2110)

TOWCO PA

- 6/12 - Start
- 6/15 - Information from Liz and Mike; Photos and Video
- 6/25 - Site Reconnaissance with Mike Cripps
- EZ Crusher trailer on-site
- 6/26 - Site Sampling
- Mike Cripps
- Bill Perry
- Liz Galvez
- Gary Siu
- Scott Cunningham
- Bryce Hataoka
- 7/10 - Liz called Dean Uchida (DLNR)
- 7/13 - CERCLIS entry letter
- 7/21 - Mike Kaneshige - C & C Honolulu, Dept of Finance
- Tow Masters sells the cars to Hawaii Metal Recycling Co.
- HMR has a backlog which resulted at the site.
- The crusher was removed
- informed Mike K. that the trailerable EZ Crusher is still on-site and could be used by the company.



HAWAII METAL RECYCLING CO.

91-058 HANUA STREET • CAMPBELL INDUSTRIAL PARK • EWA BEACH, HAWAII 96707 • PH: (808) 662-5510 • FAX (808) 688-0604

May 19, 1992

Mr. John Harder
Coordinator
Office of Solid Waste Management
State of Hawaii
Department of Health
Environmental Management Division
Five Waterfront Plaza, Suite 250
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Mr. Harder:

We are responding to your letter dated March 24, 1992, in an effort to clear up any questions the Department may have regarding Hawaii Metal Recycling Company's involvement in the temporary storage of abandoned vehicles on a parcel of land next to the Sand Island Sewage Treatment Plant.

In May of 1989 the City and County of Honolulu entered into a contract with Towco Enterprise for loading, hauling and disposing services for the City's Derelict Vehicle Program (Contract No. C 32527, Proposal No. 6407).

Since the State Department of Health had shut down the operations of the only automobile shredder then in existence on the island of Oahu (known as Honolulu Recycling Company), derelict vehicles abandoned on the streets of Oahu very quickly became a public hazard, as well as a visual blight on the community.

Towco Enterprise was in immediate need of storage space for approximately 180 vehicles, in addition to space for approximately 1,000 vehicles which the City projected would accumulate monthly. The City of Honolulu agreed to assist Towco Enterprise by leasing to Towco Enterprises a parcel of property for the storage of vehicles until a new shredder, being constructed by Hawaii Metal Recycling ("HMR") at Campbell Industrial Park, was in full operation. It is our understanding that under the terms of the agreement between the City and Towco Enterprises, the responsibility for closing the Sand Island site and removing all parts, vehicles and rubbish rests with Towco Enterprises.

Construction projections called for the shredder to be on line by December 1989. However, a labor dispute at the manufacturer's plant and permit problems delayed the start up of the recycling plant until May 1991.

Since that time, HMR's recycling facility has been in full scale production. HMR has already removed approximately 23,000 gross tons of vehicles and derelict vehicles are removed daily from the Sand Island site. It is expected that the balance will be removed by the end of August 1992.

As indicated above, the Sand Island property is one where material intended for recycling has been temporarily stored and its use for that purpose will soon end. Under such circumstances, we question whether it is a solid waste disposal facility and whether a Solid Waste Management Permit is required. However, if it is, we respectfully submit that Towco Enterprises, as the operator and contract party with the City, is the entity that should apply for the permit.

Since the City has leased the property to Towco Enterprises, and Towco is responsible for the condition of the property, we believe Towco is the operator of the facility for purposes of Chapter 58 Title 11, Administrative Rules for Solid Waste Management Control. Hawaii Metal Recycling Company should be exempt from the filing requirements, and, therefore we respectfully request an exemption.

We appreciate your having contacted us in connection with this matter.

Very truly yours,

James G. Banigan
General Manager

JCB:bms

cc: W. Mahas - Towco Enterprise
G. Nonaka - Deputy Director Department of Finance
City and County of Honolulu
J. Paul - Paul, Johnson, Park & Niles
K. Smalberg - Hugo Neu & Sons, Inc.



BREWER
ENVIRONMENTAL
INDUSTRIES, INC.
a C. BREWER company

LABORATORY ANALYSIS REPORT
Environmental Laboratories Division

CLIENT: DEPT. OF HEALTH
5 WATERFRONT PLAZA
500 ALA MOANA BLVD
HONOLULU, HAWAII 96813

ATTN: MIKE CRIPPS

JOB NUMBER: 7692

DATE: JULY 13, 1992

SAMPLE LOCATION: TOWEO-SANE ISLAND

Date/Time Sampled: 06/26/92 @ 1015
Date/Time Received: 06/30/92 @ 0800

Matrix: SOIL
METHOD #: 7420/7421

SAMPLE ID#	TOTAL LEAD RESULT mg/kg	DETECTION LIMIT mg/kg	ANALYSIS DATE
#1	581	0.5	07/06/92
#2	17.5	0.5	07/06/92
#3	21.4	0.5	07/06/92
#4	10.7	0.5	07/06/92



Bivins Environmental Laboratories
 P.O. Box 552
 Providence, RI 02973
 (603) 964-5522 FAX: (603) 964-5309
 Toll Free (800) 528-5477

CHAIN OF CUSTODY & ANALYSIS REQUEST

Project Name: _____
 Job#: _____
 Lab Job#: **7678**

Page **1** of **1**

Name and address where sample and analysis are to be sent:
 Firm: **Dept Health Heer office**
 Address: **Sad Alamoar Blvd #250C Weymouth**
 City: **Haver** State: **RI** Zip: **02883**
 Phone#: **586 4651** FAX#: _____
 Contact Person: **MIKE CRIPPS**

Firm: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Phone#: _____ FAX#: _____
 Contact Person: _____

Comments: **TOTAL LEAD (P6)**
digestion & AA

*Matrix
 S-Soil
 W-Water
 O-Oil
 SLD-Sludge

Sampled By: **MIKE CRIPPS**
 Witnessed By: _____
 Samples received, chilled?
 Yes No
 Samples in good condition?
 Yes No
 Total # of Containers: **4**
 Samples received at lab with custody seals intact?
 Yes No

Sample Location ID	Date	Sample Time	Matrix	Sp. Cont.	Size
1	6/26/92	1015A	PA	1	250g
2	"	"	"	1	"
3	"	"	"	1	"
4	"	"	"	1	"

Analysis Requested	24 hr	48 hr	3-5d
UST Pkg.			
TRPH 418.1			
Heavy Metals Pkg.			
Total Coliform MF or MPN			
Used Oil Pkg.			
HORA			
Total Pb			

RUSH

Requested By: **MIKE CRIPPS** Date: **6/26/92**
 Signature: _____ Time: **13:13**
 Received By: **Michael Cripps** Date: **6/26/92**
 Signature: _____ Time: **13:13**
 Received By: **Christina Corde** Date: **6/26/92**
 Signature: _____ Time: **13:13**
 Received By: **Christine Corde** Date: **6/26/92**
 Signature: _____ Time: **13:13**

Requested By: **Keith Kinnick** Date: **6/26/92**
 Signature: _____ Time: **3:15**
 Received By: **Keith Kinnick** Date: **6/26/92**
 Signature: _____ Time: **3:15**
 Received By: **S. Caballe** Date: **6/26/92**
 Signature: _____ Time: **6:00**

Requested By: _____ Date: _____
 Signature: _____ Time: _____
 Received By: _____ Date: _____
 Signature: _____ Time: _____
 Received By: _____ Date: _____
 Signature: _____ Time: _____

RECORD OF COMMUNICATION

DATE: May 26, 1992
SUBJECT: TowCo - Abandoned Transformer
Sand Island Wastewater Treatment Facility

On April 30, 1992, Mike Cripps and Liz Galvez, met with Clarence Surigao at the Sand Island Wastewater Treatment Facility, regarding potential hazardous substances located at the Sand Island site which is currently being used by TowCo, an automobile hauler hired by the City and County of Honolulu. A walk-through of the site showed stacked cars, empty gasoline tanks that have been punctured with a pick or similar device, and numerous scattered automobile batteries throughout the site. An abandoned Westinghouse transformer #16920 (Style 60SA307) was found; leakage at the top of the transformer was observed, but none on pallet. Pictures and video were taken during the walk-through.

A determination has been made by L. Galvez that a Preliminary Assessment (PA) is necessary. A CERCLIS entry letter to EPA to request to do a PA will be sent to EPA.

On May 6, 1992, Clarence Surigao, telephoned to inform DOH that the transformer was picked up by Hawaiian Electric Company (HECO). A telecon with Donn Fukuda (HECO) confirmed that the transformer was picked up by HECO crew on May 6, 1992. Mike Choy of HECO had gone to Sand Island on May 4, 1992, to verify transformer number provided by Liz Galvez to HECO; HECO's records indicate that the transformer is supposedly still on line and should still be in use at Kaneohe. HECO will continue to investigate how the transformer could have been located at Sand Island.

Transformer was analyzed for PCB. Donn Fukuda telephoned on May 12, 1992, and said that test results indicate that the mineral oil contents of the transformer were non-detect for PCBs at the 1.0 ppm detection level. A request for a copy of the results to be sent to the HEER Office was made. On May 20, 1992, copy of the test results was received from HECO.

On May 26, 1992, L. Galvez telephoned Clarence Surigao to inform him that test results for the abandoned transformer were received by the HEER Office. A copy of the results sent by HECO will be sent to him to the following address:

Sand Island Wastewater Treatment Facility
16-1 Sand Island Road
Honolulu, Hawaii 96819

Liz Galvez

5/20/92



May 18, 1992

William A. Bonnet
Manager
Environmental Department

Ms. Liz Galvez
State Department of Health
Hazard Evaluation and Emergency Response Branch
Five Waterfront Plaza, Suite 250
500 Ala Moana Boulevard
Honolulu, HI 96813

Dear Ms. Galvez:

Subject: Analytical Results for HECO Transformer #16920

This is to confirm your discussions with Donn Fukuda of this Department that the subject Westinghouse transformer (Serial No. 60SA307), found abandoned at the Sand Island Wastewater Treatment Facility on May 4, 1992, does belong to Hawaiian Electric Company (HECO). The transformer was removed from the Sand Island site on May 6, 1992 and returned to HECO's Ward Avenue Complex for testing and disposal. Enclosed per your request, is a copy of the laboratory analytical report which shows the mineral oil contents of the transformer to be non-detectable for PCBs at the 1.0 detection level.

Although there was a slight leak on the top of the transformer, we understand that no fluids were released to the ground and cleanup of the site is not necessary. We are still investigating how the transformer came to be located at the site and will provide you with a report as soon as possible.

If you have any questions regarding this matter, please call Donn Fukuda at 543-5674.

Sincerely,

Enclosure

REC'D JUN 22 1992

3-3 PCB



William A. Bonnet
Manager
Environmental Department

June 18, 1992

Ms. Liz Galvez
State Department of Health
Hazard Evaluation and Emergency Response Branch
Five Waterfront Plaza, Suite 250
500 Ala Moana Boulevard
Honolulu, HI 96813

Dear Ms. Galvez:

Subject: Abandoned Transformer Found at the Sand Island Wastewater Treatment Facility

This is a follow-up to our previous correspondence of May 18, 1992 involving the Westinghouse transformer (I.D. #16920, Serial No. 60SA307) found abandoned at the Sand Island Wastewater Treatment Facility on May 4, 1992. Per your recent discussion with Donn Fukuda, further investigations regarding the transformer's abandonment and ownership determined that Hawaiian Electric Company (HECO) does not own the transformer as previously indicated. Apparently, the transformer was sold to the City & County (C&C) Board of Water Supply in 1974. At the time it was sold, the transformer was located on pole 1/9/18 on Kulauli St. in Kaneohe. The transformer was serving the C&C Kaneohe Effluent Pump Station. It is possible that the transformer was removed to the C&C property at the Sand Island Wastewater Treatment Facility by C&C personnel, without HECO knowledge. The three transformers currently on the pole at Kulauli St. have also been identified as privately owned transformers, and do not belong to HECO.

It appears that HECO personnel responsible for updating records were not informed of the sale of this transformer, and as such, ownership records were never updated. This led to the initial belief that the transformer was owned by HECO. Record keeping slips of this nature are considered rare. All HECO departments involved with transformer transactions have been reminded of appropriate record keeping requirements.

The fact that this transformer is customer owned and was not removed to Sand Island by HECO crews is consistent with HECO's strict transformer handling and disposal procedures. Based on the above discussion, we would appreciate it if you could modify your incident report accordingly.

Complaint Form
State of Hawaii: Department of Health
Hazardous Waste Program
AMELCO Building, 2nd Floor
645 Halekauwila Street
Honolulu, Hawaii 96813.

Date 3/5/92 Initiator Philip Dengler Telephone 833-9892 523-4164 (after 3pm)

Initiator's Address _____

Complaint Observed toxics and crushed lead acid
batteries on the ground at the auto junk yard
(Honolulu) at Sand Island next to sewage treatment
Site of Complaint (include address) plant.

How much waste/material is the subject of the complaint? unknown

How is the waste/material packaged? on the ground

Is the waste/material package labelled? —

Check off all applicable to site:

Originator of waste/material Junk yard

Household _____

Industrial

Has this waste/material been seen at site

Roadway _____

before? If so, when? unknown

Government _____

Can the initiator identify substances? _____

Private _____

Is the waste/material recyclable? _____

Public Access Area _____

Has the information obtained above been verified? If so, indicate date and how _____

Do you believe further action is warranted? If so, indicate what measures: _____

Under what legal authority is the action based? _____

Receiver's signature & title _____ Date _____

Please attach a copy of this form to the inspection report

Firm: HAWAII METAL RECYCLING JUNKYARD Telephone: 682-5810 Complaint No.: 92-037

Address: SAND ISLAND Person Contacted: LAWRENCE KAZUKANE

Date of Inspection: 3-11-92 Time: 10:00 Inspected By: KUSSEN PANK

Findings: VISITED PREMISES AT THE HAWAII METAL RECYCLING JUNKYARD. NO VISIBLE RESIDUE OR ASH FROM RECENT FIRE. AREA WAS BEING CLEANED AND CARS WERE PILED NEATLY. HEAVY EQUIPMENT OPERATOR WAS ACTIVELY CLEANING THE FACILITY.

3-11-92 2:00 PM SPOKE WITH COMPLAINTANT TO GET MORE INFORMATION ON HIS CONCERNS.

Action Taken: 3-11-92 3:00 PM SPOKE WITH LAWRENCE KAZUKANE OF HAWAII METAL RECYCLING. HE SAID THERE ARE APPROXIMATELY 1800 ABANDONED CARS AND THEY ARE SCHEDULED FOR REMOVAL. THE TARGET DATE FOR REMOVAL OF CARS IS AUGUST 31ST, 1992.

Administrative Rules: Chapter _____ Section _____ Follow-up Needed: Yes No

Investigation Requested By: _____ Tel. Bus.: _____
Address: _____ Res.: _____

Complaint Received By: _____ Date: _____ Time: _____

Additional Information: _____

FILE No: 135A

HAWAII STATE DEPARTMENT OF HEALTH
SOLID AND HAZARDOUS WASTE BRANCH
FIVE WATER FRONT PLAZA, SUITE 250
500 ALA MOANA BOULEVARD
HONOLULU, HAWAII 96813

INSPECTION REPORT

FIRM NAME: Towmasters, Ltd Date: Oct 23, 1990
MAILING ADDRESS: 2831 Kaihikapu Street
SOURCE ADDRESS: 16-1 Sand Island Access Road
TELEPHONE: 833-2885
PERSON CONTACTED: Facility Operators TITLE:
REASON FOR INSPECTION:

ROUTINE () COMPLIANCE SCHEDULE ()
PERMIT REQUIREMENT () VARIANCE CONDITION ()
OTHER (X) EXPLAIN: Follow-up

OBSERVATION: On Oct 23, 1990, a followed-up inspection was conducted at Towco by Jose Ruiz, Department Inspector. The inspection revealed that the auto compactor has been removed temporarily from the site. Personnel continues to compact the vehicles with a forklift until the auto compactor is renovated. Conducted a walk-thru inspection of the site and no batteries were noticed on the ground. Did notice some used oil on the ground. The area where the auto compactor was recently located appears to be covered with new soil. A further investigation will be conducted to determine if the soil was removed.

VIOLATION(S): () REGULATIONS: CHAPTER ____ SECTION ____ () PERMIT REQ.
() COMPLIANCE SCHEDULE () VARIANCE CONDITION
() OTHER:

CAUSE OF VIOLATION: Improper clean-up of contaminated area.

RECOMMENDATION: 1. Properly remove and disposed of contaminated soil from the existing compactor area.
~~2. Analyze soil for hazardous waste prior to disposal.~~

REFERRED TO:
REASON:

DATE:

FOLLOW-UP NEEDED: YES (X) WHEN:

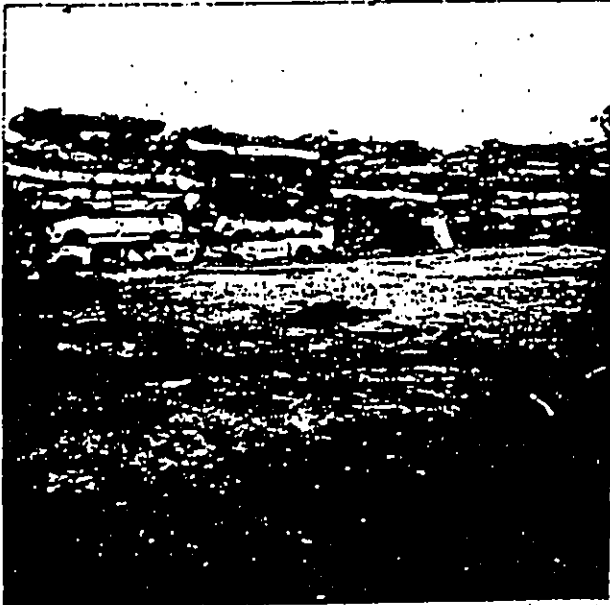
J Ruiz

FACILITY TOWMASTERS, (TOWCO)

LOCATION SAND ISLAND ACCESS RD.

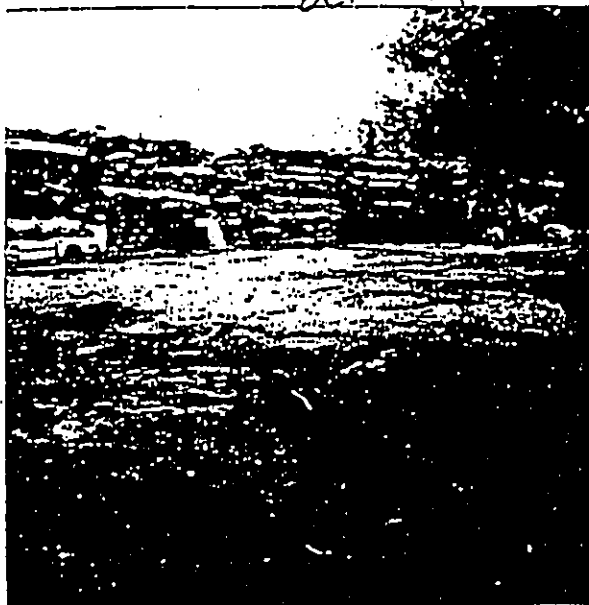
PHOTO TAKEN BY J. Hui's DATE OCT 23, 1990

OCT 23, 1990



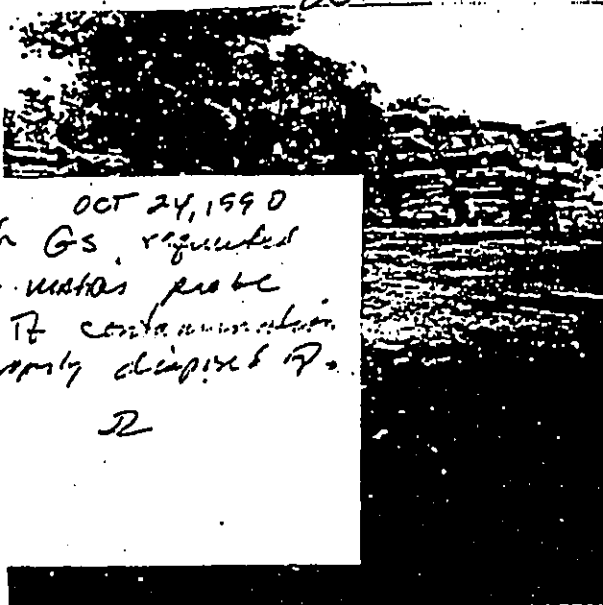
TOWCO
SAND ISLAND
Previous location of Auto computer

OCT 23, 1990



TOWCO SAND ISLAND
Previous location of Auto computer

OCT 23, 1990



OCT 24, 1990
Spoke with GS, requested
to have Mr. Waters probe
the site for contamination
exist, to properly dispose of.

D

TOWCO, SAND ISLAND
Previous location of Auto computer

OK 10/9/90

COMPLAINT No: 135

HAWAII STATE DEPARTMENT OF HEALTH
SOLID AND HAZARDOUS WASTE BRANCH
FIVE WATER FRONT PLAZA, SUITE 250
500 ALA MOANA BOULEVARD
HONOLULU, HAWAII 96813

INSPECTION REPORT

FIRM NAME: Towmasters, Ltd DATE: [redacted]
MAILING ADDRESS: 2831 Kaihikapu Street
SOURCE ADDRESS: 16-1 Sand Island Access Road
TELEPHONE: 833-2885
PERSON CONTACTED: Fac. Operators, and Mr. Mahas TITLE: President

REASON FOR INSPECTION:
ROUTINE: () COMPLIANCE SCHEDULE: ()
PERMIT REQUIREMENT: () VARIANCE CONDITION: ()
OTHER (X) EXPLAIN: Formal complaint

OBSERVATION: On Oct 8, 1990 at 9:30 A.M. an inspection of the facility (Towco) was conducted by Jose Ruiz, Department Inspector. Site observations made by Mr. Ruiz, revealed [redacted] and [redacted]

The ground around the compactor area is contaminated with used motor oil and other fluids from the compaction operation. The compactor area has a [redacted] for the collection of residual fluids and the fluid is pumped out once per week by P&S Pacific Recycling Co. The vehicle storage area adjacent to the compactor was noticed with some used oil contamination and a few discarded lead acid batteries.

The process area where vehicles are compacted by the forklift was noticed with batteries improperly discarded on the ground. Mr. Peiseira, facility operator, was questioned on the improperly discarded batteries and he claimed that batteries are placed on pallets and recycled at Oahu Metal Supply. During the inspection Mr. Pereira was observed placing the discarded batteries from the ground on a pallet.

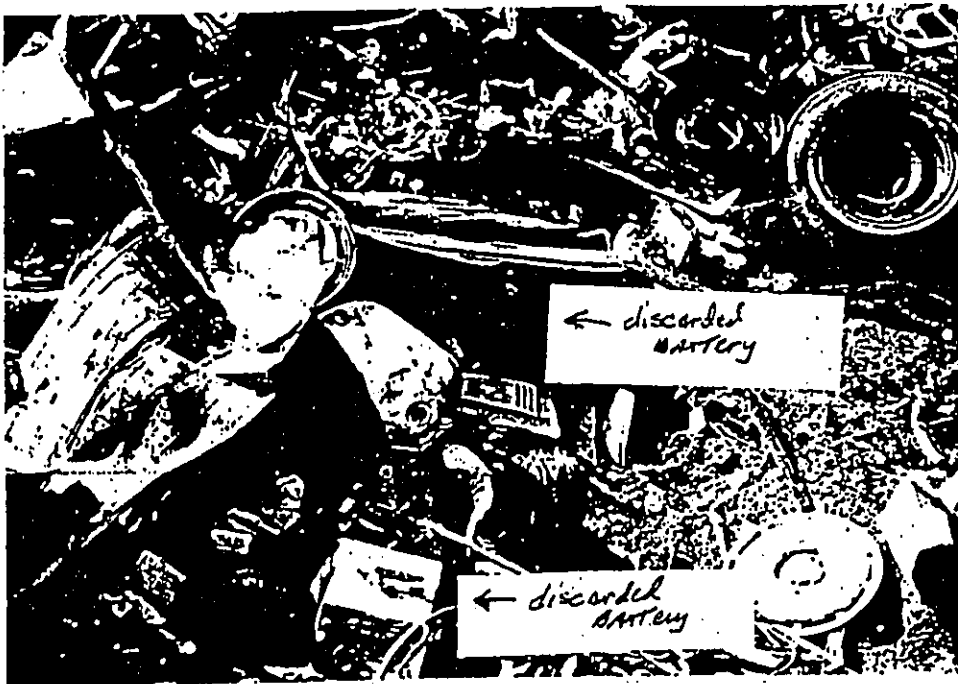
VIOLATION(S): (X) REGULATIONS: CHAPTER 342N SECTION 30(c)
() COMPLIANCE SCHEDULE () VARIANCE CONDITION
() OTHER: 342I, Section 1

CAUSE OF VIOLATION: Used oil ground contamination and improper disposal of lead acid batteries.

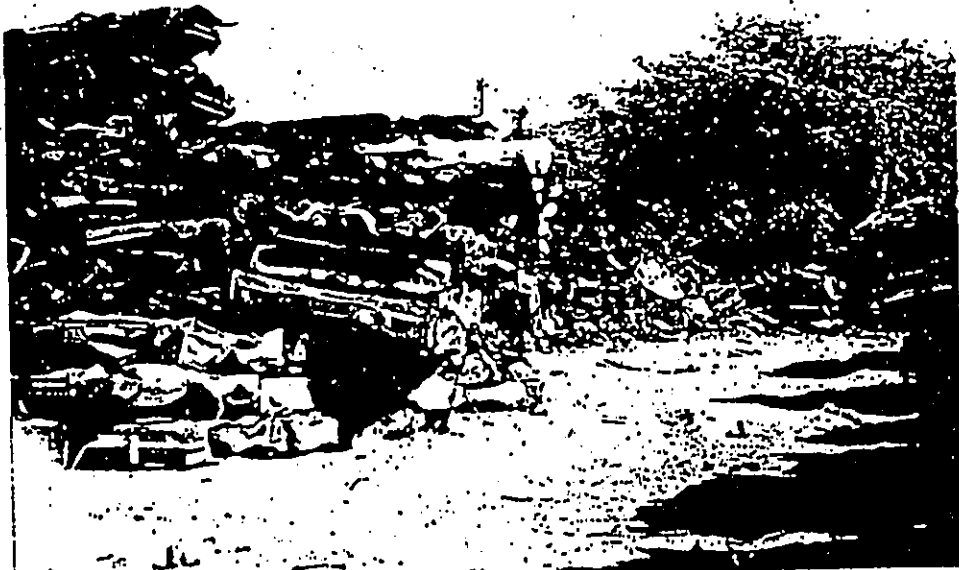
RECOMMENDATION: 1. Modify the Compactor used oil/fluid tank to provide adequate collection of fluids.
2. Properly remove and disposed of contaminated soil around the compactor area.
3. Properly remove, palletize, and recycle lead acid batteries.

J. Ruiz
10/10/90

FACILITY Towmasters, LTD (TOWCO)
LOCATION 16-1 SAND Island Access Rd
PHOTO TAKEN BY J. Ruiz DATE Oct 9, 1990



BATTERIES improperly disposed of & mixed within
a pile of Rubbish & metal

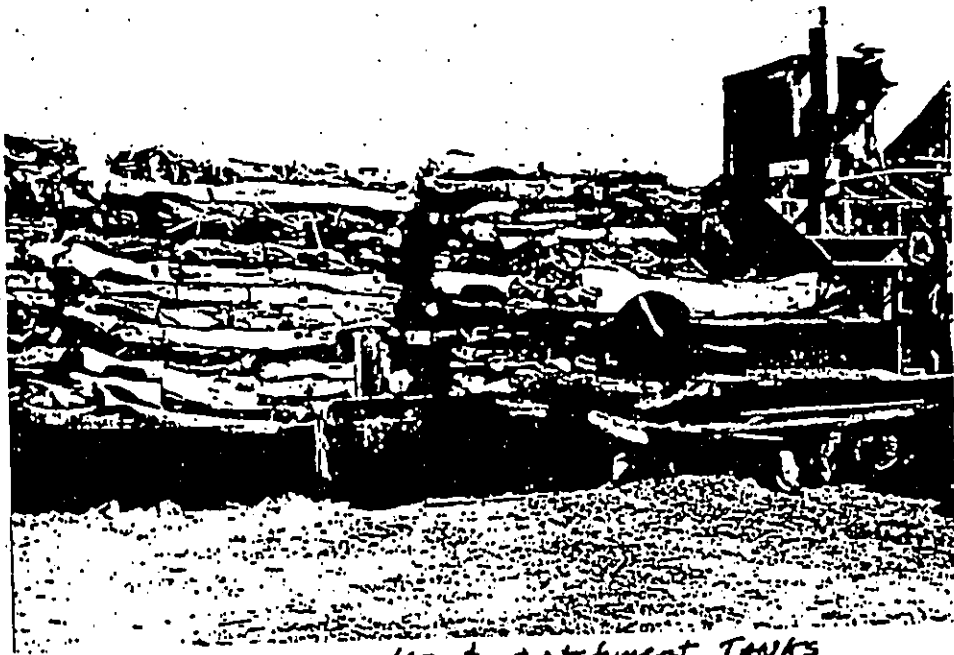


Storage side of previous fire

FACILITY TOWMASTERS LTD (TOWCO)
LOCATION 14-1 SAND ISLAND ACCESS RD.
2831 KATHIKAPA ST, SAND ISLAND
PHOTO TAKEN BY J. Ruiz DATE OCT 9, 1990



Vehicle compactor & used oil catchment TANK
Arrow points where the ~~used~~ oil is pumped out



Vehicle compactor & catchment TANKS

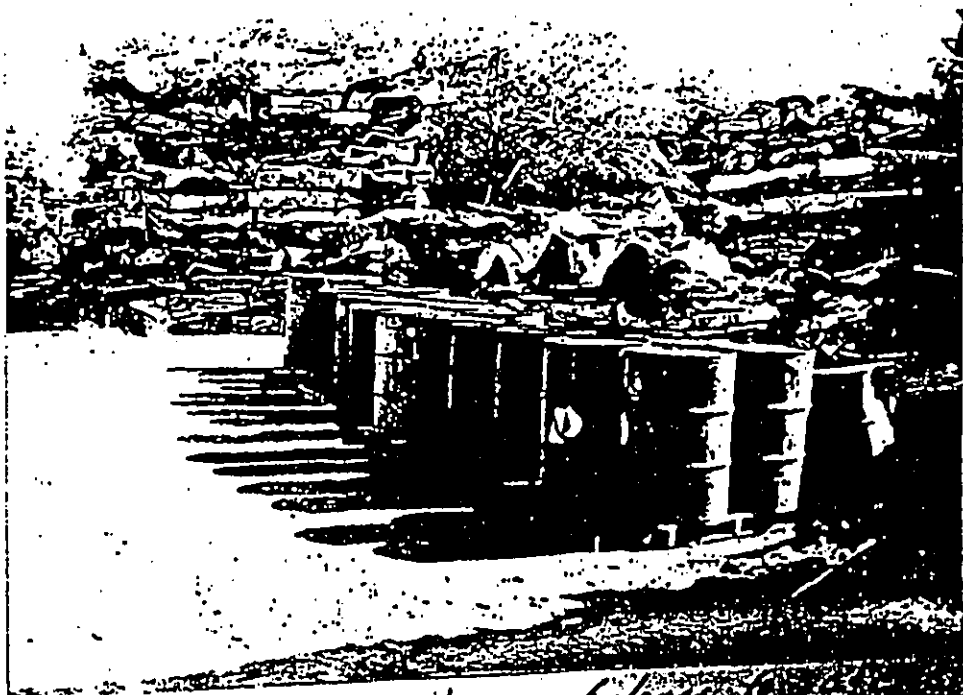
FACILITY TOWMASTERS LTD (TOWCO)

LOCATION 16-1 SAND Island HCCM RD

PHOTO TAKEN BY J. Ruiz DATE OCT 9, 1990



Area of previous Fire (compacted vehicles)



storage of oil drums belong to

a1

Firm: Towco Telephone: 8399771 Complaint No.: 90-039

Address: 61 Sand Island Access Road Person Contacted: Bill Mahan

Date of Inspection: 3/3/90 Time: _____ Inspected By: GS

Findings: UPW Rep John Wittek called for a treatment plant employee. There are puddles of used oil, L.A. batteries and asbestos from brake shoes on site. Wants an investigation by DOH.

To investigate as a second complaint from the same treatment plant worker. No report done as it was before complaint system.

3/14 Told John Wittek DOH checked to see that Towco is using work practices to minimize oil spills to ground and to dispose of L.A. batteries.

Action Taken: To send Towco application for a solid waste facility permit as operation is to processing and transfer facility. Permit to include closure plan one year before facility is closed.

Administrative Rules: Chapter 58 Section 3 Follow-up Needed: Yes No

Investigation Requested By: John Wittek, UPW Tel. Bus.: 8472631

Address: UPW Res.: _____

Complaint Received By: Gary Sit Date: 3/5/90 Time: _____

Additional Information: 3/13/90 Called by Steve Holms of Sierra Club. He works at OERC 548-1915. They got a call from SIP employees, Charles Dingle, Skip Spalding 5992436. Attorney with Sierra Club was asked by Dingle to arrange for newspaper coverage. Told them there are work practices at Towco operation to minimize pollution of environment. The operation is

part of C&C abandoned auto removal. **USED OIL**

Complaint No. 90-039

HAWAII STATE DEPARTMENT OF HEALTH
SOLID AND HAZARDOUS WASTE BRANCH
FIVE WATERFRONT PLAZA, SUITE 250
500 ALA MOANA BOULEVARD
HONOLULU, HAWAII 96813

INSPECTION REPORT

FIRM NAME: Towco DATE: 3/18/90

MAILING ADDRESS: 2831 Kalia Avenue Street

SOURCE ADDRESS: 16-1 Sand Island Access Road TELEPHONE: 839 9771

PERSON CONTACTED: Bill Mahus TITLE: President

REASON FOR INSPECTION:

Routine Permit Requirements Other () () () Compliance Schedule Variance Condition () () Explain: Complaint of H.O. spills.

OBSERVATIONS: There are no large used oil puddles. No spilled but they
acid were found. Notified Bill Mahus that steps must be
maintained to prevent such from happening. That would be time cycle
to let oil drop out of cars and proper handling and disposal of
used oil and L.A. batteries.
Gasoline is removed from cars and used by the tow trucks prior to
crushing.

VIOLATION(S): () REGULATION: CHAPTER _____ SECTION _____ () PERMIT REQUIREMENT
() COMPLIANCE SCHEDULE () VARIANCE CONDITION
() OTHER: none

CAUSE OF VIOLATION: _____

RECOMMENDATION: Spoke to Fashang T. Aca to, Assistant plant supervisor at
STP about complaint. He said they will tell employee about O&H visit.

REFERRED TO: _____ DATE: _____
REASON: _____

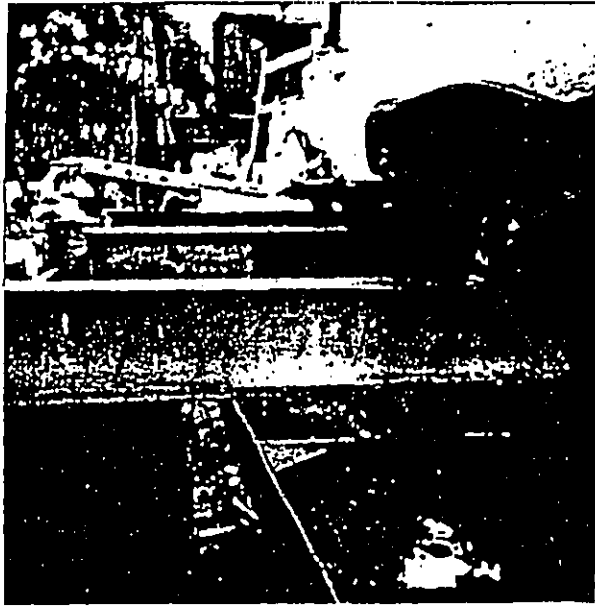
FOLLOW-UP NEEDED: YES (x) WHEN: Application for Solid Waste Permit.
NO () WHY: _____

Gary Sout
INSPECTOR

Facility TOWCO
Location at Sand Island STP rainy day
Photo Taken By GS Date 3/8/90



3/8/90 TOWCO
Car shredding



3/8/90 TOWCO
Car shredder bin



3/8/90 TOWCO
primary crusher bin



3/8/90 TOWCO
gasoline recovery

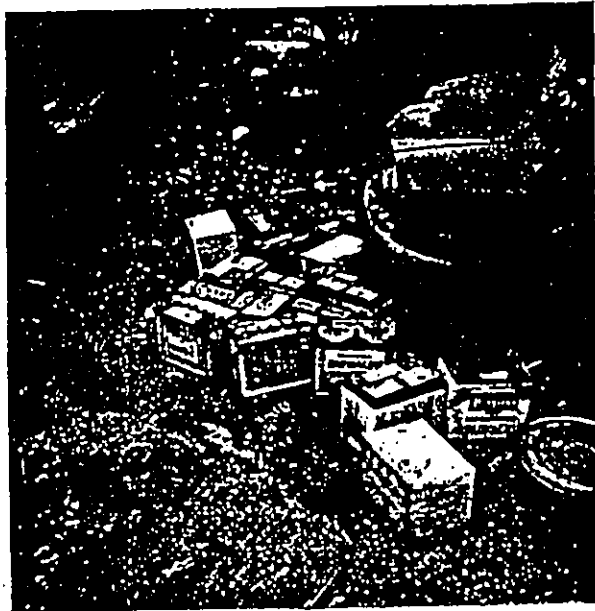
Facility TOWCO

Location Sand Island STP rainy day

Photo Taken By GR Date 3/8/90



3/8/90 TOWCO
no oil in pond



3/8/90 TOWCO
LiFi Battery Room



3/8/90 TOWCO



3/8/90 TOWCO
oil water mix

Facility TOWCO
Location Sand Island STP
Photo Taken By CK Date 3/8/90



3/8/90 TOWCO
Wider stack Area



3/8/90 TOWCO
Wheel Drums



3/8/90 TOWCO
Between stacks

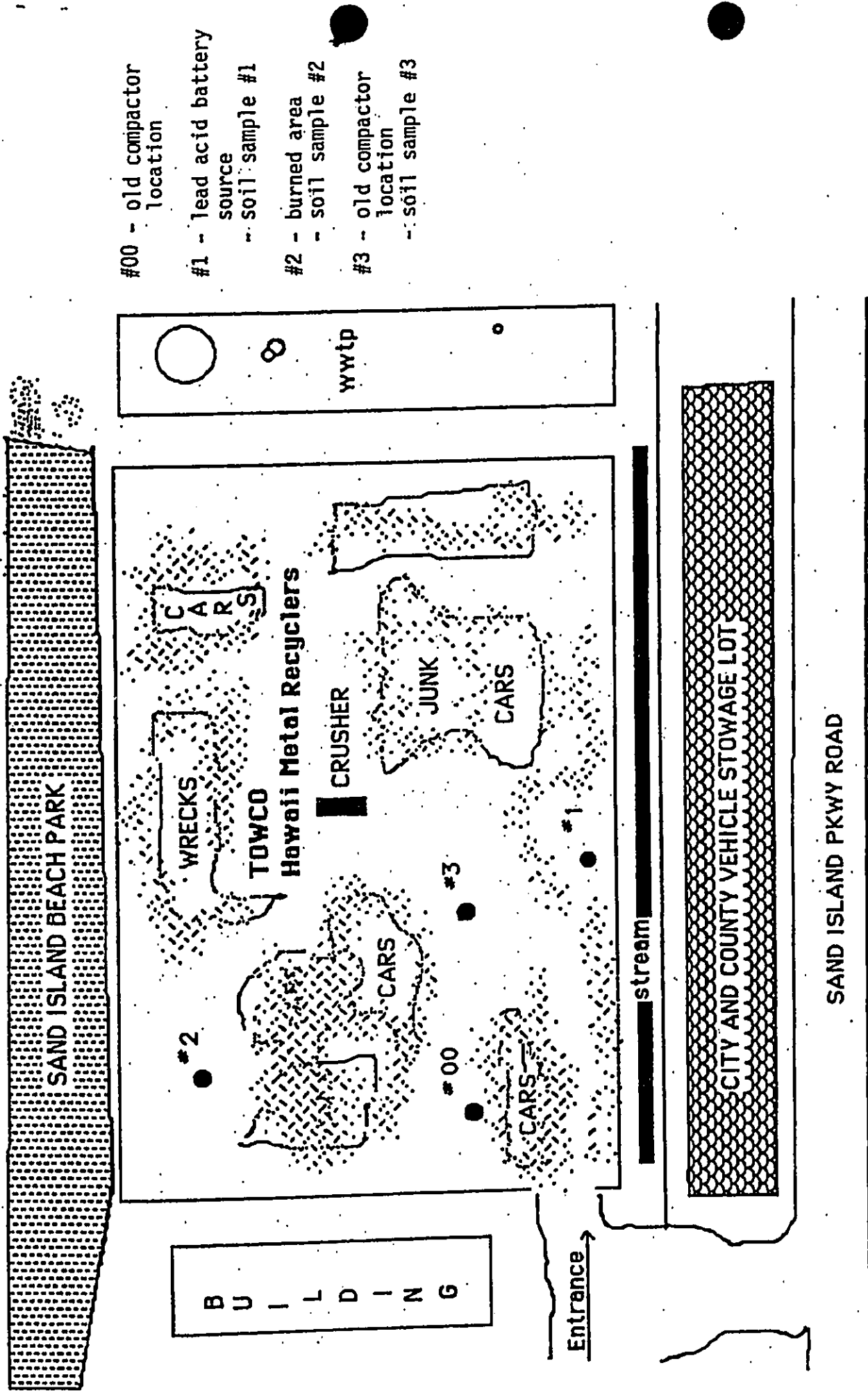


FIGURE 2, FACILITY MAP
(not to scale)

PRELIMINARY ASSESSMENT

SUBMITTED TO: Paul La Courreye, Site Assessment Manager,
EPA Region IX

PREPARED BY: Bryce Hataoka, Hawaii State Office of Hazard
Evaluation and Emergency Response (HEER)

THROUGH: Elizabeth Galvez, Team Leader, HEER
Dave Cook, PA/SI Coordinator, HEER
Steve S. Armann, Manager, HEER

DATE: August 1992

SITE: Towco, Honolulu, Hawaii

EPA ID#: HID 984468645

1.0 Introduction

The U.S. Environmental Protection Agency (EPA), Region IX, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA) has tasked the Hawaii State Department of Health (DOH) to conduct a Preliminary Assessment (PA) at the Towco site in Honolulu, Hawaii.

The purpose of the PA is to review existing information on the site and its environs to assess the threat(s), if any, posed to public health, welfare, or the environment and to determine if further investigation under CERCLA/SARA is warranted. The scope of the PA includes the review of information available from Federal, State, and local agencies, and performance of an on-site reconnaissance visit.

Using these sources of information, the site is then evaluated using EPA's Hazard Ranking System (HRS) criteria to assess the relative threat associated with actual or potential releases of hazardous substances at the site. The HRS has been adopted by the EPA to help set priorities for further evaluation and eventual remedial action at hazardous waste sites. The HRS is the primary method of determining a site's eligibility for placement on EPA's National Priorities List (NPL). The NPL

identifies sites at which EPA may conduct remedial response actions. This report summarizes the findings of these preliminary investigative activities.

Towco was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) in June of 1992, based on information that the site was used for the unpermitted storage of derelict vehicles, improper disposal of lead acid batteries and the contamination of the soil with waste oil.

1.1 Apparent Problem

Towco Enterprise has operated on the site since May 1989 and has never obtained a permit to operate as a derelict vehicle storage facility. No permit application has been submitted to the Hawaii, Department of Health (DOH) as of July 21, 1992 (Reference 1). The operators currently are not receiving new cars at the site, but are involved in removing the remaining inventory of vehicles by the City and County's August 1992 deadline. Towco Enterprise received cars through the City and County of Honolulu's Abandoned Vehicle Program (Reference 2). The abandoned vehicles were stripped of resaleable components and crushed by the compactor. On-site inspections conducted by the Office of Solid Waste have found lead acid batteries throughout

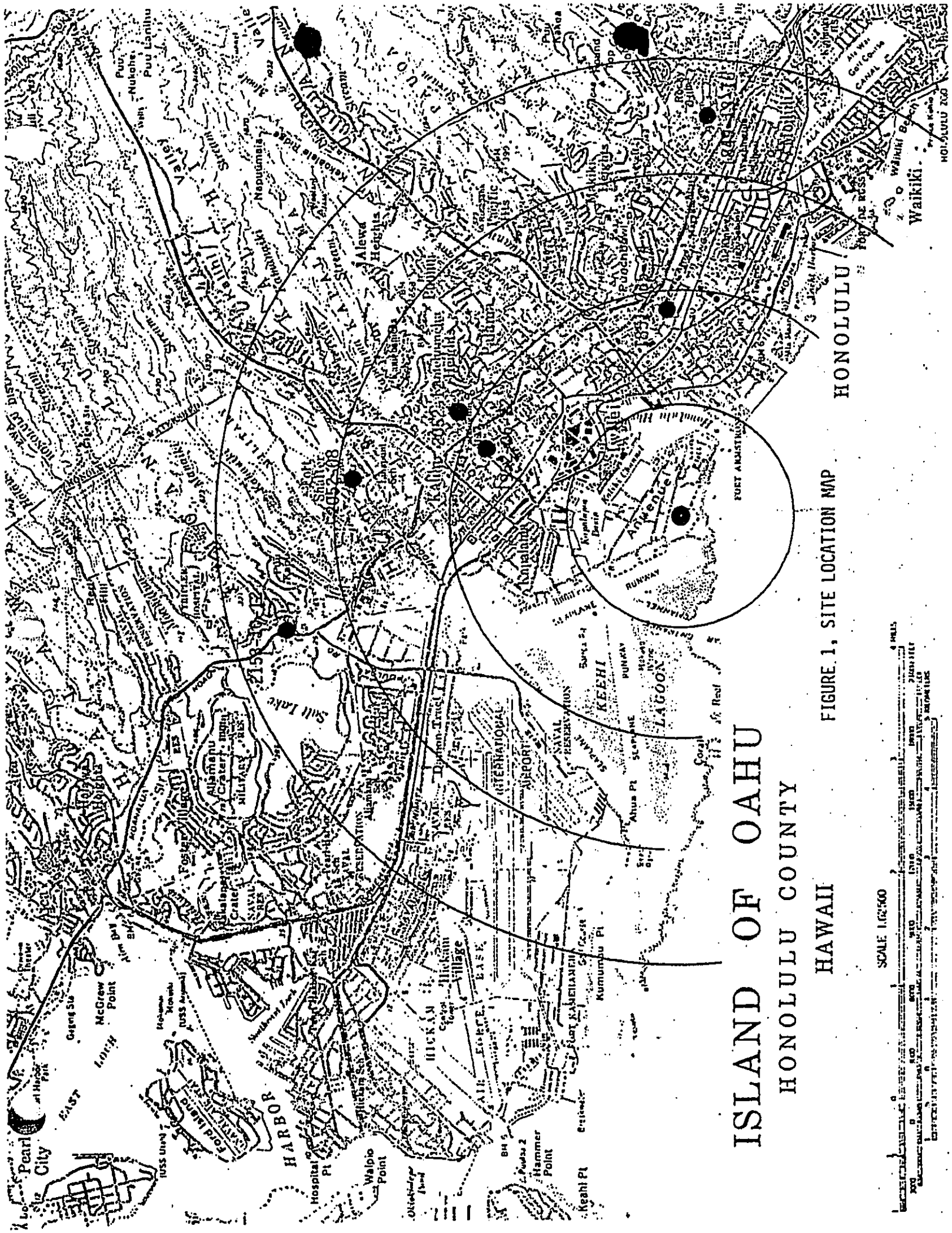
the site in various physical states (Reference 3,4,5,6). Those inspection reports have also indicated that the soil throughout the site and workplace area appear to be contaminated by used motor oil and other automotive fluids.

2.0 Site Description

2.1 Location

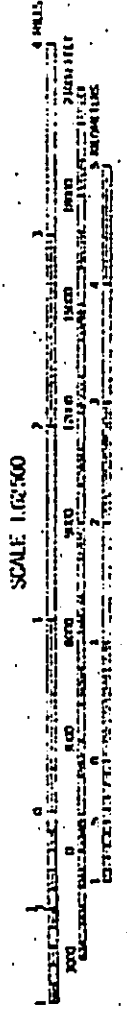
The site is located on Sand Island, which is on the southern coastline of Oahu (Figure 1, Site Location Map). Sand Island is located in Honolulu Harbor and is composed mainly of dredged material from Honolulu Harbor and Keehi Lagoon. In the late 1800's Sand Island consisted mainly of submerged reefs, mudflats and an irregular patch of ground a few feet above sea level. Since then the incremental deposition of material from adjacent dredging projects have resulted in the area having an elevation of about ten feet above the mean low water level (Reference 7 & 8).

The area is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, and moderate humidities. The northeasterly trade winds prevail throughout most of the year with the monthly mean velocity varying between 10 and 15 miles per hour (Reference 7 & 8). Rainfall in the area averages between 20 to 25 inches a year and the 2-year, 24-hour rainfall is 4 inches (Reference 9).



ISLAND OF OAHU
 HONOLULU COUNTY
 HAWAII

FIGURE 1, SITE LOCATION MAP



2.2 Site Layout

Towco Enterprise operates on approximately 20 acres of the 50 acres of land utilized for the City and County of Honolulu's Sand Island Wastewater Treatment Plant (Figure 2, Site Map). The land is owned by the State of Hawaii and managed by the Department of Land and Natural Resources. Adjacent to and west of the site is an area used by the City and County of Honolulu for the storage of old electrical equipment (switches containing elemental mercury and transformers), construction material, waste oil drums, and soil from an Underground Storage Tank (UST) facility which is reported to be uncontaminated. North of the site is an area used by Tow Masters for the storage of vehicles.

2.3 Operational History

In May of 1989, Towco Enterprise entered into a contract with the City and County of Honolulu for the disposal of the City's abandoned vehicles. The company currently leases space from the City at the Sand Island site for the storage of vehicles awaiting transport to Campbell Industrial Park (Reference 2).

Towco Enterprise had previously received the vehicles, removed the resaleable driveline components and crushed the vehicles. Fuel in the vehicle fuel tanks were first removed by raising the

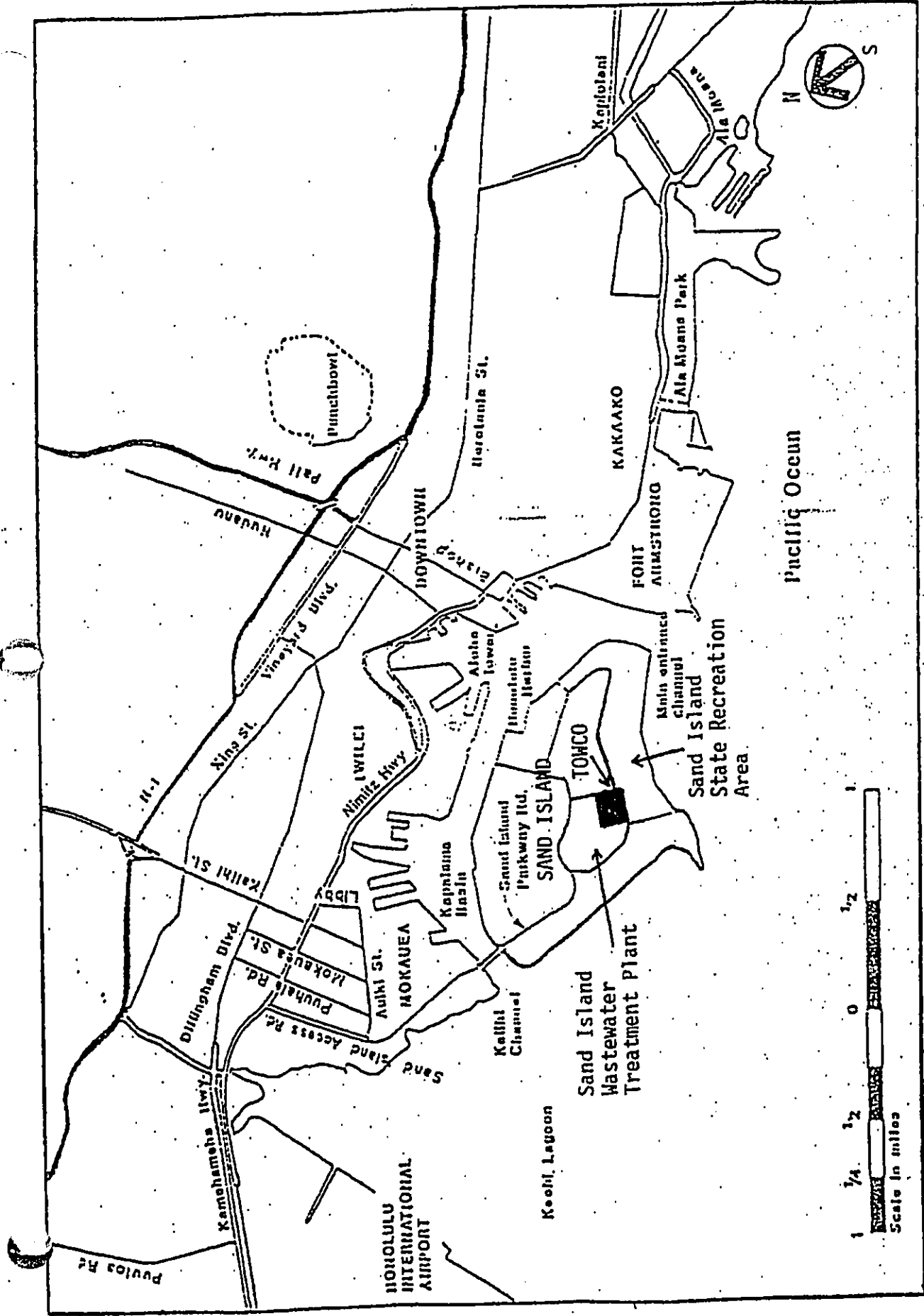


FIGURE 2, SITE MAP

vehicle with the fork lift and puncturing the tank with a pick ax. The fuel was then collected in 5 gallon buckets for use in the company's on-site vehicles. The vehicle compactor is reported to have had a 500 gallon holding tank beneath it for the collection of residual fluids (eg. motor oil, brake fluid, radiator coolant, transmission fluid, fuel and differential fluid). The vehicles were then crushed and stacked 5 to 6 high for eventual transport to Campbell Industrial Park for shredding at the Hawaii Metal Recycling Co. facility (Reference 3,4,5,6).

The compactor is reported to have been situated in various locations on the site during the years of operation. Reports of soil contamination by waste motor oil and other fluids at each of these locations have been made by complainants.

2.4 Regulatory Involvement

The site is used as a derelict vehicle storage yard for the City and County of Honolulu's Abandoned Vehicle Program. A summary of regulatory activities is given in Table 1.

Table 1

State Regulatory Involvement

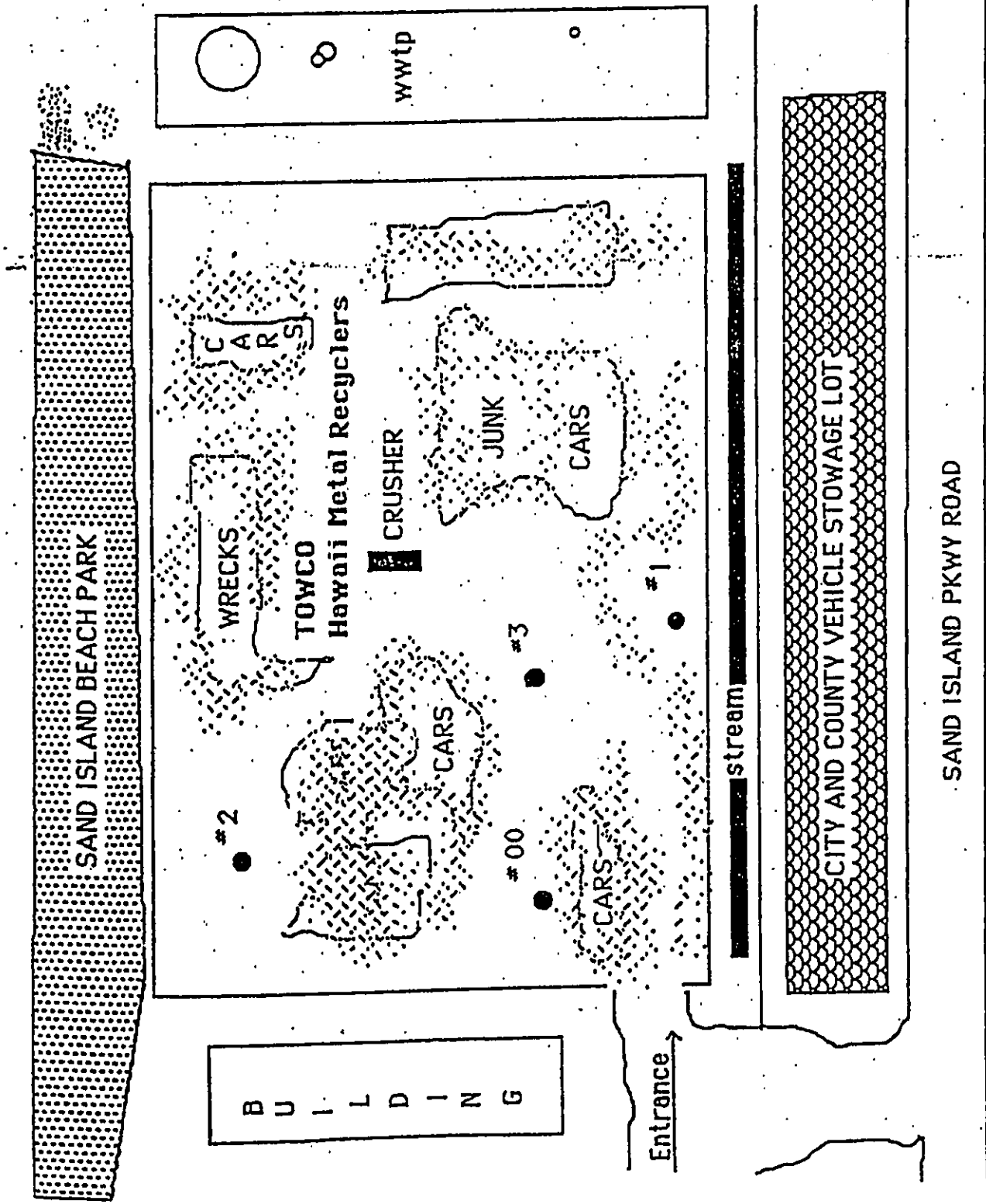
- 5/89 - Towco Enterprise enters into a contract with the City County of Honolulu for the Abandoned Vehicle Program.
- 10/2/90 - A complaint is filed with the DOH by a concerned citizen.
- 10/9/90 - DOH Solid and Hazardous Waste Branch (SHWB) conducts a Complaint Inspection. Observations of ground contamination by used motor oil and other fluids are made. The improper storage and disposal of lead acid batteries is also noted.
- 10/23/90 - A follow up DOH Inspection is conducted.
- 11/25/91 - DOH Hazard Evaluation and Emergency Response (HEER) Office conducts an inspection of the site after a fire burned through part of the site.
- 3/5/92 - DOH SHWB Complaint Inspection is conducted. Oil stained soil and smashed lead acid batteries are observed.
- 3/11/92 - DOH SHWB Complaint Inspection is conducted.
- 6/25/92 - DOH HEER Office conducts a site reconnaissance and notes that the EZ Crusher (on a trailer) is on-site.
- 6/26/92 - DOH conducts surface soil sampling on-site and analyzes for the presence of lead. The results of the analyses range from 17.5 ppm to 581 ppm for three on-site samples, and 10.7 ppm from an off site soil sample.

3.0 Hazard Ranking System Factors

3.1 Sources of Contamination

Two sources of potential hazardous substances were found during this investigation and site visit (Figure 3, Facility Map).

These sources are the lead acid batteries and the contaminated soil found throughout the site. The area of soil contamination is projected to encompass the entire site which has been estimated to be 20 acres.



- #00 - old compactor location
- #1 - lead acid battery source
- soil sample #1
- #2 - burned area
- soil sample #2
- #3 - old compactor location
- soil sample #3

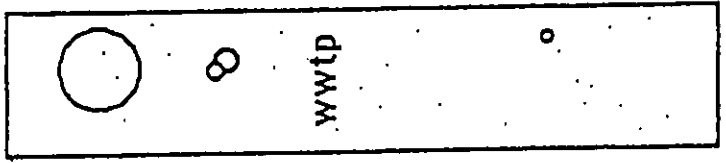


FIGURE 3, FACILITY MAP

Figure 3 also indicates the locations of the soil samples taken during the June 26, 1992 site sampling effort conducted by the Emergency Response Section of the Hazard Evaluation and Emergency Response (HEER) Office. The results of the analyses is given in Table 2.

Table 2
TOWCO, Soil Sampling

<u>Sample Number</u>	<u>Total Lead Result (mg/kg)</u>
#1	581
#2	17.5
#3	21.4
#4	10.7

Soil sample #1 was taken from the surface area of an area known to be contaminated by a leaking lead acid battery. Sample #2 was taken approximately 18 inches below the surface in an area which was previously burned during a fire on the site. Sample #3 was also taken approximately 18 inches below the surface from an area believed to have been a former compactor location where waste oils are suspected of draining. Sample #4 was taken on the surface at the adjacent Sand Island State Recreational Area and represents a background level of lead for the area.

3.2 Groundwater Pathway

3.2.1 Hydrogeologic Setting

Sand Island is located within the narrow coastal plain of Oahu's south central coast, geologically referred to as the Honolulu Plain. The Honolulu Plain along with the Ewa Plain stretches across the southern edge of Oahu. It is underlain by a broad elevated coral reef, covered by alluvium carried out from the mountains. The coral reef rocks were deposited during prehistoric time when the sea level was higher. The Honolulu Plain ranges in elevation from 0 to 10 feet (Reference 10).

The interface between the upper sedimentary layers and the underlying basalt constitutes a zone of low permeability known as the "caprock". This caprock extends along the coastline about 800 to 900 feet below sea level. The aquifer within the caprock is not used as a source of drinking water.

Prior to the dredging and filling of Honolulu Harbor, the original Sand Island area consisted of lands of a marginal nature, mainly submerged coral reefs, madflats, and islands of varying sizes, shapes and elevations. The surface and substrata soils of the site consist mostly of fill material from past dredging operations. The fill material is characterized by silty sand and coral gravel, which has high porosity and permeability.

3.2.2 Groundwater Targets

The basal aquifer beneath the site serves as the main source of drinking water for the island of Oahu. Table 2 lists the drinking water wells currently in use within a 4 mile radius of the site. The population figures are based on the average use of approximately 200 gallons per person per day, and estimated based on the well yields (Reference 11).

TABLE 1
AREA WELL LOGS

Well No.	Name	Yield (mgd)	Distance from Site (miles)	Pop.
1851-74 1851-75 1854-12 1851-13 1851-24 1851-31 1851-32 1851-33 1851-34 1851-35	Beretania Pump Station	7.39	1.8	36950
1952-06 1952-07 1952-08 1952-16 1952-17 1952-18 1952-19 1952-22	Kalihi Pump Station	6.63	1.8	33150
2052-08	Kalihi Shaft	6.60	2.8	33000
2052-12	Jonathan Springs	0.92	2.2	4600
1849-13 1849-14 1849-15 1849-16	Wilder Avenue Wells	6.80	3.5	34000
2153-10 2153-11 2153-12	Moanalua Wells	3.43	3.5	17150

3.2.3 Groundwater Pathway Conclusion

The aquifer which serves as the source of drinking water is estimated to be 900 feet beneath the site and is separated from

the source by aquitards within the caprock. The potential for contamination of groundwater resources does exist although the threat is believed to be low.

3.3 Surface Water Pathway

3.3.1 Hydrogeologic Setting

Sand Island was created on a shallow reef by incremental deposition of material from adjacent dredging in Honolulu Harbor and Keehi Lagoon. The area is relatively flat with an average gradient of less than minus 1 percent towards the shoreline.

The area has a dry climate, flat terrain, highly porous soils, and runoff conditions are not a serious problem. There are no natural surface water features on Sand Island. According to the Flood Insurance Rate Map, the site is designated as Zone A and no base flood elevation have been determined (Reference 12). The entire shoreline of Sand Island is designated as a Coastal High Hazard District. The tsunami inundation area extends from the shoreline adjoining the entrance channel of Honolulu Harbor inland west for a distance of 1,500 feet.

3.3.2 Surface Water Targets

The site is located adjacent to the Sand Island State Recreation Area. The Sand Island park occupies 87 acres of land, and is owned and managed by the State Department of Land and Natural Resources, Division of State Parks, Outdoor Recreation and Historic Sites. The nearshore waters around the Sand Island State Recreation Area provides recreational activities such as sailing and boating, water skiing, beach picnicking, camping, crabbing, jogging, surfing, sunbathing, fishing, limu (seaweed) gathering, snorkeling and swimming.

The National Marine Fisheries Service advised that the project area is a likely foraging area for juvenile threatened Green Turtles (Chenolia mydas) (Reference 8).

Two ecologically sensitive wetlands areas near the site are the Keehi Lagoon and Reef Runway. Keehi Lagoon is located 1.1 miles west of the site and encompasses an area of approximately 340.7 acres with approximately 3.7 miles of surface water frontage. The Reef Runway is located 1.5 miles west of the site with approximately 4.8 miles of surface water frontage and an area of about 792.0 acres. Both wetlands are used as feeding and resting areas for the federally endangered Hawaiian Stilt (Himantopus mexicanus knudseni). Keehi Lagoon is also used by the Hawaiian Owl (Asio flammeus sandwichensis), which is listed by the State

of Hawaii as endangered on Oahu (Reference 13).

The site has the potential to impact fishing and recreational activities via release to the State Park and the ocean, which is approximately 660 feet to the south. According to the Department of Land and Natural Resources, Aquatic Resources Division, approximately 10,753 pounds of marine life (fish, seaweed, etc.) was landed within 2 miles of the site in 1990. Within the 2 to 15 mile range, the data indicates that an additional 537,062 pounds of marine life was caught. This represents the reported commercial catch and does not include any recreational catch figures which can constitute a significant quantity (Reference 14).

3.3.3 Surface Water Pathway Conclusion

The site is located in an industrial area with no surface water sources used for drinking water and a low potential to contaminate sensitive environments or the food chain in the area.

3.4 Soil Exposure and Air Pathway

The site is surrounded by a maintained fence and located in an industrialized area. Sand Island is separated from Honolulu by the surrounding waters of Honolulu Harbor and Keehi Lagoon. The potential threat posed by the soil exposure and air migration

pathways is low.

4.0 Emergency Response Considerations

The National Contingency Plan [40 CFR 300.415 (b) (2)] authorizes the Environmental Protection Agency to consider emergency response actions at those sites which pose an imminent threat to human health or the environment. For the following reasons a referral to Region IX's Emergency Response Section does not appear to be necessary:

1. The area is located in an area which has a low potential to contaminate the drinking water resources.
2. The concentration of lead found in the soil samples from the site are below the levels considered to be a threat for an industrialized area.

5.0 Summary

Towco Enterprise has been operating on the site for the past 3 years. The practices of the operators have been questioned by the DOH for releases of battery acids, waste oils and other vehicular fluids onto the property. Soil samples gathered by the DOH HEER Office on June 26, 1992, indicate that there does appear to be evidence of releases of hazardous substances based on the higher levels of lead on the site. Soil samples from the site

11/10/92

H10984468445
TOWCO ENTERPRISES

ranged from 17.5 to 581 ppm for total lead, while an offsite soil sample resulted in 10.7 ppm for total lead.

Although there are 27 wells within four miles of the site, it is not likely that the site poses a threat to the basal aquifer due to the depth to the basal aquifer, the layers of low hydraulic conductivity alluvium beneath the site and the hydraulic pressure within the basal aquifer.

The likelihood of exposure via surface water, soil contact or air releases is also low for potential threats to the environment and to public health.

6.0 EPA Recommendation:

	Initial	Date
No Further Remedial Action Planned under CERCLA	<u>LW</u>	<u>10-15-92</u>
Priority SI under CERCLA	_____	_____
Lower Priority SI under CERCLA	_____	_____
Defer to Other Authority (e.g., RCRA, TSCA)	_____	_____

Notes:

OPTIONAL FORM 99 (7-90)

18 FAX TRANSMITTAL # of pages: 1

To: <u>LIZ GALLVSE</u>	From: <u>Jim Quinn</u>
Department: <u>HEER</u>	Phone: <u>415-744-3946</u>
Fax: <u>808-586-4370</u>	Fax: <u>415-744-1916</u>

NOV 1990-01-317-1900 5010-101 FEDERAL SERVICES ADMINISTRATION
11/10/92

ranged from 17.5 to 581 ppm for total lead, while an offsite soil sample resulted in 10.7 ppm for total lead.

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The likelihood of exposure via surface water, soil contact or air releases is also low for potential threats to the environment and to public health.

6.0 EPA Recommendation:

	<u>Initial</u>	<u>Date</u>
No Further Remedial Action Planned under CERCLA	_____	_____
Priority SI under CERCLA	_____	_____
Lower Priority SI under CERCLA	_____	_____
Defer to Other Authority (e.g., RCRA, TSCA)	_____	_____

Notes:

CONTACT REPORT

AGENCY/AFFILIATION: State of Hawaii
DEPARTMENT: Department of Health (DOH)
ADDRESS/CITY: 500 Ala Moana Blvd., Honolulu
COUNTY/STATE/ZIP: Honolulu, Hawaii 96813

CONTACT	TITLE	PHONE
Gary Siu	Engineer	(808) 586-4227

HEER PERSON MAKING CONTACT	DATE
Bryce Hataoka	July 21, 1992

SUBJECT: Solid Waste Unit files

SITE NAME: TOWCO

EPA ID#: HID 984468645

The Solid Waste (SW) Unit has a file on the Towco site. Inspection reports have been completed and are available for viewing. The operators of the site have never been issued a permit to operate as a derelict vehicle storage facility and a letter with an application for a permit was sent to Hawaii Metal Recycling Co. on March 24, 1992. A copy of the letter is in the SW file. Hawaii Metal Recycling Co., General Manager James Banigan responded to the letter on May 19, 1992. As of July 21, 1992, no permit application from the operators of the facility has been received by the DOH.

M F A **MASA FUJIOKA & ASSOCIATES**
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99-1205 Halawa Valley Street, Suite 302 • Aiea, Hawaii 96701-3281
Phone 808 484-5366 • Fax 808 484-0007

Frank Coluccio Construction Company
91-141 Kalaeloa Boulevard
Kapolei, Hawaii 96707-1707

April 18, 2001
MFA 99156-003
Fax No.: 682-3995

Attn: Ms. Lynette Langsi

Subject: Soil and Groundwater Assessment for Closure of
Sand Island Interim Soil Stockpiling Facility
Solid Waste Management Permit No. ST-0009-98
Nimitz Highway Reconstructed Sewer #2
Honolulu, Oahu, Hawaii

Dear Ms. Langsi,

Masa Fujioka & Associates (MFA) has prepared this report to evaluate the condition of soil and groundwater underlying the former stockpiling facility following removal of soil management units (SMUs) used to hold potentially contaminated soil generated by excavation during the Nimitz Highway Reconstructed Sewer #2 project. The soil and groundwater were previously tested by MFA prior to the installation of the plastic liner in the (SMUs), as reported in our *Baseline Soil and Groundwater Assessment, Sand Island Interim Soil Stockpiling Facility, Solid Waste Management Permit No. ST-0009-98, Nimitz Highway Reconstructed Sewer #2, Honolulu, Oahu, Hawaii* (September 27, 1999). The plastic liner and all temporarily stockpiled soils associated with the sewer construction project were removed at the time of our closure assessment. The information in the baseline and closure reports will be used to satisfy the conditions of the State of Hawaii, Department of Health (DOH) Solid Waste Management Permit No. ST-0009-98 for the operation of the stockpiling area.

Sand Island, which bounds the west side of Honolulu Harbor, is occupied by a large number of industrial/shipping operations. The soil stockpiling facility is located at the wastewater treatment facility on the south end of Sand Island (Figure 1). The stockpiling facility is adjacent to a State beach park. The Pacific Ocean is less than 1,000 feet south of the stockpiling facility.

SUBSURFACE SOIL SAMPLING

Baseline sample locations were originally selected at random within the SMUs using the EPA guidance published in SW-846. Closure samples were obtained on March 2, 2001 at the same ten sample locations (Figure 2). The soil samples were collected from a depth of approximately one foot below the finish grade of the prepared surface, following removal of the plastic liner in the SMUs. Decontamination of sampling equipment was performed between each sampling site by washing equipment with a solution of Liquinox (a non-phosphatic detergent) and clean tap water, rinsing with clean tap water and rinsing with distilled water. The sampling equipment was allowed to air-

Frank Coluccio Construction Company

April 18, 2001

Page 2

dry prior to sampling. Samples were collected in clean brass sleeves sealed by placing Teflon liners with plastic caps over the ends of the sleeves. The sealed samples were labeled and placed in plastic bags, which were sealed and immediately stored in a cooler with frozen gel packs.

Soil samples were analyzed for total petroleum hydrocarbons (TPH) as diesel and for TPH as oil, and for polychlorinated biphenyls (PCBs). Soil sample results from this closure assessment and from the 1999 baseline assessment are reported in Table 1.

GROUNDWATER SAMPLING

Six monitoring wells, installed at six borings located around the perimeter of the SMUs during the 1999 baseline assessment, were resampled on March 2, 2001. An attempt to purge at least eight well volumes was made prior to sampling, but all wells dried out at four well volumes or less (field data sheets are attached). No fuel sheen was observed on purged groundwater. Groundwater samples were collected using dedicated, disposable polyethylene bailers. Bottom-emptying devices were used to fill sample containers to minimize volatilization. Samples were immediately placed in a cooler with frozen gel packs.

The groundwater samples were analyzed for TPH as diesel and TPH as oil. Groundwater sample results from this study and from the 1999 baseline assessment are reported in Table 2.

The 1999 baseline study showed similar results of analyte concentrations mostly less than laboratory reporting limits, with the exception of two soil samples containing low concentrations of TPH as oil, and two soil samples containing PCB-1260 at concentrations less than Tier 1 Action Levels (Tables 1 and 2).

SOIL AND GROUNDWATER LABORATORY ANALYTICAL TEST RESULTS

Soil and groundwater samples were hand delivered to Transglobal Environmental Geosciences (TEG) for laboratory analysis. Chain-of-custody procedures were followed during collection and transfer of the samples; chain-of-custody forms are attached. Laboratory analytical methods are listed in the attached laboratory analytical reports.

The 2001 soil sample analytical results are presented in Table 1. TPH as diesel was not found in concentrations exceeding the laboratory reporting limit, except for samples 4F (14 mg/kg) and 6F (74 mg/kg), both well below the DOH Tier 1 Action Level of 5,000 mg/kg. TPH as oil was not detected in concentrations exceeding the laboratory

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Frank Coluccio Construction Company
April 18, 2001
Page 3

reporting limit, except for samples 6F (230 mg/kg) and 10F (760 mg/kg), both below the 5,000 mg/kg DOH Tier 1 Action Level. No PCB concentrations were detected above laboratory reporting limits for any of the soil samples.

The groundwater samples did not contain TPH as diesel nor TPH as oil in concentrations above laboratory reporting limits (Table 2).

SUMMARY

The soil and groundwater assessment for closure has been completed for the Sand Island Interim Soil Stockpiling Facility. The soil was found to contain low concentrations of TPH as diesel or oil in three samples, but all well below DOH Tier 1 Action Levels. Other soil samples did not contain these constituents in concentrations above laboratory reporting limits. No PCBs were detectable above laboratory reporting limits in any of the ten soil samples. The six groundwater samples did not contain TPH as diesel or TPH as oil in concentrations above laboratory reporting limits.

The test findings indicate that further investigation is not warranted following closure of the Sand Island Soil Stockpiling Facility. We recommend that Frank Coluccio Construction Company obtain a letter of concurrence with closure for the facility from the Department of Health.

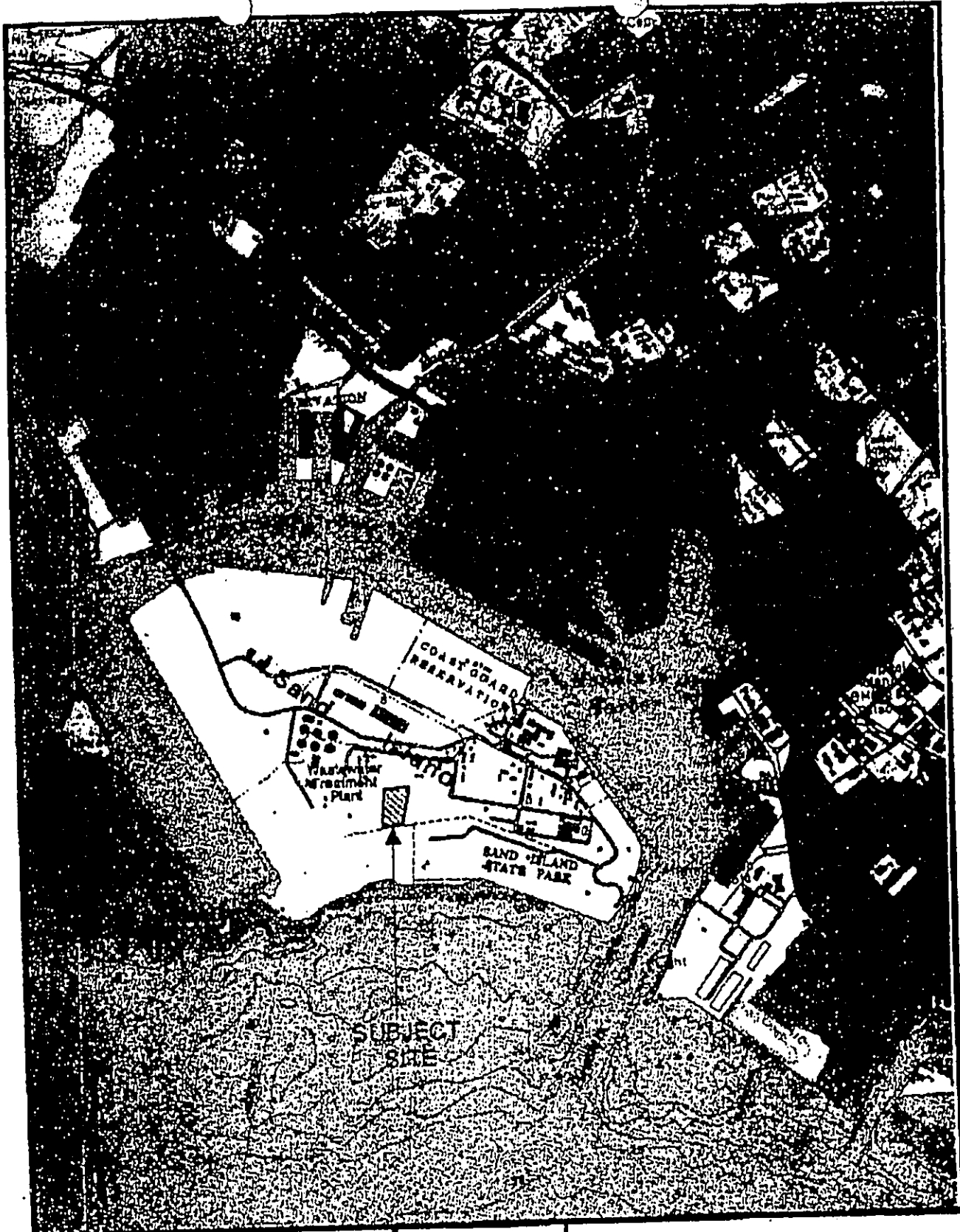
It has been a pleasure performing this project for you. Please contact us at (808) 484-5366 if you have any questions.

Respectfully submitted,

MASA FUJIOKA & ASSOCIATES
A Professional Partnership

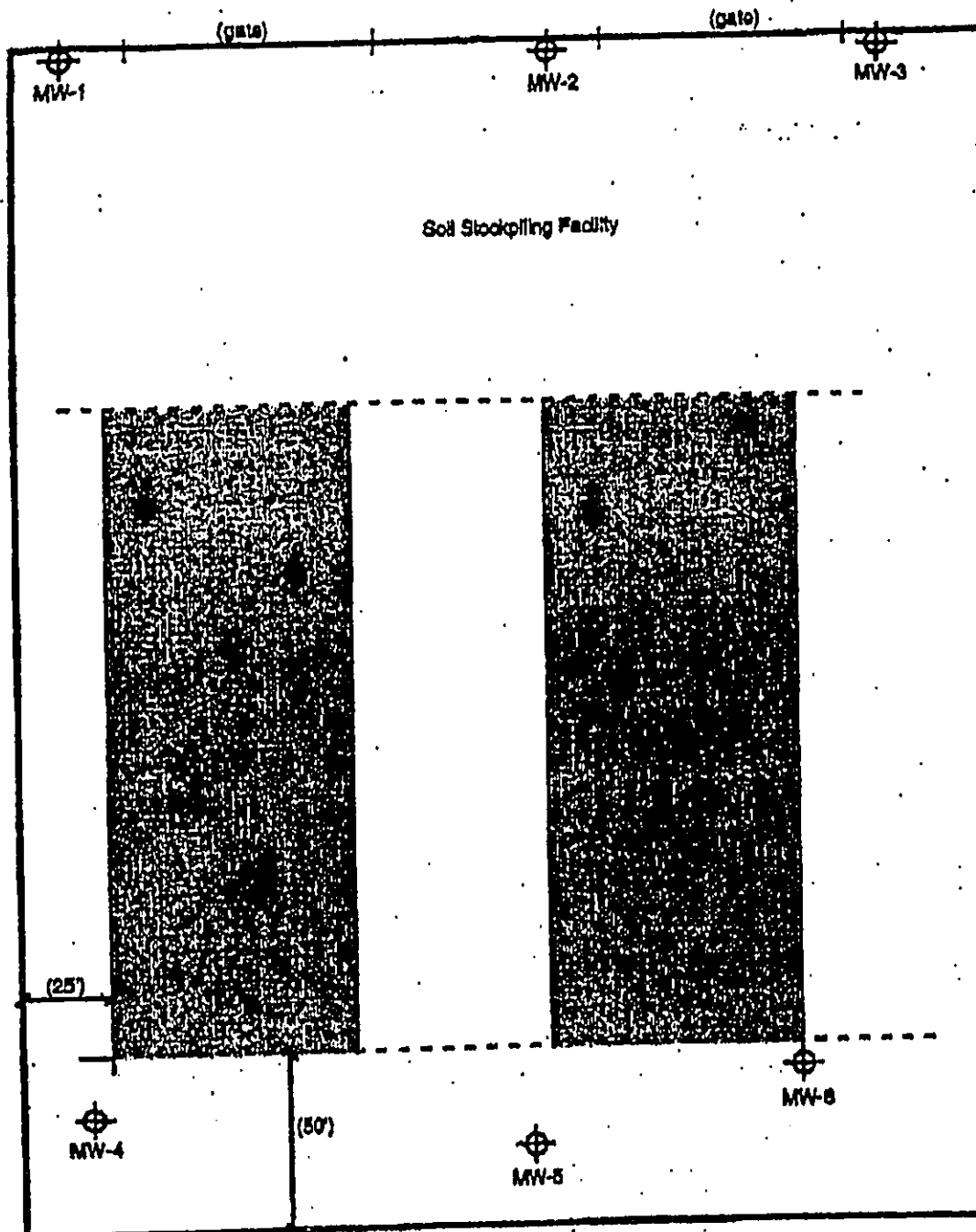

David R. Daugherty, R.G.
Principal

Attachments: Figure 1 Map of Area
 Figure 2 Site Map
 Table 1 Soil Sample Analytical Results
 Table 2 Groundwater Sample Analytical Results
 Laboratory Reports and Chain-of Custody Forms
 Groundwater Field Data Sheets



<p>Scale (Feet)</p> <p><small>Source: USGS Topographic Map, Honolulu Quadrangle, 1962</small></p>	Project No. 99168-003	<p>Figure 1 Map of Area Sand Island Interim Soil Stockpiling Facility Honolulu, Oahu, Hawaii</p> <p>M_FA MASA FUJIOKA & ASSOCIATES <small>ENVIRONMENTAL • GEOTECHNICAL • HYDROLOGICAL CONSULTANTS</small></p>
	Drawing No. 001	
	Approved By: DRD Drawn By: BATS	
	Rev. 01 Date: 4-17-01	
	Scale: 1:24,000	

Sand Island Wastewater Treatment Plant

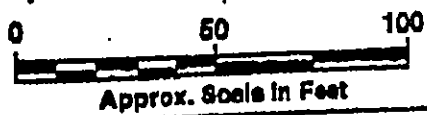


Autobody Repair Shop

Sand Island State Park

LEGEND

- Location of soil sample
- ⊕ Groundwater Monitoring Well



Project No. 99168-003

Drawing No. 001

Approved By: DRD

Drawn By: JBM

Rev: 02

Date: 4-17-01

Approx. Scale: 1"=50'

Figure 2
Site Map
Sand Island Interim
Soil Stockpiling Facility
Honolulu, Oahu, Hawaii

MFA MASA FUJIOKA & ASSOCIATES
ENVIRONMENTAL • GEOTECHNICAL • HYDROLOGICAL CONSULTANTS

TABLE 1
Soil Sample Analytical Results (mg/kg)
Sand Island Interim Soil Stockpiling Facility
Honolulu, Oahu, Hawaii

1-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-6/22/99 Dup	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1F-3/2/01 Dup	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.096
4F-3/2/01	14	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
5-6/22/99	<10	23	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.243
5F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
6-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
6F-3/2/01	74	230	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
7-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
7F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
8-6/22/99	<10	221	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
9-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
9F-3/2/01	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
10-6/22/99	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
10F-3/2/01	<10	760	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
DOH Tier 1 Action Levels	5,000	5,000	1	1	1	1	1	1	1

NOTES:

- 1) Samples labeled "F" are final; "Dup" indicates duplicate sample analysis.
- 2) <# = not detected at or above listed laboratory reporting limit.
- 3) PCB=Polychlorinated Biphenyl
- 4) Listed DOH Tier 1 Action Levels are for soil in an area where rainfall is less than 200 centimeters per year and a drinking water source is not threatened.
- 5) The Tier 1 Action Level for PCB is for the sum of all seven congeners.

TABLE 2
Water Sample Analytical Results (mg/L)
Sand Island Interim Soil Stockpiling Facility
Honolulu, Oahu, Hawaii

MW1-7/21/99	<0.50	<1.0
MW1-7/21/99 Dup.	<0.50	<1.0
MW1-3/2/01	<0.50	<1.0
MW2-7/21/99	<0.50	<1.0
MW2-3/2/01	<0.50	<1.0
MW3-7/21/99	<0.50	<1.0
MW3-3/2/01	<0.50	<1.0
MW4-7/21/99	<0.50	<1.0
MW4-3/2/01	<0.50	<1.0
MW5-7/21/99	<0.50	<1.0
MW5-3/2/01	<0.50	<1.0
MW6-7/21/99	<0.50	<1.0
MW6-3/2/01	<0.50	<1.0
DOH Tier 1 Action Levels	No Standard	No Standard

NOTES:

- 1) "Dup" indicates duplicate sample analysis.
- 2) <# = not detected at or above listed laboratory reporting limit.
- 3) Listed DOH Tier 1 Action Levels are for groundwater in an area where rainfall is less than 200 centimeters per year and a drinking water source is not threatened.

MFA

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OCT 29 1999

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99-1205 Halawa Valley Street, Suite 302 • Aiea, Hawaii 96701-3281
Phone 808 484-5366 • Fax 808 484-0007

Frank Coluccio Construction Company
91-141 Kalaeloa Boulevard
Kapolei, Hawaii 96707-1707

September 27, 1999
MFA 99156-003
Fax No.: 682-3995

Attn: Ms. Lynette Langsi

Subject: Baseline Soil and Groundwater Assessment
Sand Island Interim Soil Stockpiling Facility
Solid Waste Management Permit No. ST-0009-98
Nimitz Highway Reconstructed Sewer #2
Honolulu, Oahu, Hawaii

WOODWARD-CLYDE

Nimitz Sewer: W18-97

RECEIVED

OCT 27 1999

Log No.: 255

Files: 1350

Copies: _____

Dear Ms. Langsi,

Masa Fujioka & Associates (MFA) has prepared this baseline assessment to evaluate the condition of soil and groundwater at the stockpiling facility location prior to acceptance of potentially contaminated soil generated by excavation during the Nimitz Highway Reconstructed Sewer #2 (NHRS#2) project. The soil and groundwater were tested prior to the installation of the plastic liner in the soil management units (SMUs). This information will be used to satisfy the conditions of the State of Hawaii, Department of Health (DOH) Solid Waste Management Permit No. ST-0009-98 for the operation of the stockpiling area. The interim soil stockpiling facility is located at the Sand Island Wastewater Treatment Plant in Honolulu, Hawaii (Figure 1).

SCOPE OF WORK

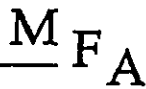
Task 1 Subsurface Investigation

Ten soil samples were collected from a depth of approximately one foot below the finish grade of the prepared surface prior to installation of the plastic liner in the SMUs. The sample locations within the SMUs were selected at random using the EPA guidance published in SW-846. The same locations will need to be resampled at the end of the project following removal of the plastic liner.

Six soil borings and monitoring wells were installed at locations around the perimeter of the SMUs to evaluate the groundwater conditions at the site. The wells were sampled during the baseline assessment and will need to be sampled during the closure assessment for the project.

Task 2 Laboratory Analysis

The soil samples were hand delivered to TEG-Pacific for chemical analysis.



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Frank Coluccio Construction Company
September 27, 1999
Page 2

The soil samples were analyzed for total petroleum hydrocarbons (TPH) as diesel fuel and oil, and for polychlorinated biphenyls (PCBs). The groundwater samples were tested for TPH as diesel fuel and oil.

The laboratory analysis was conducted on a five-day turnaround time basis.

Task 3 Subsurface Investigation Report

The results of the baseline assessment is documented in this letter report prepared for transmission to the DOH.

SOIL SAMPLING AND ANALYSIS

Surface soil samples were collected by an MFA Geologist at ten random locations within the post grading boundaries of the SMUs (Figure 2). The surface layer of soil was removed to a depth of approximately one foot using a shovel. The samples were collected by pushing pre-cleaned, pre-labeled stainless steel tubes into the soil at the bottom of the small pit. The soil sampling tubes were sealed with teflon sheeting and plastic caps and hand delivered to TEG-Pacific for laboratory testing of TPH as diesel fuel, TPH as oil and PCBs.

The soil sample analytical results are presented in Table 1 and the laboratory reports and chain-of-custody forms are attached. TPH as diesel was not found in concentrations exceeding the detection limit for the analysis. TPH as oil was detected in Sample 5 (23 mg/kg) and Sample 8 (221 mg/kg). The remaining soil samples did not contain TPH as oil in concentrations exceeding the detection limit for the analysis. The DOH Soil Action Level for TPH as oil is 5,000 mg/kg.

The congener PCB-1260 was detected in Sample 4 (0.096 mg/kg) and Sample 5 (0.243 mg/kg). The other samples did not contain any of the PCB congeners in concentrations exceeding the detection limits for the analysis.

GROUNDWATER SAMPLING AND ANALYSIS

MFA installed six groundwater monitoring wells around the perimeter of the SMUs (Figure 2). Well construction details are shown on the attached diagrams. The wells were installed using hollow-stem auger drilling



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September 27, 1999
Page 3

equipment. The wells were developed and purged prior to sampling. The groundwater samples were hand delivered to TEG-Pacific for laboratory testing of TPH as diesel fuel and TPH as oil.

The groundwater sample analytical results are presented in Table 2 and the laboratory reports and chain-of-custody forms are attached. TPH as diesel and TPH as oil were not found in concentrations exceeding the detection limit for the analysis.

SUMMARY

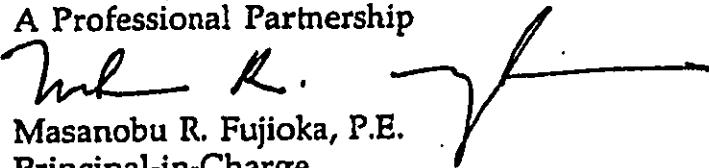
The baseline soil and groundwater assessment has been completed for the Sand Island Interim Soil Stockpiling Facility. The soil was found to contain low concentrations of TPH as oil in two samples and PCB-1260 in two samples. The DOH Soil Action Levels for these analytes were not exceeded. The groundwater did not contain TPH as diesel or TPH as oil in concentrations exceeding the detection limit for the analysis.

The sampling documented in this report will be duplicated once stockpiling operations are completed at the facility and the liner is removed. The bedding layer of sand that was placed beneath the liner will be visually inspected for evidence of leaks at the time of liner removal.

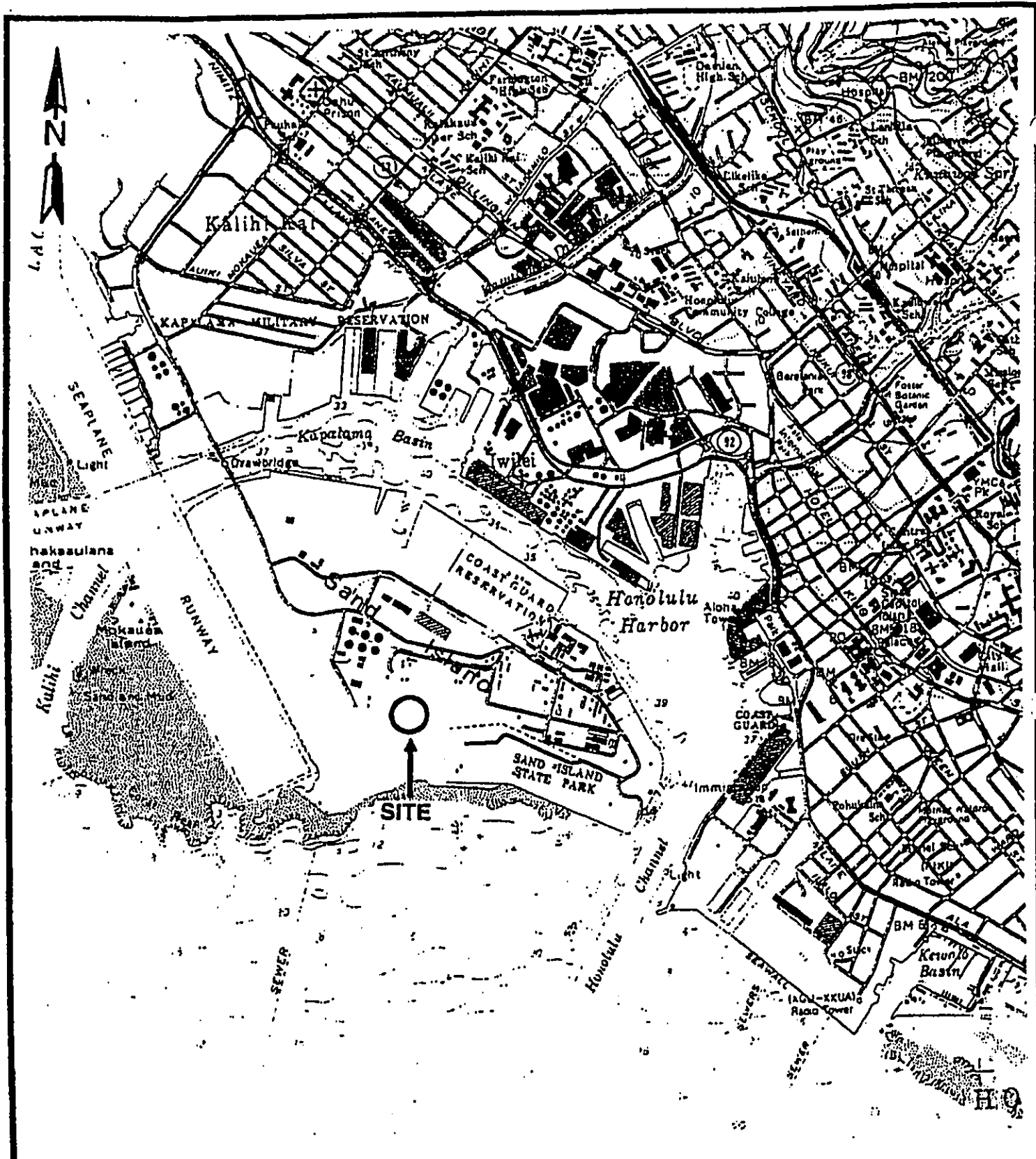
It has been a pleasure performing this project for you. Please contact Ned Murphy at (808) 484-5366 if you have any questions.

Respectfully submitted,

MASA FUJIOKA & ASSOCIATES
A Professional Partnership


Masanobu R. Fujioka, P.E.
Principal-in-Charge

Attachments: Figure 1
Figure 2
Table 1
Table 2
Well Construction Diagrams
Laboratory Reports and Chain-of Custody Forms



SOURCE:
US Geological Survey Topographic Map
Honolulu Quadrangle, 1983

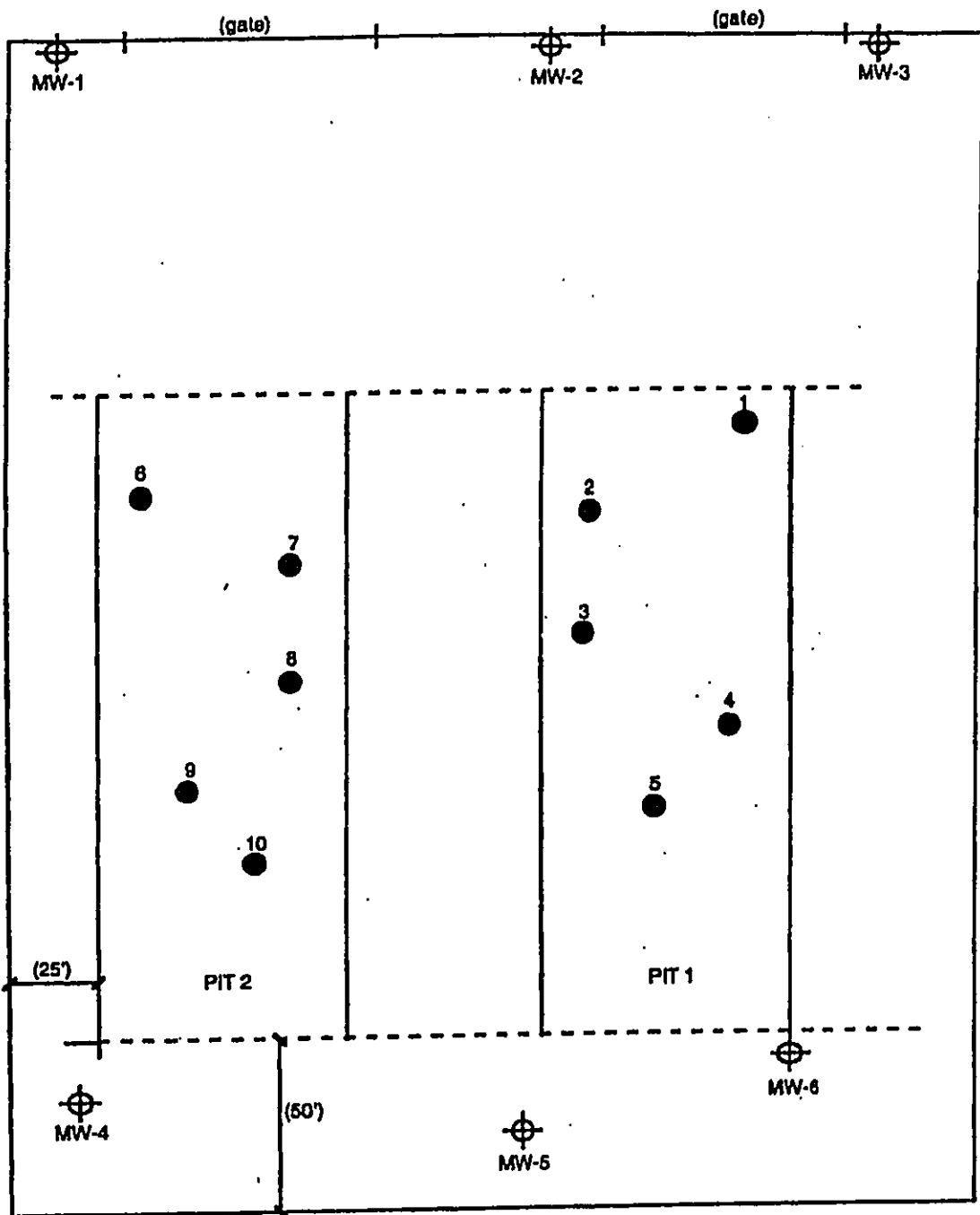


Project No.	99156-003
Drawing No.	001
Approved By:	MRF
Drawn By:	JSM
Rev.	01
Date:	7-28-99
Scale:	1"=2000'

Figure 1
MAP OF AREA
Sand Island Interim
Soil Stockpiling Facility
Honolulu, Oahu, Hawaii

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North



LEGEND

- Location of soil sample
- ⊕ Groundwater Monitoring Well



Approx. Scale In Feet

Project No.	99156-003
Drawing No.	001
Approved By:	MRF
Drawn By:	JSM
Rev.	01
Date:	7-29-89
Approx. Scale:	1"=50'

Figure 2
Sand Island Interim
Soil Stockpiling Facility
Honolulu, Oahu, Hawaii

M_PA MASA FUJIOKA & ASSOCIATES
ENVIRONMENTAL • GEOTECHNICAL • HYDROGEOLOGICAL CONSULTANTS

TABLE 1
Soil Sample Analytical Results (mg/kg)
Sand Island Interim Soil Stockpiling Facility
Honolulu, Oahu, Hawaii

Sample ID	TPH as Diesel	TPH as Oil	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
1	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1 Dup	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
3	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
4	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.096
5	<10	23	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.243
6	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
7	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
8	<10	221	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
9	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
10	<10	<20	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
DOH Tier 1 Action Levels	5,000	5,000	1(4)	1	1	1	1	1	1

- NOTES:**
- 1) <# = not detected at or above listed laboratory reporting limit.
 - 2) PCB=Polychlorinated Biphenyl
 - 3) Listed DOH Tier 1 Action Levels are for soil in an area where rainfall is less than 200 centimeters per year and a drinking water source is not threatened.
 - 4) The Tier 1 Action Level for PCB is for the sum of all seven congeners.

TABLE 2
Water Sample Analytical Results (mg/l)
145 Hekili Street
Kailua, Oahu, Hawaii

Sample ID Depth (feet)	TPH as Diesel	TPH as Oil
MW1-7/21	<0.50	<1.0
MW1-7/21 Dup	<0.50	<1.0
MW2-7/21	<0.50	<1.0
MW3-7/21	<0.50	<1.0
MW4-7/21	<0.50	<1.0
MW5-7/21	<0.50	<1.0
MW6-7/21	<0.50	<1.0
DOH Tier 1 Action Levels	No Standard	No Standard

NOTES:

- 1) <# = not detected at or above listed laboratory reporting limit.
- 2) Listed DOH Tier 1 Action Levels are for groundwater in an area where rainfall is less than 200 centimeters per year and a drinking water source is not threatened.

Appendix C

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Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

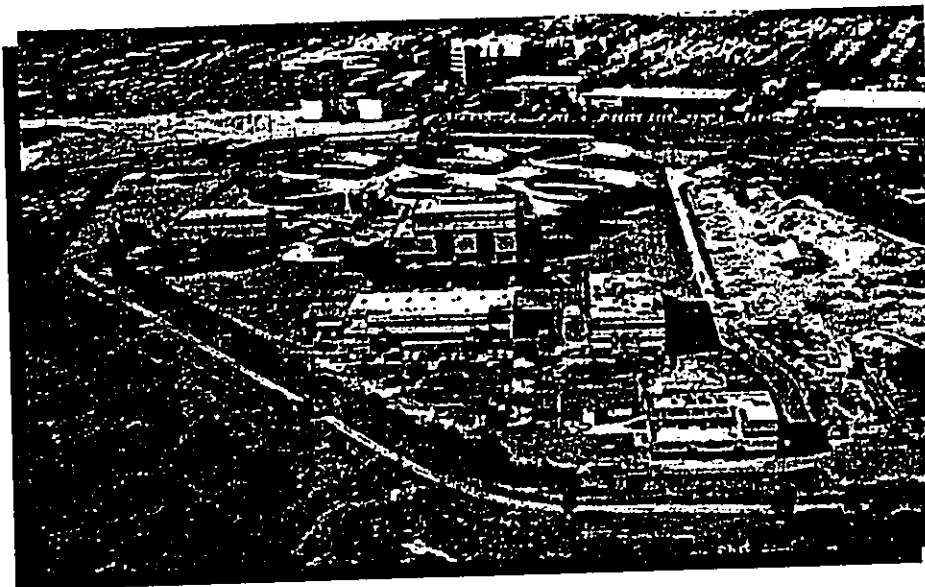
APPENDIX C

SOIL MANAGEMENT PLAN, SAND ISLAND WASTEWATER TREATMENT PLANT,
DECEMBER 2003

December 2003

Final

*Soil Management Plan
Sand Island Wastewater Treatment Plant
Honolulu, Hawaii*



Prepared for:

*City and County of Honolulu
Department of Design and Construction
650 South King Street
Honolulu, Hawaii 96813*

Prepared by:

 **Environet, Inc.**
PRESERVING EARTH'S RESOURCES FOR THE FUTURE

Under Subcontract to:


R. M. TOWILL CORPORATION
SINCE 1930



**City and County of Honolulu
Department of Design and Construction**

**Final Soil Management Plan
Sand Island Wastewater Treatment Plant
Honolulu, Hawaii**

Prepared for: City and County of Honolulu

Prepared by: Environet Inc., Honolulu, Hawaii

Under Subcontract to: R.M. Towill Corporation

December 2003

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Acronyms

CCH	City and County of Honolulu
CFR	Code of Federal Regulations
DOH	State of Hawaii Department of Health
DLNR	State of Hawaii Department of Land and Natural Resources
DPP	City and County of Honolulu Department of Planning and Permitting
EI	Environet, Inc.
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESI	Environmental Site Investigation
FL	fill land
HECO	Hawaiian Electric Company
HEER	Hazard Evaluation and Emergency Response
HHRA	Human Health Risk Assessment
JaC	Jaucas sand
LFR	LFR Levine Fricke
MSL	mean sea level
NPDES	National Pollution Discharge Elimination System
PCB	Polychlorinated Biphenyl
ppm	parts per million
PRG	Preliminary Remediation Goal
PSI	Professional Services Industries, Incorporated
SMP	Soil Management Plan
TMK	Tax Map Key
TSCA	Toxic Substances Control Act
USDA	United States Department of Agriculture
UV	Ultraviolet
WWTP	Wastewater Treatment Plant

Executive Summary

This Soil Management Plan (SMP) presents the strategy and options for excavation, handling and disposal of polychlorinated biphenyl (PCB)-containing soil at the Sand Island Wastewater Treatment Plant (WWTP) in Honolulu, Hawaii. This plan will ensure that the PCB-containing soil at the WWTP is properly handled during excavation activities and disposed or reused.

PCB contamination was detected within two construction project areas, the Headworks and UV Disinfection project sites, at the Sand Island WWTP. The levels detected exceeded regulatory levels set forth in the Toxic Substances Control Act (TSCA), Title 40 Code of Federal Regulations (CFR) 761.61. In accordance with the TSCA regulations, remediation of the site was required. The City and County of Honolulu elected to conduct a "self-implementing cleanup of the site" in accordance with Section 40 CFR 761.61a of the TSCA regulations. A TSCA Notification Report for the proposed remedial action was submitted to and approved by the U.S. Environmental Protection Agency (EPA) Region 9 in October 2002 (EI 2002d). Remediation of the sites commenced in February 2003 and was completed in March 2003.

The Sand Island WWTP site is considered a low occupancy site under TSCA, and therefore, the soil cleanup level for the site was initially set at 25 parts per million (ppm) per 40 CFR 761.61a. Soils with PCB concentrations greater than 25 ppm were removed from the site and disposed at proper facilities according to the procedures described in the Notification Report. Approximately 150 cubic yards of PCB contaminated soil from five hotspots were excavated and disposed in February 2002 (PSI 2002).

After remediation and subsequent consultation in September 2003, EPA Region 9 deemed the Sand Island WWTP as not regulated under TSCA. A determination for the site was made as follows: 1) soil with >50 ppm PCBs is regulated under TSCA and requires removal and disposal at a TSCA landfill; 2) any remaining soil with ≤50 ppm PCBs is not regulated under TSCA; and 3) a low occupancy deed restriction for the property is not required as would have been under the self-implementing cleanup for the remaining soil with ≤50 ppm PCBs. Since soil with >25 ppm PCBs was already removed under the self-implementing cleanup action, the remaining soil within the two construction project areas is considered to not be regulated under TSCA.

Current and future construction activities will generate excess soil from structural excavations that contains PCBs at levels that do not exceed the TSCA-imposed clean-up level. The remaining soil can be divided into two categories:

- PCB-containing soil – Soil located above the groundwater table (0 MSL) with PCB concentrations less than 50 ppm.
- Clean soil – Soil from below the groundwater table.

This SMP is intended to address the handling and disposal/reuse options for the excess soils generated during past and future construction work at the site that contain PCB levels below the TSCA-imposed clean-up level. These PCB-containing soils will require restricted re-use, landfill disposal, or treatment. Six disposition options for soils containing PCBs below 50 ppm were evaluated. These options include:

- Re-use On site
- Re-use Off site
- Disposal at a Municipal Solid Waste Landfill
- Disposal at a TSCA-Approved Landfill
- Treatment Utilizing Solvent Extraction
- Treatment Utilizing Thermal Desorption

The six options were evaluated based upon applicability, implementation requirements, restrictions, advantages, disadvantages, construction cost and time required for implementation.

Based on all these criteria, on-site reuse of soil was determined to be the most economically feasible alternative. As for clean soil excavated from below the groundwater table, these soils will be segregated from PCB-containing soil at the time of excavation. No re-use restrictions will be required for this soil.

The Headworks and UV Disinfection projects are projected to be completed within two years. In the interim, excavated soil will be temporarily stockpiled both on-site and off-site at the adjacent State of Hawaii Department of Land and Natural Resources property. Engineering controls will be implemented to prevent erosion and minimize fugitive dust from the stockpiles. After completion of construction, an addendum plan that details the final disposition of the stockpiled soil will be prepared.

Section 1

Introduction

This Soil Management Plan (SMP) presents the strategy and options for excavation, handling and disposal of polychlorinated biphenyl (PCB)-containing soil at the Sand Island Wastewater Treatment Plant (WWTP) in Honolulu, Hawaii. This plan will ensure that the PCB-containing soil is properly handled and disposed during construction activities for the Headworks and UV Disinfection projects.

This SMP was developed for the City and County of Honolulu (CCH) by Environet, Inc. (EI) under subcontract to R.M. Towill Corporation.

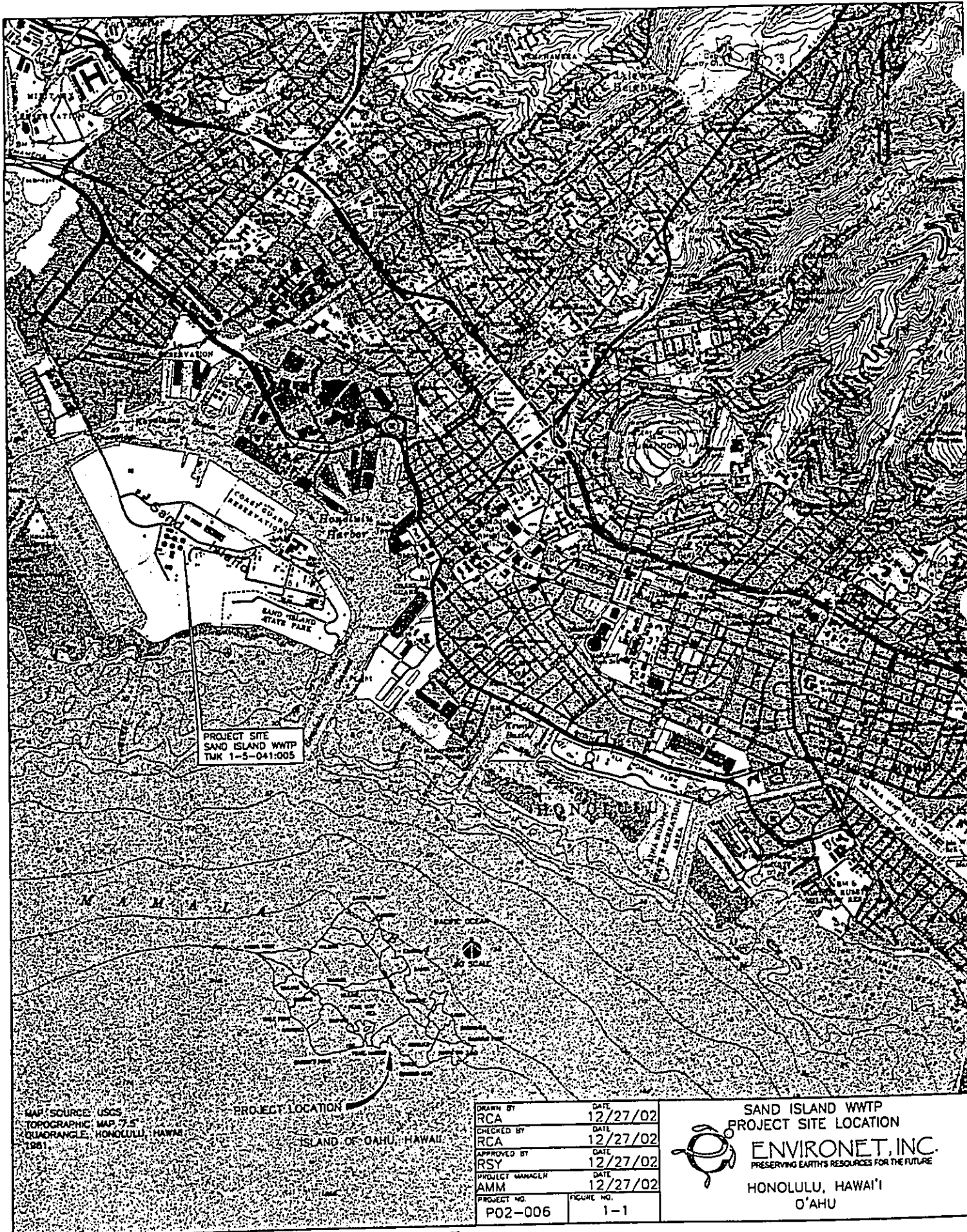
1.1 Site Location and Description

The Sand Island WWTP site is located at 1350 Sand Island Parkway, which is located on Sand Island off the south-central coast of Oahu in Honolulu, Hawaii (Figure 1-1). The WWTP occupies a portion of tax map key (TMK) 1-5-041:005, an approximately 50-acre land parcel owned by the State of Hawaii and leased to the CCH.

The topography of the WWTP site is generally flat with ground surface elevations ranging from about 5 to 8 feet above mean sea level. Soils at the site are classified as Jaucas sand (JaC) and mixed fill land (FL) by the U.S. Department of Agriculture Soil Conservation Service (USDA 1972). The Jaucas series consist of excessively drained calcareous soils that developed from wind and water deposited sand from coral and seashells. Jaucas Sand is typically a pale brown to very pale brown sand mixed with organic matter and alluvium. Fill Land consists of areas filled with materials dredged from the ocean or hauled from nearby areas and general material from other sources.

Groundwater at the site consists of two distinct systems: a shallow, unconfined aquifer and a deeper basal aquifer. The shallow aquifer is unconfined (i.e., not confined by an impermeable layer on top of the aquifer) and occurs at about 4 to 6 feet below ground surface. This aquifer is classified as a sedimentary aquifer and is hydraulically connected to the ocean, meaning the groundwater elevation is subject to tidal influence. The deep aquifer is classified as a volcanic, flank, basal, confined aquifer. The depth to the basal aquifer is greater than 1,000 feet below ground surface (Wentworth, 1951).

The average annual rainfall at the WWTP site is about 24 inches per year (60 centimeters). The nearest bodies of water are Honolulu Harbor to the north and Keehi Lagoon to the west, both of which are located about 1,000 feet from the site.



1.2 WWTP Construction Projects

The Sand Island WWTP is currently undergoing two construction projects to improve the performance and reliability of the plant to comply with the renewed National Pollution Discharge Elimination System (NPDES) Permit. The projects are the UV Disinfection Project and the Headworks Project. The project locations are shown on Figure 1-2.

The UV Disinfection Project will upgrade the WWTP capabilities by adding disinfection after the existing primary treatment. The project activities include the construction of two 96-inch primary effluent pipes, UV screening facility, and a new effluent pump station and wet well, UV disinfection facility, 84-inch final effluent pipe, and various ancillary structures such as a drainage channel, access road, and electrical transformers.

The Headworks Project will upgrade the grit removal, flow monitoring, and flow control capabilities of the WWTP and increase the capacity of the WWTP through the construction of new primary clarifiers. The project activities include the construction of an office, new headworks building that includes screening and grit removal equipment, new Return Flow Pump Station, and two new primary clarifiers. Due to funding, the Headworks project was broken up into two (2) phases. Phase 1 includes the construction of the office, a new headworks building that includes screening and grit removal equipment, and the new Return Flow Pump Station. Phase 2 includes the construction of the two primary clarifiers.

1.3 Previous Investigations

1.3.1 Environmental Site Investigations

In support of the WWTP expansion, the Hawaiian Electric Company (HECO) plans to build an electrical substation on a parcel of land immediately to the east of the current Headworks Phase 2 project site (Figure 1-32). As part of their due diligence, HECO conducted a Phase I Environmental Site Assessment (ESA) for the parcel (LFR 2001a). Based on their findings of previous use of the area as an automobile salvage yard, HECO conducted a Phase II ESA of the area where the new substation will be built (LFR 2001b). The results of the Phase II ESA sampling indicated the presence of lead, ethylbenzene, and petroleum compounds. Other analytes detected included xylenes, naphthalene, PCBs, cadmium, and chromium.

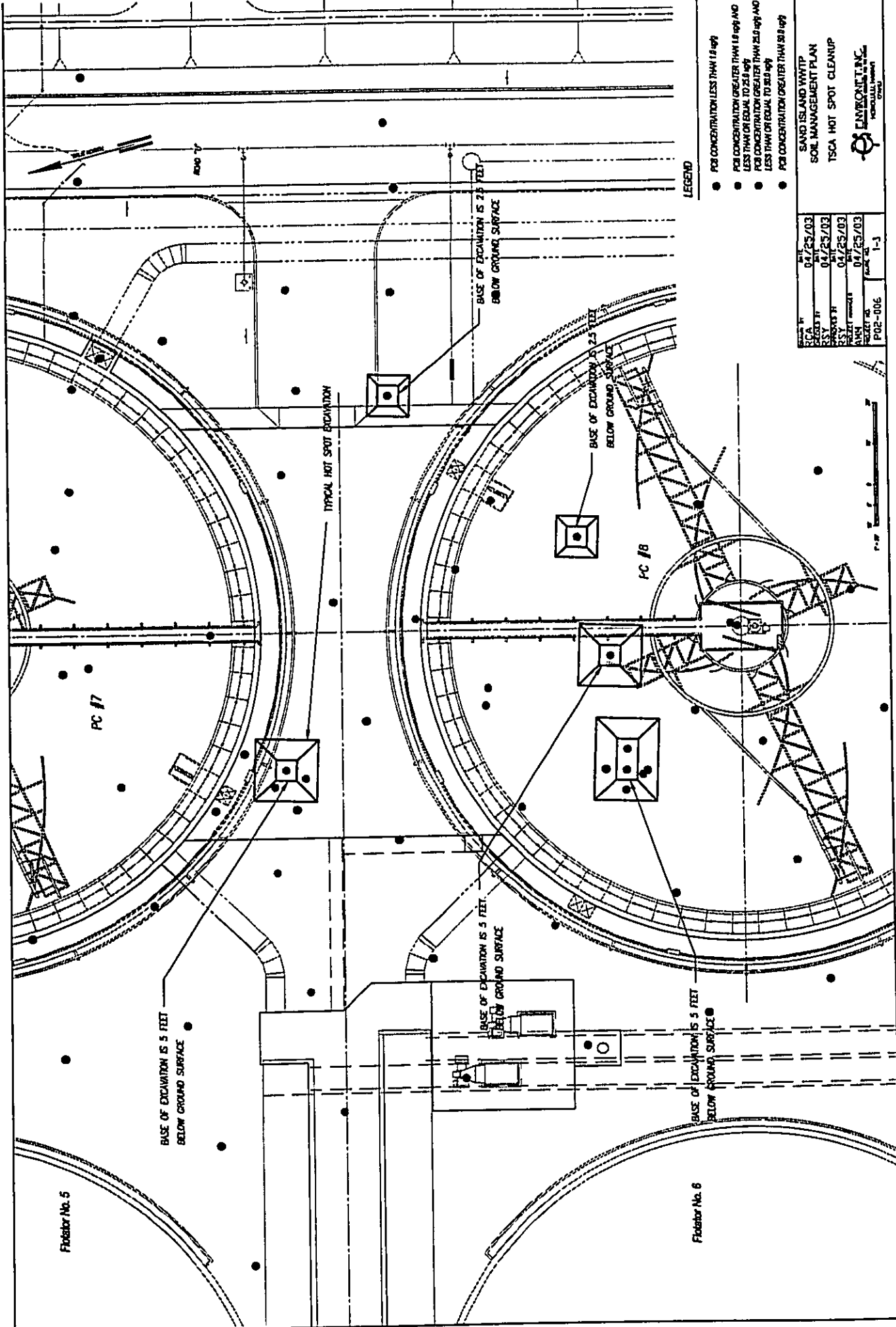
The HECO sampling results were provided to the State of Hawaii Department of Health (DOH). Based on HECO's findings, the DOH Office of Hazard Evaluation and Emergency Response (HEER) determined that a release had occurred as defined in the Hawaii State Contingency Plan for hazardous substance releases. Since the former salvage yard appeared to have extended into a portion of the Headworks Phase 2 project site, the CCH decided that it would be prudent to conduct an environmental site investigation (ESI) of the project site.

The ESI conducted at the Headworks Phase 2 project site led to the discovery of PCB contamination in soil above the groundwater table (EI 2002a). Due to the close proximity of the UV Disinfection project site, the CCH, during negotiations with DOH, expanded the investigation to cover areas within the UV Disinfection project site that hadn't been excavated yet. In addition, the Contractor on the Headworks Phase 1 project sampled soil around the new headworks building for health and safety purposes.

1.3.2 TSCA Cleanup and Human Health Risk Evaluation

The sampling results of the ESI were presented to DOH and the U.S. Environmental Protection Agency (EPA) Region 9 in July 2002. In August 2002, a determination was made by EPA Region 9 that the WWTP site should be considered a Toxic Substances Control Act (TSCA) site based on the fact that four soil samples contained PCBs at concentrations higher than 50 ppm. In September 2002, the CCH elected to conduct a "self-implementing cleanup" in accordance with Title 40 Code of Federal Regulations (CFR) 761.61. A TSCA Notification Report was prepared for the self-implementing cleanup. EPA Region 9 reviewed and approved the TSCA Notification Report in October 2002.

The Sand Island WWTP is considered a low occupancy site under Title 40 761.61, and therefore, the soil cleanup level was initially set at 25 parts per million (ppm) PCBs. Soils with >25 ppm PCBs were excavated and disposed at a TSCA permitted landfill during cleanup conducted in February 2003. Approximately 150 cubic yards of PCB contaminated soil from five hotspots were removed and disposed (Figure 1-3). The remediation activities are documented in the closure report submitted by Professional Services Industries, Incorporated (PSI 2002).



LEGEND

- PCB CONCENTRATION LESS THAN 1.0 ug/g
- PCB CONCENTRATION GREATER THAN 1.0 ug/g AND LESS THAN OR EQUAL TO 25.0 ug/g
- PCB CONCENTRATION GREATER THAN 25.0 ug/g AND LESS THAN OR EQUAL TO 50.0 ug/g
- PCB CONCENTRATION GREATER THAN 50.0 ug/g

DATE	04/25/03
SCALE	AS SHOWN
DATE	04/25/03
SCALE	AS SHOWN
DATE	04/25/03
SCALE	AS SHOWN
PROJECT NO.	PG2-006
SHEET NO.	1-3

SAND ISLAND WHIPP
 SOIL MANAGEMENT PLAN
 TSCA HOT SPOT CLEANUP
 ENVIRONMENTAL
 CONSULTANTS

After remediation and subsequent consultation in September 2003, EPA Region 9 deemed the Sand Island WWTP as not regulated under TSCA. A determination for the site was made as follows: 1) soil with >50 ppm PCBs is regulated under TSCA and requires removal and disposal at a TSCA landfill; 2) any remaining soil with ≤50 ppm PCBs is not regulated under TSCA; and 3) a low occupancy deed restriction for the property is not required as would have been under the self-implementing cleanup for the remaining soil with ≤50 ppm PCBs. Since soil with >25 ppm PCBs was already removed under the self-implementing cleanup action, the remaining soil within the two construction project areas is considered to not be regulated under TSCA. A copy of the determination letter received from EPA Region 9 is provided in Appendix A.

Even though the remaining soils are not regulated under TSCA, potential health risks from the contaminated soils still exist. Therefore, a human health risk assessment (HHRA) has been completed for the WWTP site (EI 2003c). The HHRA was reviewed and approved by DOH. The HHRA addressed the risks to on-site WWTP operators and visitors from the remaining contaminated soil. Based on the ESI sampling results and the post-remediation confirmation sampling results (Figure 1-4), the HHRA concluded that the health risks to on-site WWTP operators is within DOH's acceptable risk range and no further remediation at the site is necessary (EI 2003c).

1.4 Structural Excavations

The Headworks and UV Disinfection projects will require structural excavations for the construction of the new facilities. Since the remaining soils above the groundwater table contain low levels of PCBs, the excavated soils will need to be properly handled and disposed. This SMP is meant to address the excavation, handling, and disposal of these soils.

The current status and estimated quantities of PCB-containing soil to be excavated are provided in the following tables. Some of the structural excavations were completed prior to the discovery of PCBs, and the soils from these excavations are already stockpiled on-site; approximately 25,000 cubic yards of soil from the UV Disinfection Project and 10,000 cubic yards from the Headworks Project. The soil generated from the future structural excavations will be temporarily stockpiled either on-site or off-site at the adjacent State Department of Land and Natural Resources (DLNR) parcel (see Section 4.0). The handling and final disposal options for the excavated soils are covered in Section 2.0 of this plan.

The structural excavations required for the UV Disinfection Project are listed in Table 1-1.

Table 1-1: UV Disinfection Project Construction Status

Construction Area	Structural Excavation Status	Estimated Quantity of Excavation Remaining (cubic yards)	Estimated Quantity Already Excavated and Stockpiled On Site (cubic yards)
2-96" Primary Effluent Pipes	completed	0	6,000
UV Screening Facility	completed	0	1,500
Effluent Pump Station	completed	0	6,500
Wet Well	partially complete	0	4,000
UV Disinfection Facility	completed	0	8,500
84" Final Effluent Pipe	partially complete	0	5,000
Various Ancillary Structures	not started	2,500	0
Total		9,000	31,500

The required structural excavations for the Headworks Phase 1 Project are shown in Table 1-2.

Table 1-2: Headworks Phase 1 Project Construction Status

Construction Area	Structural Excavation Status	Estimated Quantity of Excavation Remaining (cubic yards)	Estimated Quantity of Already Excavation and Stockpiled On Site (cubic yards)
Screening, Flow Measurement, Grit Removal Equipment	completed	0	10,000
Total		0	10,000

The required structural excavations for the Headworks Phase 2 Project are shown in Table 1-3.

Table 1-3: Headworks Phase 2 Project Construction Status

Construction Area	Structural Excavation Status	Estimated Quantity of Excavation Remaining (cubic yards)	Estimated Quantity of Already Excavation and Stockpiled On Site (cubic yards)
2-Primary Clarifiers, Return Flow Pump Station, 2 78" Ala Moana Force Main	not started	45,000	0
	Total	45,000	0

Section 2

Soil Excavation and Disposal

The CCH is currently working closely with EPA and DOH to allow investigation, remediation, and construction work at the site to proceed concurrently. The Notification Report approved by EPA and DOH included sampling results and planned self implementing remedial actions for the areas within the WWTP that are currently under construction or will be under construction in the near term. The remaining areas of the WWTP will be investigated in a phased approach in conjunction with DOH. Pending the results, additional remediation will be conducted as required.

This section presents the soil excavation plan and disposal options for the remaining soils (after TSCA remediation) at the two construction project sites. Given that there are areas that contain soils with low levels of PCB-contamination and areas that do not contain PCBs, the remaining soil will be divided into two categories:

- PCB-containing soil – Soil excavated from above the groundwater table with PCB concentrations less than 50 ppm.
- Clean soil – Soil excavated from below the groundwater table (0 mean sea level [MSL]). Sampling results of soils beneath the groundwater table indicate that PCBs are not present below the groundwater table at the site. DOH has concurred with this determination and has agreed that soils beneath the groundwater table may be reused without any restrictions.

The soil excavation and disposal options are discussed below.

2.1 PCB-Containing Soil Excavation and Management

Soils containing low levels of PCBs (i.e., less than 50 ppm) require management since they may contain PCBs at concentrations greater than the EPA Region 9 Preliminary Remediation Goal (PRG) for residential soils of 0.22 ppm. The EPA Region 9 residential PRG is typically used as a preliminary screening criterion to determine if site cleanup is required. Soils containing PCBs at concentrations below the residential PRG may be used without restriction and soils with PCBs at concentrations above this threshold may be used at sites dependent on protective measures implemented, intended site use, and approval from EPA and DOH.

All soil will be excavated following industry-standard practices. Confirmation soil sampling will not be conducted after structural excavation since all the excavation areas will be characterized prior to excavation.

There are six possible options for the disposition of the PCB-containing soil (PCB concentrations less than 50 ppm). The options are:

- Re-use On site
- Re-use Off site
- Disposal at a Municipal Solid Waste Landfill
- Disposal at a TSCA-Approved Landfill
- Treatment Utilizing Solvent Extraction
- Treatment Utilizing Thermal Desorption

2.1.1 Disposition Options

The following subsections describe each of the disposition options.

2.1.1.1 On-Site Re-Use

On-site re-use of soil generally consists of re-use of soil for structural fill and landscaping features. On-site re-use of PCB-containing soil with concentrations less than 50 ppm does not require EPA approval. However, reuse will require implementation of soil management measures to prevent erosion and runoff of soil. Such measures consist of covering the soil with gravel, grass or other approved materials. All soil management measures will need to be documented in a landscaping and erosion control plan and will require the development and implementation of a long-term management plan to address long-term maintenance and handling issues.

As previously mentioned, a HHRA has been prepared for the WWTP site. The HHRA concluded that the remaining soil contamination does not pose an unacceptable risk to on-site WWTP operators and visitors. Therefore, reuse of soil on the WWTP property should be acceptable from a human health risk perspective.

The grading, landscaping, and erosion control plan and the long-term management plan will need to be approved by DOH.

2.1.1.2 Off-Site Re-Use

Off-site re-use of soil consists of re-use of soil for fill at another off-site location. Off-site re-use of PCB-containing soil with concentrations less than 50 ppm will require DOH approval. Per negotiations, DOH will allow soil with PCB concentrations less than 50 ppm to be re-used off-site at industrial zoned locations. The off-site disposal locations will be approved by DOH on a site-by-site basis.

Similar to on-site reuse, this option will require a grading, landscaping, and erosion control plan, a long-term management plan, and completion of a site specific HHRA.

2.1.1.3 Municipal Solid Waste Disposal

Soil with PCB concentrations of less than 50 ppm may be disposed at an on-island municipal solid waste landfill such as the Waimanalo Gulch Municipal Solid Waste Landfill or the PVT Landfill. CCH will need to obtain approval from the landfill to allow disposal of soil with PCB concentrations greater than 1 ppm.

The excavation contractor will be required to document the final disposition of the soil if it is taken to an off-site landfill. Documentation will include preparation of non-hazardous waste manifests and may also include preparation of location maps of off-site disposal sites.

2.1.1.4 TSCA-Approved Landfill Disposal

PCB-containing soil may be disposed at a TSCA-approved landfill on the mainland. Although soil with less than 50 ppm is not a TSCA-regulated waste, a TSCA-approved facility can accept the soil without the additional special approvals required for disposal at an on-island municipal solid waste landfill facility.

2.1.1.5 Solvent Extraction

Solvent extraction uses patented solvents to treat PCB-contaminated soils by solubilizing PCBs from soil matrixes. Solvent extraction has been used at some project sites on the mainland to remove PCBs to non-detectible levels. If effective, the PCB concentrations in the treated soil may be below the EPA Region 9 residential PRG of 0.22 ppm for PCBs and the soil may potentially be re-used on- or off-site without restriction. The PCBs would be concentrated into the solvent thus reducing the volume and cost of PCB-waste disposal.

The solvent extraction cycle begins as contaminated soil is placed into extraction bins. Clean solvent is transferred from a solvent storage tank into the bins where it is allowed to penetrate the soil matrix and facilitate contaminant extraction. The PCBs are dissolved into the extract solution and the

solution is drained to a solvent recovery system. Extraction cycles are repeated as necessary to achieve treatment requirements.

The solvent recovery consists of media adsorption and distillation. Contaminants are concentrated in distillation bottoms or in adsorption media. Recovered contaminants are normally shipped off-site for disposal at a hazardous waste landfill. Residual clean solvent in the treated soil is recovered using a closed-loop solvent vapor recovery system that includes an air chiller/coalescer, blower, and air reheater.

A treatability study is normally performed prior to implementing a pilot or full scale operation. The treatability study is used to determine whether solvent extraction can be effective in removing PCBs from site soils. The treatability study typically consists of shipping a sample of the contaminated soil to the remediation vendor where the effectiveness of the technology is measured in a bench-scale treatment unit. Based on the effectiveness, a decision can be made as to whether or not to proceed with a pilot-scale test. A measure of risk always exists that the results of the full scale operation or pilot scale test may differ from the treatability study.

A pilot scale test is recommended prior to implementing a full scale remedial operation. The pilot scale test is used to determine whether solvent extraction can be effective in removing PCBs from site soils with varying PCB concentrations and soil heterogeneity. The pilot scale test is typically conducted at the remedial site. The volume of soil to be treated in a pilot scale test may vary, but a range of 2 to 5 percent of the total volume to be treated may be acceptable. Based on the effectiveness, a decision can be made as to whether or not to proceed with a full-scale remedial operation. A measure of risk always exists that the results of the full scale operation may differ from the treatability study or pilot scale test.

2.1.1.6 Thermal Desorption

Thermal desorption uses heat to treat PCB-contaminated soils by volatilizing PCBs from soil matrixes. Thermal desorption has been used at some project sites on the mainland to reduce PCBs to non-detectable levels. If effective, the PCB concentrations in the treated soil may be below the EPA Region 9 residential PRG of 0.22 ppm and the soil may potentially be re-used on- or off-site without restriction. The PCBs would be concentrated into a liquid matrix thus reducing the volume and cost of PCB-waste disposal.

The thermal extraction cycle begins as contaminated soil is placed into treatment trays with screened bottoms and depths of 12 to 14 inches. The trays are loaded into a chamber containing a heat source that heats to 1,400 degrees Fahrenheit. Up to 3,000 cubic feet per minute of air is drawn through the soil matrix causing the heat to be transferred from the bottom few inches of material, upward,

- Advantages – general advantages of proposed remedial measure.
- Disadvantages – general disadvantages of proposed remedial measure.
- Implementability – certainty or likelihood that the treatment option can be implemented or can successfully treat the soil.
- Costs – estimated costs to implement each option.
- Time to Implement – estimated time requirements to start and complete each option.
- Relative Risk – risks weighs the certainty or likelihood of success, potential liability, and health risks to on-site workers, the public, and construction workers.

The applicability, requirements, advantages, disadvantages, implementability, estimated cost, estimated time for implantation, and relative risk, for each disposition option are presented in Table 2-1.

increasing the temperature of the entire treatment bed. Simultaneously, a vacuum is being produced in the system lowering the boiling point of the PCBs. The PCBs are heated to their reduced boiling point and/or significant vapor pressure and stripped from the soil.

In the air emission control system, the air and volatilized PCBs pass through a particulate filter, a condenser, and an activated carbon bed. At each of these devices, the air is further purified until it is free of all contaminants. The particulate filter is used to minimize dust collection in downstream air emission control components and eliminate particulate dust emissions to the atmosphere. The condenser, which is connected to an appropriately sized chiller, lowers the air stream temperature to approximately 40 degrees Fahrenheit. A storage vessel collects the condensate from the condenser and an activated carbon bed is used to polish the air stream prior to discharge to the atmosphere.

A treatability study is normally performed prior to implementing a pilot or full scale operation. The treatability study is used to determine whether thermal desorption can be effective in removing PCBs from site soils. The treatability study typically consists of shipping a sample of the contaminated soil to the remediation vendor where the effectiveness of the technology is measured in a bench-scale treatment unit. Based on the effectiveness, a decision can be made as to whether or not to proceed with a pilot-scale test. A measure of risk always exists that the results of the full scale operation or pilot scale test may differ from the treatability study.

A pilot scale test is recommended prior to implementing a full scale remedial operation. The pilot scale test is used to determine whether thermal desorption can be effective in removing PCBs from site soils with varying PCB concentrations and soil heterogeneity. The pilot scale test is typically conducted at the remedial site. The volume of soil to be treated in a pilot scale test may vary, but a range of 2 to 5 percent of the total volume to be treated may be acceptable. Based on the effectiveness, a decision can be made as to whether or not to proceed with a full-scale remedial operation. A measure of risk always exists that the results of the full scale operation may differ from the treatability study or pilot scale test.

2.1.2 PCB-Containing Soil Remediation Alternatives Analysis

Each remedial option discussed in the previous section has associated applicability, requirements, advantages, disadvantages, implementability, costs, time for implementation, and relative risk.

- Applicability – limits of a particular option imposed by federal or state regulations.
- Requirements – long term or short term needs to obtain regulatory approval or to prove technical feasibility of a particular option.

Table 2-1: PCB-Containing Soil Remediation Alternatives

Alternative	Applicability / Description	Requirements	Advantages	Disadvantages	Implementability	Estimated Relative Costs	Estimated Time to Implement	Relative Risk
On-Site Reuse	Per 40 CFR 761, soil with PCB concentrations of 50 ppm or less. Re-use soil on-site as backfill for structural excavations or for grading.	Prepare and implement a landscaping and erosion control plan approved by DOH. Provide ground cover to prevent soil run-off. Prepare and execute a long-term maintenance plan approved by DOH. Prepare a Human Health Risk Assessment approved by DOH.	Minimal handling and transportation. No additional waste profiling necessary. Relatively low cost.	Soil must be 50 ppm or less. Project site grading requirements may limit amount of soil that can be reused on-site. Landscaping features may extend up to 3 feet high. Long-term maintenance plan, including worker training, will need to be maintained in perpetuity. Future development at the site will need to accommodate for the soil reused on site. Grading must account for a corridor for 2-78" diameter Ala Moana Force Mains.	Moderate-High	\$66-100/cubic yard	6-10 months (to occur after all construction projects are completed)	Low
Off-Site Reuse	Per DOH negotiations, soil with PCB concentrations of 50 ppm or less. Re-use soil off-site as backfill for structural excavations or for grading.	Obtain DOH approval for off-site use on a case-by-case basis. Prepare and implement a landscaping and erosion control plan approved by DOH. Provide ground cover to prevent soil run-off. Prepare and execute a long-term maintenance plan approved by DOH. Prepare a Human Health Risk Assessment approved by DOH.	Minimal to moderate handling and transportation. No additional waste profiling necessary. Relatively low cost. Future development at the WWTP will not have to accommodate for the re-used soil.	Soil must be 50 ppm or less. Will require DOH review and approval of site on a case-by-case basis and will require tracking of reuse location. Identifying landowner willing to accept the soil may be difficult. Will restrict the future "land use" of the re-use site.	Low-Moderate	\$100-150/cubic yard (Cost does not include land leasing or acquisition)	1 year after finding acceptable site assuming 20 15-cubic yard truck loads per day	Low-Moderate
Municipal Solid Waste Landfill	Per 40 CFR 761, soil with PCB concentrations of 50 ppm or less. Dispose soil at a municipal solid waste landfill on-island.	Obtain landfill approval on a case-by-case basis. Waste profiling will be required for each contaminated area identified.	Minimal to moderate handling and transportation. Future development of the site does not have to accommodate for PCB contaminated soil reused at the site.	Soil must be less than 50 ppm. Landfill approval on a case-by-case basis that requires waste profiling. Waimanalo Gulch Landfill location may not be an option due to capacity reasons. Acceptance may be affected by capacity available at the time of disposal. Potential community objection to disposal of large quantities of PCB-containing soil in their neighborhood.	Moderate-High	\$700-750/cubic yard	1 year assuming 20 15-cubic yard truck loads per day	Low
TSCA-Approved Landfill	All soils regardless of PCB concentration. Dispose soil at a TSCA-approved landfill on the US mainland.	Obtain landfill approval on a case-by-case basis. Waste profiling will be required for each contaminated area identified.	No maximum PCB concentration. Future development of the site does not have to accommodate for PCB contaminated soil reused at the site. Finding a mainland landfill willing to accept the waste should not be a problem.	Extensive handling and transportation. Landfill approval on a case-by-case basis that requires waste profiling. Cost prohibitive.	Low (due to prohibitive cost)	\$1,000- \$1,500/cubic yard	1 year assuming loading 20 shipping containers per day, each containing 14 one-cubic yard boxes.	Low-Moderate (due to extensive transportation and handling)

Alternative	Applicability / Description	Requirements	Advantages	Disadvantages	Implementability	Estimated Relative Costs	Estimated Time to Implement	Relative Risk
Solvent Extraction	All soils regardless of PCB concentration. Treat soil with a solvent that strips PCBs from the soil. Solvent waste stream is disposed at a Hazardous Waste Landfill on the US mainland.	Perform treatability study. Obtain approval from DOH and EPA for alternative treatment technology. Perform remediation confirmation sampling.	Soil potentially remediated to a point where it may be reused at a site with no restrictions or long-term management requirements (i.e., less than EPA Region 9 residential PRG). If effective, future development will not have to accommodate for contaminated soil. Concentrates the PCBs into a low-volume waste stream.	EPA must authorize any treatment alternative other than TSCA-approved landfill or incinerator. Treatability study must be performed to determine the effectiveness of PCB removal. Full scale operation may not be as effective as shown in the treatability study due to the heterogeneity of the site soil. Pilot scale test is recommended to determine the effectiveness of PCB removal due to heterogeneity of the site soil. Technology not currently available on-land, high mobilization effort required. Cleanup confirmation testing required and if treated soil does not meet cleanup goals, may need to pursue another alternative. Waste solvent stream will likely need to be disposed as a RCRA hazardous waste. DOH may require approval of reuse site. Requires a relatively large staging area. Requires storage of hazardous chemicals on site. Poses potential risks to remediation construction workers. Relatively long time to implement.	Low-Moderate	\$10,000 for treatability study \$310,000 for mobilization and \$250/cubic yard for pilot-scale treatment \$500,000 for mobilization and \$700-\$250/cubic yard for full-scale treatment \$35/cubic yard for hauling and reuse off-site	2 years	High (due to uncertainty of effectiveness, storage of hazardous chemicals on-site)

Alternative	Applicability / Description	Requirements	Advantages	Disadvantages	Implementability	Estimated Relative Costs	Estimated Time to Implement	Relative Risk
Thermal Desorption	All soils regardless of PCB concentration. Thermally treat soil with heat to volatilize PCBs from the soil. Gaseous waste stream passes through carbon filters that strip the PCBs from the air. Carbon waste stream is disposed at a Hazardous Waste Landfill on the US mainland.	Perform treatability study. Obtain approval from DOH and EPA for alternative treatment technology. Perform remediation confirmation sampling.	Soil potentially remediated to a point where it may be reused at a site with no restrictions. If effective, future development will not have to accommodate for contaminated soil. Concentrates the PCBs into a low volume waste stream.	EPA must authorize any treatment alternative other than TSCA-approved landfill or incinerator. Treatability study must be performed to determine the effectiveness of PCB removal. Full-scale operation may not be as effective as shown in the treatability study due to heterogeneity of the site soil. Pilot scale test is recommended to determine the effectiveness of PCB removal due to heterogeneity of the site soil. Technology not currently available on-island, high mobilization effort required. Cleanup confirmation testing required and if treated soil does not meet cleanup goals, may need to pursue another alternative. Waste carbon will likely need to be disposed as a RCRA hazardous waste. DOH may require approval of reuse site. Requires air permits from the DOH. This may require public meetings and involvement. Permitting process may be very lengthy. May require air monitoring. Requires relatively large staging areas. Operation of a thermal desorption unit is relatively dangerous and requires strict monitoring and health and safety procedures.	Low-Moderate	\$50,000 for treatability study \$350,000 for mobilization and \$500/cubic yard for pilot-scale treatment \$350,000 for mobilization and \$200-\$250/cubic yard for full-scale treatment \$35/cubic yard for hauling and reuse off-site	Approximately 1 year to obtain permits. 2 years to treat after obtaining permits	High (due to uncertainty of effectiveness and high operational health and safety risks)

2.2 Soil Excavation and Management (0 MSL or below)

Soil samples at or below the groundwater table (0 MSL) from 31 locations within the construction project areas showed non-detectable PCB concentrations (EI, 2002a; EI, 2002b). Given that there was no detectable concentrations of PCBs in the soils collected from below the groundwater table, EPA and DOH has determined that the soil below the groundwater table (0 MSL) can be excavated and disposed without any special restrictions, and is available for unrestricted use. Approximately 20,000 cubic yards of soil from beneath the groundwater table will be excavated for the Headworks Phase 2 project. The CCH plans to temporarily stockpile this soil on the adjacent DLNR parcel until a reuse site can be identified (see Section 4.0).

Section 3

Conclusions

This soil management plan presents the strategy for excavation, handling, and disposal of PCB-containing soil at the Sand Island WWTP. This plan presents alternatives for reuse or disposal in accordance with federal regulatory requirements and prior discussions between CCH, EPA Region 9, and DOH. Current and future construction and remediation activities will be required to abide by this plan.

PCB contaminated soil was detected within the Headworks and UV Disinfection project areas. A few hot spot areas were identified and remediated in accordance with TSCA. A Notification Report detailing the remedial procedures for the hot spot remediation was submitted and approved by EPA Region 9. The hot spot remediation was completed in accordance with this Notification Report.

The remaining soils within the construction project areas after remediation do not contain excessive concentrations of PCBs, and may be divided into two categories:

- PCB-containing soil – Soil excavated from above the groundwater table with PCB concentrations less than 50 ppm. PCB-containing soil may potentially be reused on-site, reused off-site with DOH approval, disposed at a municipal solid waste landfill, disposed at a TSCA-approved landfill, treated by solvent extraction, or treated by thermal desorption.
- Clean soil – Soil from below the groundwater table (0 MSL). Clean soil may be reused on-site or reused off-site with no restrictions.

The advantages and disadvantages, implementability, and risks along with relative costs, of each disposition option for PCB-containing soil were identified in Table 2-1.

Based on this comparison, on-site re-use is considered to be the most feasible and cost effective option. However, if future development of the site will prohibit on-site re-use, off-site re-use would be the next most feasible option. The adjacent State Department of Land and Natural Resources property may be an ideal off-site re-use site as transportation costs would be minimized and the area is zoned for industrial use.

If an off-site re-use location cannot be identified, of the remaining four options, disposal at an on-island landfill would be the quickest and potentially most economical alternative to re-use. Disposal

at an on-island municipal solid waste landfill is known to be technically feasible and does not carry the risk associated with the removal effectiveness of the solvent extraction and thermal desorption technologies. However, this preferred alternative is contingent on the available capacity of the landfills at the time of disposal.

If acceptance cannot be obtained at a local landfill due to the large quantity of soil, solvent extraction may be the next feasible option due to air permitting concerns associated with the thermal desorption technology (if air permitting does not become an issue, then thermal desorption would be the next feasible option). To pursue this option, a treatability study and pilot-scale test should be performed to determine the potential effectiveness of the technology with the site-specific soils. Assuming that the treatability study and pilot-scale testing determines that the technology is effective, solvent extraction offers the potential to remove all detectible traces of PCBs and, therefore, eliminate re-use restrictions on the soil.

If the treatability study or pilot-scale testing determines that solvent extraction is not effective, thermal desorption would be the next feasible option. To pursue this option, a treatability study and pilot-scale test should be performed to determine the potential effectiveness of the technology with the site-specific soils. Assuming that the treatability study and pilot-scale testing determines that the technology is effective, thermal desorption offers the potential to remove all detectible traces of PCBs and, therefore, eliminate re-use restrictions on the soil.

If the treatability study or pilot-scale testing of either solvent extraction or thermal desorption determines that the technologies are not effective, or if time to complete implementation is a critical factor and on-island disposal is not an available alternative due to capacity concerns, disposal at an off-island landfill would be the quickest alternative, albeit the most expensive alternative. Off-island disposal at a TSCA approved landfill is technically feasible and should not have capacity issues.

Section 4

Interim Measures

The Headworks and UV Disinfection construction projects are projected to be completed within two years. Due to space requirements for construction staging and vehicular access, reuse of excavated soil on-site will need to be completed after completion of construction. In addition, if off-site reuse is explored on the adjacent DLNR parcel, a few months will be required to obtain necessary approvals and complete construction plans and specifications. Therefore, excavated soil will be temporarily stockpiled both on-site and off-site at the adjacent DLNR parcel in the interim.

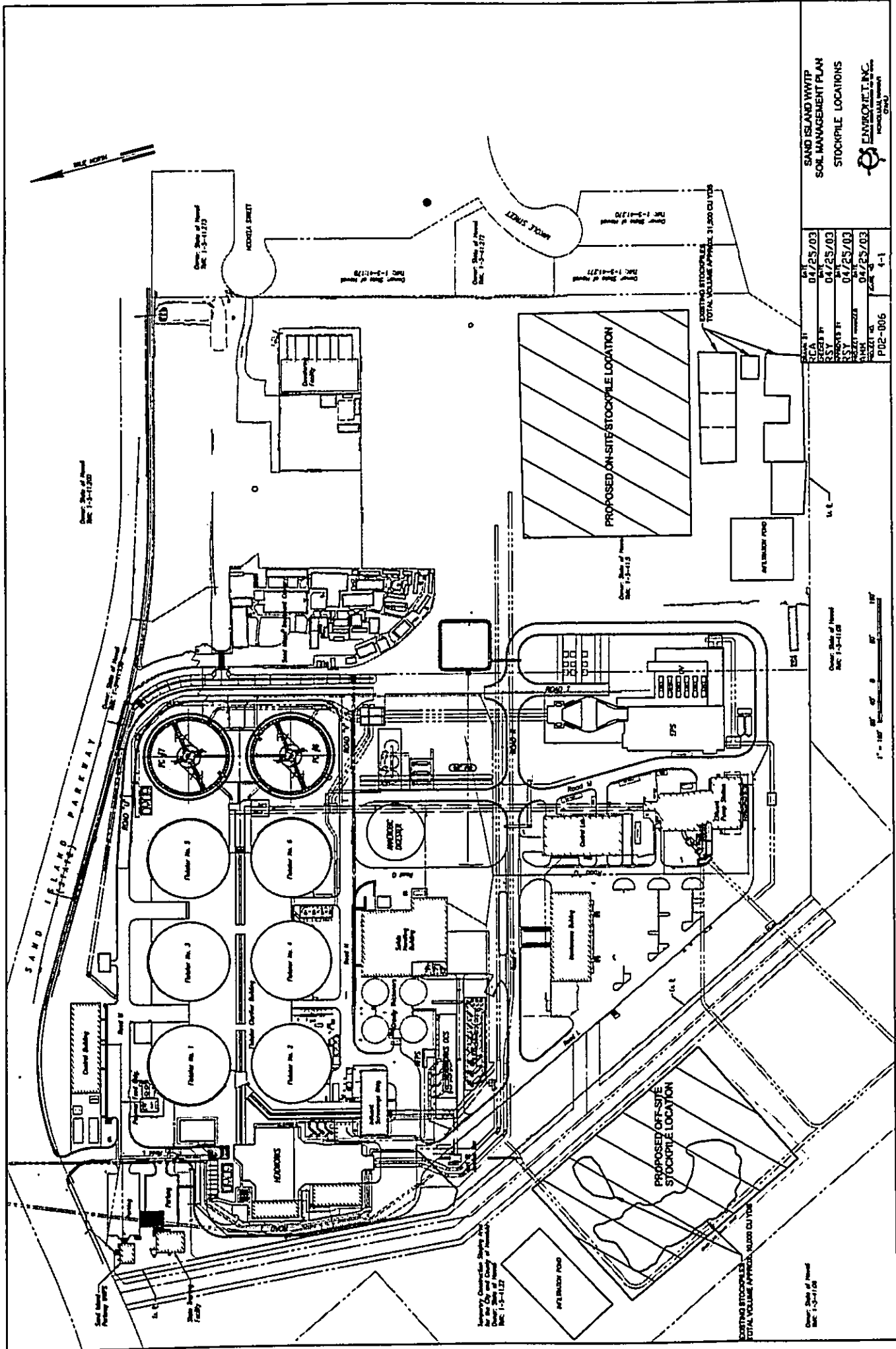
4.1 Soil Stockpiling

Presently, there is approximately 35,000 cubic yards of soil stockpiled both on-site and off-site. Approximately 25,000 cubic yards of soil from the UV Disinfection Project is stored in the southeast corner of the parcel (Figure 4-1). Approximately 10,000 cubic yards of soil from the Headworks Phase 1 Project is stored on the adjacent DLNR parcel. Soils from these stockpiles have been sampled and were found to contain low levels of PCBs (less than 15 ppm) (EI 2002c).

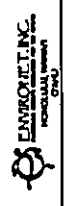
The Headworks Phase 2 project will require excavation of an additional 45,000 cubic yards of soil containing low levels of PCBs above the groundwater table. In addition, approximately 20,000 cubic yards of clean soil from beneath the groundwater table will be excavated. Jet grouting activities may also generate 5,000 cubic yards of jet grout spoils. This additional soil and jet grout spoils will be stockpiled both on-site and off-site within the areas shown on Figure 4-1. The clean soil beneath the groundwater table will be segregated and stockpiled separate from the low level PCB contaminated soil. The CCH's preference is to stockpile the clean soil on the adjacent DLNR parcel.

4.2 Stockpile Engineering Controls

Engineering controls such as hydroseeding, dust screens, and silt fences will be utilized in order to minimize fugitive dust and prevent erosion of stockpiled soil off-site. Presently, erosion and dust control measures have been completed for the existing stockpiles located in the southeast corner of the parcel. Engineering controls have not been implemented on the stockpiles located on the adjacent DLNR parcel because the stockpiles are active. These stockpiles are currently being screened and re-used as backfill for the new Headworks building.



SAND ISLAND WWTTP
 SOIL MANAGEMENT PLAN
 STOCKPILE LOCATIONS



DATE	04/25/03	BY	1-1
SCALE	AS SHOWN	DATE	04/25/03
PROJECT	SAND ISLAND WWTTP	DATE	04/25/03
PROJECT NO.	PUE-006	DATE	04/25/03

Scale: 1" = 100'

DATE: 04/25/03
 SHEET: 1-1

Engineering controls will be utilized on all future soil stockpiles created and appropriate stockpiling permits will be obtained from the CCH Department of Planning and Permitting (DPP). A copy of the stockpile erosion control plan will be submitted to DOH for review and approval. Periodic inspection and maintenance of the stockpiles will be conducted to ensure that the control measures are in-place and working. A stockpile inspection and maintenance plan will be submitted to DOH for review and approval.

4.3 Future Considerations

After construction is completed, one or more of the disposition options will be implemented. An addendum plan detailing the final disposition of the stockpiled soil will be submitted to DOH for approval at that time. If reuse on-site or off-site at the adjacent DLNR parcel is utilized, then a long term maintenance plan will also be submitted. The long term maintenance plan will address: inspection and maintenance of landscaping to prevent erosion and minimize dust; and handling and disposal of low level PCB contaminated soils during future construction projects located within the reuse area.

Any future construction projects within the WWTP site will need to address PCB contamination concerns. Future construction projects will need to follow the steps below.

1. Based on previous sampling results, determine if PCB contamination is present within the construction project area. If PCBs are not detected within the area, then any excavated soil within the area may be reused on-site or off-site without restrictions.
2. Depending on the PCB levels detected, select an appropriate disposition option.
3. Prepare an addendum plan for the handling and disposition of any excavated soil. The addendum should be submitted to DOH for review and approval.

Section 5

References

- Environet, Inc., 2002a, *Environmental Site Investigation, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction August 2002.
- Environet, Inc., 2002b, *Letter Report, Environmental Site Investigation Follow-On PCB Sampling, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction August 2002.
- Environet, Inc., 2002c, *Letter Report, Soil Stockpile Sampling and Analysis, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for Brown and Caldwell and the City and County of Honolulu, Department of Design and Construction. August 2002.
- Environet, Inc., 2002d, *Toxic Substances Control Act Notification Report, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction September 2002.
- Environet, Inc., 2002e, *Final Letter Report 96" Primary Effluent Pipeline, Effluent Pump Station Wet Wells, and 84" – Final Effluent Pipeline Sampling, and Analysis at the Ultraviolet Disinfection Project Site, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for Brown and Caldwell and the City and County of Honolulu. Department of Design and Construction. September 2002.
- Environet, Inc., 2002f, *Contaminated Soil Review Report, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction October 2002.
- Environet, Inc., 2003a, *Letter Report, Environmental Site Investigation, Proposed New Pond and Injection Well Location, PCB Sampling, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction 2003.
- Environet, Inc., 2003b, *Environmental Site Investigation, Additional Sampling Investigation Report, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M.

Towill Corporation and the City and County of Honolulu, Department of Design and Construction February 2003.

Environet, Inc., 2003c, *Final Human Health Risk Assessment, Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii*. Prepared for R.M. Towill Corporation and the City and County of Honolulu, Department of Design and Construction August 2003.

LFR Levine-Fricke, 2001a, *Phase I Environmental Site Assessment, HECO Mokuone Substation, Honolulu, Hawaii*, June 2001.

LFR Levine-Fricke, 2001b, *Phase II Environmental Site Assessment, HECO Mokuone Substation, Honolulu, Hawaii*, November 2001.

Professional Services Industries 2002. *Limited Soil Assessment for PCB Contamination Report, Sand Island Waste Water Treatment Plant (WWTP), Sand Island, Honolulu, Hawaii*, September 2002.

Professional Services Industries 2003. *Sand Island Waste Water Treatment Plant PCB Hot Spot Removal Excavation and Clearance Testing, Sand Island, Honolulu, Hawaii*, March 2003.

Wentworth, C.K. 1951. *Geology and Groundwater Resources of the Honolulu-Pearl Harbor Area, Oahu, Hawaii*. Report prepared by the Board of Water Supply, City and County of Honolulu, Honolulu, Hawaii.

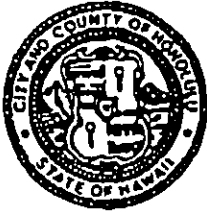
Appendix A
EPA Communications

Nov. 3. 2003 2:57PM

No. 5265 P. 2/4

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.cc.honolulu.hi.us

JEREMY HARRIS
MAYOR



TIMOTHY E. STEINBERGER, P.E.
DIRECTOR

WW.PD 03-251

October 29, 2003

Mr. Clarence Callahan, Ph.D.—
Ecological Risk Assessor
Office of Hazard Evaluation & Emergency Response
Hawaii State Department of Health
919 Ala Moana Boulevard, Room 206
Honolulu, Hawaii 96814

Dear Mr. Callahan:

Subject: Reuse of PCB Contaminated Soil
Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii

Based on the review of the Draft Soil Management Plan (SMP) for the Sand Island Wastewater Treatment Plant (WWTP) site, the only concern that the Hawaii State Department of Health (HDOH) had with off-site reuse of soil as proposed was to check with the EPA Region 9 TSCA Branch to verify that the proposed reuse was acceptable under the TSCA regulations. Therefore, we initiated communication with EPA Region 9 and received a determination. According to the letter from EPA Region 9 dated October 3, 2003, soils at the Sand Island WWTP site with less than 50 ppm PCBs are not regulated under TSCA. Since all soils with 50 ppm PCBs have been remediated at the site, the remaining soils proposed for reuse are not regulated under TSCA. EPA Region 9 did recommend that we consult with your office for the reuse of soil.

Based on our previous communications, it is our understanding that we are in agreement that soils beneath the groundwater table (0 feet mean sea level) that were found not to contain any detectable levels of PCBs may be disposed/reused off-site without restrictions. The remaining soils above the groundwater table with detectable levels of PCBs will need to be managed according to the SMP. The remaining soils above the groundwater table have PCB concentrations that are less than 25 ppm. A Human Health Risk Assessment that was completed for the WWTP site and approved by HDOH determined that the 95% UCL for the remaining soils after TSCA cleanup is less than 1 ppm.

Nov. 3. 2003 2:57PM

No. 5265 P. 3/4

Mr. Clarence Callahan, Ph.D.

- 2 -

October 29, 2003

The preferred alternative selected in the SMP is on-site reuse. The second preferred alternative is off-site reuse on an adjacent parcel. Due to space limitations, we would like to have the option to use a combination of these two reuse alternatives. The adjacent parcel we are interested in using is currently owned by the Hawaii State Department of Land and Natural Resources (DLNR) (see attached figure). This parcel is currently zoned for industrial use. DLNR has indicated that they may be interested in fill from the SIWWTP.

Irrespective of whether an agreement can be reached with DLNR for final placement, we would like to temporarily stockpile excavated soil on this adjacent parcel for the next two years until construction is completed. The construction staging areas available on the WWTP site are limited and we would prefer if we could temporarily stockpile the excess soil on this adjacent site to free up working space. Proper dust, erosion controls, and soil liner for the stockpiles will be used and maintained, if this option is available. The stockpiled soil will be removed pending completion of the construction projects and the final disposition selected. A plan for the final disposition of soil will be submitted at a later date.

Based on the non-TSCA determination and the Human Health Risk Assessment, we would like your concurrence to proceed with: (1) excavation and disposal/reuse of soil beneath the groundwater table without restrictions; (2) stockpiling of soils above the groundwater table with low levels of PCBs (95% UCL < 1 ppm) on the adjacent DLNR parcel; and (3) final disposition of soils with low levels of PCBs (95% UCL < 1 ppm) on the adjacent DLNR parcel, if desired.

Thank you for your assistance in this matter. Please contact Jann Dacanay at 527-5152 if you have any questions.

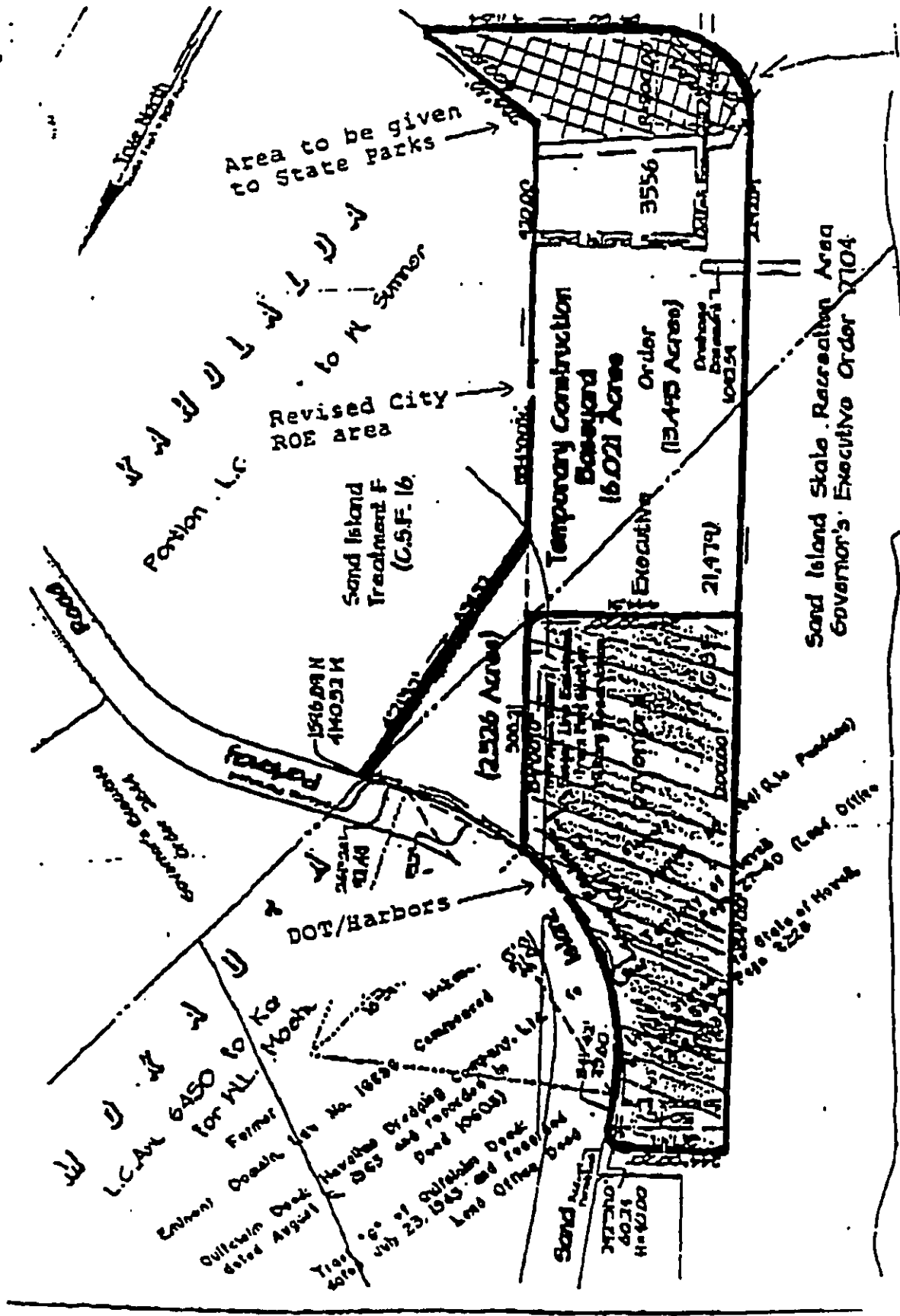
Very truly yours,



TIMOTHY E. STEIMBERGER, P.E.
Director

Attachment

cc: ENV
R.M. Towill



Notes:

Ashtech and coordinates are referred to Government Survey Triangulation Station 715E, North Base 'A'.

- - - - Perimeter Access Permitted
- - - - Denotes No Vehicle Access Permitted

HTC Ref. No. 1-10493-0-5
H, Baseyard/Dmg

Boundary follows along Highwater Mark of Seachore

Temporary Construction Base
At Sand Island, Honolulu, Oahu,
Tax Map Key: 1-3-41: par. 22

[Signature] R.M. TOMMILL CORPORATION

[Signature]

OCT 15 2003

Post-It® Fax Note	7671	Date	10/21/03	# of pages	2
To	Collins Lam	From	Jann Dacaney		
Co./Dept.		Co.			
Phone #		Phone #	527-5152		
Fax #	842-1937	Fax #			

WW.PD 03-232

October 16, 2003

Ms. Paula Bisson
 Manager, Toxics Section
 U.S. Environmental Protection Agency (EPA) Region 9
 PCB Program
 75 Hawthorne Street
 San Francisco, CA 94105

Dear Ms. Bisson:

Subject: EPA Ruling on TSCA Requirements for PCB Contaminated Soil at Sand Island Wastewater Treatment Plant, Honolulu, Oahu, Hawaii

We have received your letter entitled "TSCA Requirements for PCB Contaminated Soil at Sand Island Wastewater Treatment Plant," dated October 3 2003. This letter is to confirm and clarify the items suggested in your letter.

Item 1: With regards to Item 1 of your letter, we concur that the Sand Island Wastewater Treatment Plant was built on fill that was put in place prior to 1978. Based on aerial photos, the Sand Island WWTP major construction fill was complete in the year 1978.

Item 2: To the best of our knowledge, no PCBs have been used on site in a manner other than in a totally enclosed manner. We do not know of or have any records of leaking or buried transformers being present on site.

Item 3: We concur that the site contained a few samples with PCB concentrations greater than 50 ppm. However, all soil with concentrations greater than 25 ppm PCB have been remediated and sent to a TSCA approved facility. We concur that many of the remaining samples show PCB concentrations above 1 ppm.

Item 4: There has been no recorded spill at the site since 1978.

It is our understanding that after discussion with our environmental consultant, the EPA has decided that the remaining soil at the site with PCB concentrations below 50 parts per million will not be regulated under TSCA.

Ms. Paula Bisson

-2-

October 16, 2003

As suggested by your office, the City and County of Honolulu will be contacting the State of Hawaii Department of Health for all future PCB contamination issue for this site. Thank you for your assistance in resolving this matter.

Please contact Mr. Dennis Kaneshiro at 527-5848 if you have any questions.

Very truly yours,



FOR TIMOTHY E. STEINBERGER, P.E.
Director

cc: ENV
R.M. Towill

JD:ntu

05
9
2
/



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Mr. Timothy E. Steinberger
Director
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

Re: TSCA Requirements for PCB Contaminated Soil at Sand Island Waste
Water Treatment Plant

Dear Mr. Steinberger:

This is to confirm the telephone conversation of October 2, 2003 between Max Weintraub of our office and Ryan Yamauchi of Environet, Inc., and the correspondence from Mr. Yamauchi on September 29, 2003 regarding reuse of low level PCB contaminated soil.

Ordinarily, the PCBs such as those found at Sand Island Waste Water Treatment Plant (WWTP) are regulated under the Toxic Substances Control Act. According to Mr. Yamauchi, however, the following applies to the PCBs at WWTP:

- 1) The plant was built on fill put in place prior to 1978.
- 2) No equipment, transformers, or capacitors known or assumed under 40 CFR 761.20(a) to have a PCB concentration \geq 50 ppm have been recorded at the site.
- 3) While there are many samples with levels $>$ 1ppm at the site, there are few above 50 ppm.
- 4) No spills that could have diluted PCBs under 40 CFR 761.1(b)(5) have been recorded at the site since 1978.

Mr. Yamauchi concludes that the PCB contamination present at WWTP is a product of activity that took place prior to 1978.

PCB remediation waste subject to TSCA cleanup requirements is defined at 40 CFR 761.3 as including, "...materials disposed of prior to April 18, 1978, that are currently at concentrations \geq 50 ppm PCBs..." Based on this language, and the information provided by Mr. Yamauchi, the

PCB contamination at <50 ppm at WWTP does not appear to be regulated under TSCA. Such PCBs, however, may be considered hazardous waste under RCRA. We suggest you consult with your local State hazardous waste program for clarification.

If you have any questions about this letter, please contact Yosh Tokiwa (415-947-4172) or Max Weintraub (415-947-4163) of my staff.

Sincerely,



Paula Bisson
Manager
Toxics Section

c.c. Laura Young, HDOH



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION IX
 75 Hawthorne Street
 San Francisco, CA 94105

SEP 23 2003

Mr. Timothy E. Steinberger
 Director
 City and County of Honolulu
 650 South King Street, 11th Floor
 Honolulu, HI 96813

Re: Soil management at the Sand Island Waste Water Treatment Plant

Dear Mr. Steinberger:

Your June 16, 2003 letter seeks EPA approval of the Draft Soil Management Plan ("Plan") for the Sand Island Waste Water Treatment Plant (WWTP) facility. The Plan includes temporary off-site storage of PCB contaminated soil for later reuse as backfill. The August 25, 2003 e-mail from Mr. Ryan Yamauchi of Environet, Inc. seeks EPA approval to limit the TSCA designation of "low occupancy area" to the 1,350 square feet from which soils containing > 25 ppm PCBs had been removed at the WWTP facility. EPA denies these requests for approval.

1. Temporary Storage: The excavation required to expand the WWTP facility is expected to generate in excess of 60,000 cubic yards of soil. Due to space limitations, you seek EPA approval to temporarily store a portion or all of this soil for up to two years on an adjacent site currently being used as a construction staging area. Per 40 CFR 761.3, a "cleanup site" includes "all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of remediation waste, regardless of whether the site was intended for management of waste." Thus, it is possible to move and store soil contaminated with PCBs regulated under TSCA within the cleanup site.

The regulations for on-site storage of PCB remediation waste at 40 CFR 761.65(c)(9) limit the time of storage to 180 days and detail the design requirements. Note that it is critical that the on-site storage be performed to ensure no mixing with soil which is not contaminated. Such dilution, in accordance with 40 CFR 761.1(b)(5), would result in the entire quantity of soil becoming regulated by TSCA. In order to exceed the 180 day storage period allowed under 40 CFR 761.65(c)(9), please apply for a risk based EPA approval under § 761.61(c).

2. Soil Management Plan: According to your Plan, you may not be able to reuse all of the excavated soil on the WWTP site. Thus, you seek approval to place the surplus remediated soil on an adjacent property that would be subject to the appropriate occupancy restrictions. The site cleanup provisions at § 761.61(a)(5)(i) allow bulk PCB remediation waste to be reused on-site, decontaminated, or disposed of, in accordance with TSCA. Please specify which approach you intend to follow.

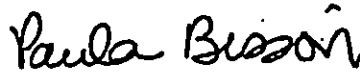
OPTIONAL FORM 99 (7-99)		FAX TRANSMITTAL		# of pages
To	Ryan Yamauchi	From	Max Weinstock	2
Dep./Agency		Phone #		
Fax #		Fax #		

3. Limiting TSCA Designation of "Low Occupancy Area": In 3.2.1 and 4.3 of your September 2002 "Notification Report" to EPA Region IX as well as your Plan, you propose to remove all soils containing > 25 ppm PCBs and impose deed restrictions in order to meet the low occupancy requirements of § 761.61(a)(4)(i)(B). Your August 25, 2003 e-mail also seeks approval to limit the low occupancy area designation to the 1,350 square foot "hot spot" area. However, the Plan does not indicate what steps would be taken to ensure soils with PCB concentrations >1 ppm and ≤ 25 ppm from the "hot spot" areas would not be mixed with soils from any other part of the site. Please explain how such mixing will be prevented.

Also, note that areas containing PCB concentrations >1 ppm and ≤ 10 ppm must be considered "low occupancy" until the requirements of 40 CFR 761.61(a)(4)(i)(A) and 40 CFR 761.61(a)(8) are satisfied.

For questions regarding this letter, please contact Yosh Tokiwa at (415) 947-4172 or Max Weintraub at (415) 947-4163.

Sincerely,



Paula Bisson
Manager, Toxics Office
Cross Media Division

cc: Laura Young, HDOH

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

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

In reply, please refer to:
File: 03-111

May 13, 2003

Timothy E. Steinberger
Acting Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Attention: Dennis Kaneshiro

Dear Mr. Steinberger:

The Department of Health (DOH) has reviewed the Draft Soil Management Plan for the Sand Island Wastewater Treatment Plant (WWTP) dated March 2003. Six disposition options were discussed for soil containing PCBs below 25 ppm, of the six of options the re-use on site option was considered to be the most feasible and cost effective option. The DOH agrees that this is the most feasible option.

If the first option could not be fully implemented then the second option of re-use off site would be the second most feasible option. However the option of re-use off site does not appear be in accordance with CFR 40 761(a)(4). The cleanup level for bulk PCB remediation waste in low occupancy areas is less than 25 ppm. Cleanup levels are based on the kind of material and the potential exposure to PCBs left after cleanup is completed. The cleanup level is specific to the release area and should not be considered for transport off-site except for disposal at a municipal solid waste landfill or TSCA-approved landfill, the third and sixth alternative discussed in your Plan.

A combination of the on-site reuse and municipal solid waste landfill may be the most viable options to consider for this site. If you would like to discuss these options further or if you have any questions, I can be contacted at 586-7575.

Sincerely,

A handwritten signature in cursive script that reads "Laura Young".

Laura Young
Remedial Project Manager

Appendix D

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Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

APPENDIX D

REMEDIAL DESIGN REPORT, SOIL MANAGEMENT PROJECT, SAND ISLAND
WASTWATER TREATMETN PLANT, SEPTEMBER 2005

Draft Report

*Remedial Design Report
Soil Management Project
Sand Island Wastewater Treatment Plant
Honolulu, Hawai'i*

Prepared for:

City and County of Honolulu
Department of Design and Construction
650 S. King Street
Honolulu, HI 96813



Prepared by:

 **Environet, Inc.**
PRESERVING EARTH'S RESOURCES FOR THE FUTURE

September 2005



**City and County of Honolulu
Department of Design and Construction**

**Remedial Design Report
Soil Management Project
Sand Island Wastewater Treatment Plant
Honolulu, Hawai'i
Contract No. F33955**

**Prepared for: City and County of Honolulu
Department of Design and Construction
650 S. King Street
Honolulu, HI 96813**

**Prepared by: Environet Inc., Honolulu, Hawai'i
2850 Pa'a St., Suite 212
Honolulu, HI 96819**

September 2005

Executive Summary

This Remedial Design (RD) report presents the remedial design for the reuse of soil containing low level polychlorinated biphenyl (PCB) contamination at the Sand Island Wastewater Treatment Plant (WWTP) in Honolulu, Hawai'i. Previous investigations at the Sand Island WWTP indicated the presence of PCB contaminated soils throughout the WWTP site. Several soil hot spots containing PCB concentrations above the Toxic Substances Control Act (TSCA) action levels were discovered and removed from the WWTP site. The remaining low level PCB contamination on-site was found to be within acceptable levels for human health risk and did not require remediation. Two construction improvement projects for the WWTP required the excavation of soil containing low level PCB contamination for the construction of new structures and utilities. This excavated soil is temporarily stockpiled within the southeastern portion of the WWTP site and has a volume of approximately 77,000 cubic yards.

Based on the Human Health Risk Assessment (HHRA) and the Soil Management Plan (SMP) completed for the WWTP site, the State of Hawai'i Department of Health has approved the reuse of the stockpiled soil on-site. The reuse of the soil will occur within an approximate 9-acre area in the southeastern corner of the WWTP site. The reuse will consist of re-grading the stockpile over the entire 9-acres, which would effectively raise the ground surface in the area by 4 to 10 feet in height. Engineering controls will be utilized to prevent migration of contaminants through erosion and dust generation. The side slopes of the raised area will be stabilized by a concrete wall. The surface of the reuse area will be finished with a combination of both asphalt and gravel. Construction plans and specifications that present the details of the design are being prepared separately. A Long Term Maintenance and Monitoring plan will be prepared after completion of construction to address the long term maintenance and management of the soil reuse area. The plan will address issues such as routine inspections, maintenance repairs, and management decisions regarding future construction within the area.

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List of Acronyms

APSC	Army Post and Service Command
bgs	below ground surface
CCH	City and County of Honolulu
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
DDC	Department of Design and Construction
DLNR	Department of Land and Natural Resources
DOH	Department of Health
EAL	Environmental Action Level
EEI	Ecology and Environment, Inc.
EI	Environet, Incorporated
EIA	Eastern Investigation Area
EPA	Environmental Protection Agency
EPC	Exposure Point Concentration
ESA	Environmental Site Assessment
FL	Fill Land
HASITC	Hawaii Alcoholism Sand Island Treatment Center
HEER	Hazard Evaluation and Emergency Response
HECO	Hawaiian Electric Company
HHRA	Human Health Risk Assessment
JaC	Jaucas Sand
mgd	million gallons per day
mg/kg	milligrams per kilogram
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated Biphenyl
ppm	parts per million
PRG	Preliminary Remediation Goals
PSI	Professional Services, Inc.
RD	Remedial Design
REC	Recognized Environmental Condition
RME	Reasonable Maximum Exposure
RMTC	R.M. Towill Corporation
SI	Site Investigation
SMP	Soil Management Plan
SVOC	Semi-Volatile Organic Compound
TMK	Tax Map Key
TPH	Total Petroleum Hydrocarbon
TSCA	Toxic Substances Control Act
USDA	United States Department of Agriculture
USGS	United States Geological Service
UV	Ultraviolet
VOC	Volatile Organic Compound
WIA	Western Investigation Area
WWTP	Wastewater Treatment Plant

Section 1 Introduction

This Remedial Design (RD) report presents the remedial design for the reuse of soil containing low level polychlorinated biphenyl (PCB) contamination at the Sand Island Wastewater Treatment Plant (WWTP) in Honolulu, Hawai'i (Figure 1-1). Previous investigations conducted at the Sand Island WWTP indicated the presence of PCB contaminated soils throughout the WWTP site. Several soil hot spots containing PCB concentrations above Toxic Substances Control Act (TSCA) action levels were discovered and removed from the WWTP site. The remaining low level PCB contamination on-site was found to be within acceptable levels for human health risk and did not require remediation. Two construction projects (Headworks and Ultraviolet [UV] Disinfection) required the excavation of soil containing low level PCB contamination for the construction of new structures and utilities. This excavated soil (approximately 77,000 cubic yards) is temporarily stockpiled within the southeastern portion of the WWTP site. Based on the Human Health Risk Assessment and the Soil Management Plan completed for the WWTP site, the State of Hawaii Department of Health (DOH) has approved the reuse of this stockpiled soil on-site. This RD report presents the design for the reuse of this soil on-site. This RD was conducted by Environet, Inc. (EI) for the City and County of Honolulu (CCH) Department of Design and Construction (DDC), under Contract No. F33955.

1.1 Purpose and Scope

The purpose of this RD is to present the design for the reuse of the stockpiled soil containing low level PCB contamination at the Sand Island WWTP site. The design addresses the reuse location, placement methods, drainage, and engineering controls to prevent dust generation and erosion. This RD report presents the general overview and background for the remedial design. Detailed construction plans and specifications will be prepared separately for the construction work.

Section 2 Site Description and Background

This section presents background information related to the WWTP site and results of previous investigations conducted at and adjacent to the Sand Island WWTP.

2.1 Site Location and Description

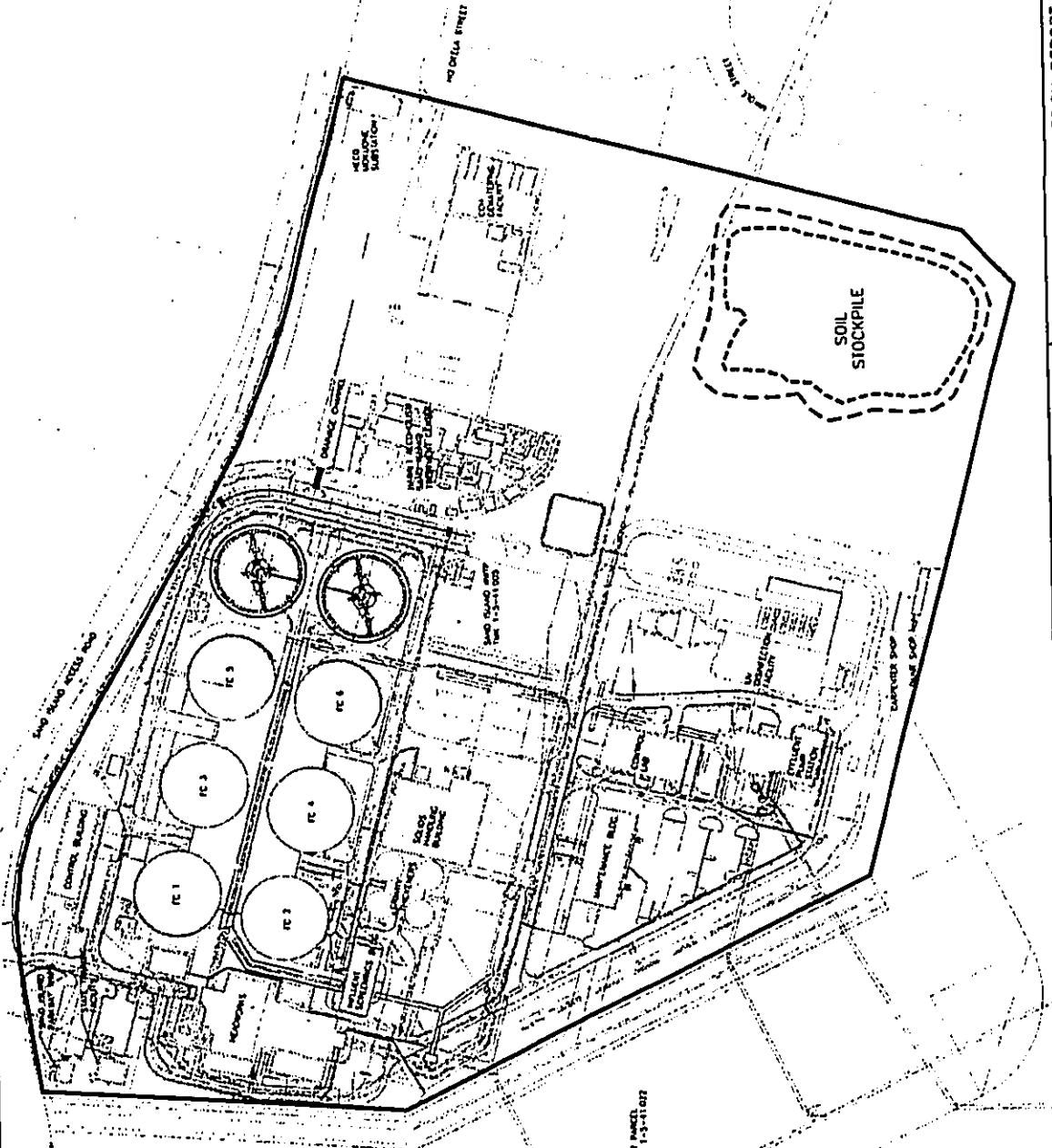
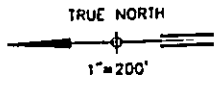
The Sand Island WWTP is located at 1350 Sand Island Parkway, which is located on Sand Island off the south-central coast of O'ahu in Honolulu, Hawai'i (Figure 1-1). Topographic coverage for the subject site is provided in the design drawings by R.M. Towill Corporation (RMTC).

The Sand Island WWTP occupies a portion of Tax Map Key (TMK) 1-5-041: 005, an approximate 50 acre land parcel owned by the State of Hawai'i and leased to the CCH. Also located on Parcel 05 are four facilities that are not included in the WWTP facility property: (1) Building 3 – State Training Center – located within the WWTP complex; (2) the Hawai'i Alcoholism Center (also known as the Sand Island Treatment Center [HASITC]) located east of the WWTP; (3) a CCH Highways Division dewatering facility located east of the WWTP; and (4) the Hawaiian Electric Company (HECO) Mokuone Substation (Figure 2-1).

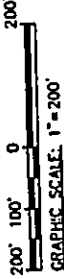
The Sand Island WWTP is an 82 million gallon per day (mgd) advanced primary treatment facility serving metropolitan Honolulu. The facility is owned and operated by the CCH. The plant has been in operation since 1979 and currently treats an average daily wastewater flow of 74 mgd. The liquid stream process consists of screenings, advanced primary treatment units, and chlorination. The solids handling stream includes grit removal, gravity thickening, thermal conditioning, and dewatering. Treated effluent from the WWTP is discharged through the Sand Island Ocean Outfall. Existing structures at the site include the following:

- Building 1 – Control/Administration Building;
- Building 2 – Main Electric Vault;
- Building 3 – Sand Island Parkway Pump Station;
- Building 3A – State Training Center (not a CCH facility);
- Building 4 – Flotation/Clarifiers;
- Building 5 – (Headworks) Influent Screening and Grit Facility;
- Building 6 – Gravity Thickeners and Solids Handling Building;
- Building 7 – Former Ground Maintenance Building – no longer present;
- Building 8 – Maintenance and Supply;
- Building 9 – Control Laboratory/Maintenance Building;
- Building 10 – Effluent Pump Station;
- Building 11 – Carpenter Shop;
- Building 12 – Painter Shop.

The site is undergoing extensive improvements including the construction of new primary clarifiers, a new ultraviolet disinfection unit, a new anaerobic digester, and ancillary structures.



- LEGEND:**
- FC FLOTATION CLARIFIER
 - SAND ISLAND WWTP PROPERTY BOUNDARY
 - - - BOUNDARY OF BASE OF STOCKPILE
 - BOUNDARY OF TOP OF STOCKPILE



REMEDIAL DESIGN REPORT
SAND ISLAND WWTP SITE LAYOUT
SAND ISLAND WWTP, O'AHU, HAWAII

FIGURE
2-1



2.2 Climate

The climate in the region of Sand Island is warm and relatively dry. Data from the nearby Honolulu International Airport gauging station shows an average temperature of 70.1°F during the winter months and 84.0°F during the summer months, with temperature extremes ranging from 52°F to 95°F throughout the year. The average annual precipitation at the Honolulu International Airport is approximately 20.92 inches. The hottest month is August with a 30 year monthly average of 81.4°F, while the coolest month is January averaging 72.9°F. The wettest month is March averaging 17.07 inches, while the driest month is September averaging 1.49 inches (The State of Hawai'i Data Book, 2001).

Northeasterly trade winds prevail over O'ahu approximately 80 percent of the time, with average wind speeds ranging from 10 to 15 miles per hour. The trade winds blow most strongly and consistently from April through November. Southerly or "Kona" winds occur roughly less than half the time during the months of December through March.

The northeasterly trade winds carry a large quantity of moisture from the Pacific Ocean to the island. Orographic lifting as the trade winds encounter the Ko'olau mountain range causes the air temperature to drop and air moisture to precipitate. The mean annual precipitation at the upper reaches of the Ko'olau Mountains is approximately 150 inches, and the windward side of the island generally experiences more rainfall than the leeward side. The orographic effect also tends to produce most of the precipitation in the form of passing showers in the evenings and early mornings.

During Kona wind conditions, the relative humidity tends to rise, and the southern side of the island may experience periods of intense rainfall. Persistent Kona winds can also carry volcanic gases from the active volcano on the Big Island to O'ahu, which can cause a haze, or volcanic fog to form over the island.

2.3 Regional Geology and Hydrogeology

The island of O'ahu is comprised of the remnants of two volcanoes: Ko'olau and Wai'anae. Wai'anae Volcano is the older of the two and forms a range roughly 22 miles long, oriented in two principal directions trending towards the northeast and to the south and aligned with the two principal rift zones of the volcano. Age dating (Presley, 1994) of Wai'anae lavas indicates that both the main shield building lavas and later volcanic landforms, such as Pu'u Kapolei, erupted over a relatively short time period between 2.9 to 3.3 million years ago. Wai'anae Volcano became extinct before the initiation of volcanic activity on Ko'olau Volcano to the east, as evidenced in the field by exposures that show Ko'olau lavas overlapping the eroded, soil-covered Wai'anae lavas.

The principal shield building lavas of Ko'olau Volcano erupted roughly 1.8 to 2.3 million years ago, forming a 37-mile long range of mountains trending in a northeasterly direction, and extending parallel to the two principal rift zones. Subsequent post-erosional volcanism on Ko'olau Volcano over roughly the last million years has produced some of the well-known landforms on O'ahu, including Diamond Head, Punchbowl, and Koko Head. Both mountain ranges have been extensively eroded, forming the Pali on the northeastern side of the Ko'olau range and huge valleys on southwestern side of the Wai'anae range. The origin of this characteristic geomorphology is currently believed to have largely formed as a result of large-scale landslide events, which removed

large sections of the original volcanic edifice. Stream erosion along the faults and dikes of the original caldera of the volcano also likely contributed to production of the steep lava flows.

The primary modes of freshwater occurrence on O'ahu are as a basal lens of fresh groundwater floating on saltwater, as dike-impounded groundwater, and as perched groundwater. The majority of potable groundwater on O'ahu is found in thick basal lens that extends inland from the coastal sedimentary deposits that fringe the majority of O'ahu's shoreline region. On O'ahu, basal groundwater occurs both in volcanic-rock aquifers and in aquifers in the sedimentary deposits under confined and unconfined conditions. The thickness of the freshwater lens depends on recharge, aquifer permeability and the presence or absence of confinement in the shoreward discharge areas. Recharge to a given basal water body may occur by direct infiltration of precipitation or stream flow and by groundwater inflow from upgradient groundwater aquifers. Mean annual pre-development recharge is estimated to have been about 368 million gallons per day and was entirely from rainfall. Groundwater discharge is to streams and by groundwater outflow to adjacent aquifers; withdrawals from wells, shafts, and springs; evapotranspiration; and outflow to the ocean.

2.3.1 Site Geology and Soil

The majority of what is now Sand Island is man-made created from dredge material placed over a reef platform that extended seaward from the approximate seaward boundary of the present island. The reef platform was known as Kahololoa Island. Dredge material was added to the platform in the late 1800s to form Quarantine Island (also known as Rainbow Island and Anuenue Island). Additional dredge material from Honolulu Harbor was used to expand Quarantine Island in the 1930s, and the 1940s to create what is now Sand Island. The northeast portion of the Sand Island WWTP is located on the southwest side of the former Quarantine Island.

Soils at the site are classified as Jaucas sand (JaC) and mixed fill land (FL) by the U.S. Department of Agriculture Soil Conservation Service (USDA, 1972). The Jaucas series consist of excessively drained calcareous soils that developed from wind and water deposited sand derived from coral and sea shells. JaC is pale brown to very pale brown sand mixed with organic matter and alluvium. FL consists of areas filled with materials dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources (USDA, 1972).

2.3.2 Site Hydrogeology

Groundwater at the site consists of two distinct systems, a shallow, perched aquifer and a deeper basal aquifer. The shallow aquifer is unconfined (i.e., not confined by an impermeable layer on top of the aquifer) and occurs at about 3 to 5 feet below ground surface (bgs). This aquifer is classified as a sedimentary aquifer and is hydraulically connected to the ocean, which means that the groundwater elevation is subject to tidal influence. The shallow aquifer is considered non-potable due to its brackish nature. The deep aquifer is classified as a volcanic flank basal, confined aquifer (Mink and Lau, 1990). The depth to the basal aquifer at the site is greater than 1,000 feet below ground surface (Wentworth 1951).

The Underground Injection Control (UIC) line is established by the DOH to determine groundwater utility. The UIC line is used to determine the level of protectiveness afforded an aquifer as reflected by water quality standard criteria. In general, groundwater situated mauka (inland) of the UIC line is considered a potential source of drinking water. Groundwater situated makai (seaward) of the UIC

line is generally considered not to be a potential source of drinking water. The project site lies makai of the UIC line and groundwater beneath the site is thus not considered a potential source of drinking water.

2.3.3 Surface Water

Surface water in the southeastern portion of the WWTP site where the reuse of soil will occur follows the contour of the ground surface and flows in a northwesterly direction into drainage channels along the northeastern portion of the WWTP site. The drainage channels flow in a northerly direction towards Sand Island Access Road and into a drainage channel. There are no surface water bodies located on the WWTP site or within 150 meters of the WWTP site.

2.4 Site History

The majority of what is now Sand Island is man-made created from dredge material placed over a reef platform known as Kahololoa Island. In 1840, William Sumner was granted farmland on the island. The first light house in the Hawaiian Islands was built off the reef of Kahololoa in 1858. In 1869, King Kamehameha III's government leased the island of Kamokuakulikuli, which was a small sand spit on the reef of Kahololoa for use as a quarantine station. By 1885, Kamakuakulikuli Island was titled the "Quarantine Ground." An irregular patch of ground about 2 feet above sea level with several buildings on it, the Quarantine Ground was the designated small pox hospital for Honolulu.

By 1888, the island had grown and was known as Quarantine Island. A portion of what is now the Sand Island WWTP was located on the southwest side of Quarantine Island. A pier and a tramway connected the island to the City of Honolulu, crossing the inner harbor or turning basin, which was partially dry at low tide at that time. A new lighthouse was built on the edge of the island replacing the old one. The U.S. Public Health Service established a marine hospital at Quarantine Island in 1901. The hospital was operated by the U.S. Public Health Service until December 1941 when the U.S. Army took over the quarantine area.

By 1908, the Quarantine Station consisted of two major areas – Quarantine Island and Quarantine Wharf. There were five functional areas: an administration area at the Diamond Head (east) end of the island; a saloon or cabin class passenger area in the middle; a European steerage area; an Oriental area; and an Army tent camp. The cabin class quarters accommodated 75 passengers and contained a kitchen and a dining room. The Oriental barracks could accommodate 600 people and cooking facilities. European steerage passengers could be accommodated in three barracks, each billeting 100 passengers. The camp for troops accommodated 100 raised tent platforms of 14 feet by 15 feet intended for 1,250 troops.

As of 1919, there were 57 structures reported on Quarantine Island. The Diamond Head end of the island contained the executive building, surgeon's quarters, four other quarters, the bath house, hospital and isolation wards. This area was fenced off from the rest of the island. The European steerage quarters were separated from the Oriental steerage quarters by a large open air dining hall. A road lying between what is now Piers 28 and 29 replaced the carriage ford and connected the Diamond Head end of the island with the City of Honolulu.

In 1920, by Executive Order, the land known as Sand Island and Quarantine Island was set aside for military purposes. In 1926, the light house was decommissioned and in 1939 it was demolished. The quarantine station was last used for quarantine purposes in 1927. By 1929, the quarantine station had fallen into a state of disrepair. In 1930, the War Department returned the land known as Sand Island to the Territory of Hawaii under a revocable license.

In 1935, the revetment of the shore of Sand Island and the demolition and removal of existing governmental facilities on Sand Island was completed. In 1939, dredging of the Ke'ehi Lagoon seaplane channel was completed. In 1941, Sand Island was reported as comprising 410 acres (an increase of 110 acres since 1937) with a total of 50 acres useable for building. The U.S. Army reportedly used the island to conduct sea coast artillery firing. Additional dredge spoils were used to raise the elevation of the island in 1941. In November 1941, the military commands in Hawaii were put on an alert status and all vital installations were placed under guard.

On December 7, 1941, there was a 3-inch anti-aircraft gun detachment of the 53rd Coast Artillery Brigade on Sand Island. The Sand Island battery claimed the downing of two Japanese planes during the Japanese attack of Oahu on December 7, 1941. Within a few hours of the attack, all Japanese, Italian, and Germans who had previously been listed as enemy "agents" by Army and Naval intelligence and the Federal Bureau of Intelligence were brought to the Quarantine Station at Sand Island. A total of 482 persons were interned at the Quarantine Station. The detainees were held in a five acre barbed wire enclosed tent camp. During the war years, pill boxes were constructed along the shoreline. In February 1942, the detainees were evacuated from Sand Island and later transported to the mainland. The tent camp was later occupied by civilian employees of the Hawaiian Constructors. During 1942, Sand Island was armed against air and amphibious attack with armaments consisting of 5-inch anti-aircraft guns and a battery of 7-inch guns.

In 1943, the Army Port and Service Command (APSC) headquarters was established on Sand Island and remained there until the end of the war. Their main function was that of an administrative and logistical center. APSC initially occupied the former quarantine camp/internment camp. However, at that time the buildings were in disrepair, sanitation had been neglected, weeds were rank, and open water-filled ditches served as a breeding ground for mosquitoes. The unused barracks were filled with tires and served as supplementary warehouses. In 1943, all logistical installations were concentrated around Quarantine Island. An area north of the large end of the island had been allocated to the Civil Works division of the U.S. Army Corps of Engineers for dredge repair. Two warehouse buildings were erected in this area. Adjacent to and south east of the dredge facilities was an ordnance vehicle assembly area. On the edge of Honolulu Harbor in the northern corner of the ordnance area were three barracks for anti-aircraft personnel. At the western end of Quarantine Island was a tent camp that had been erected to house five Transportation Corps Port Companies. On the south side, just outside of the area of Quarantine Island in the vicinity of the current WWTP site was a 1,925 man tent staging camp.

During 1943, the entrance to Honolulu Harbor had been dredged. Spoils from the dredging were used as fill on Sand Island and a dirt causeway was built connecting Sand Island with Honolulu. In 1944, the Ke'ehi Seaplane Channel dredging was finished. With the completion of the marginal wharves and the seaplane dredging, Sand Island assumed the configuration seen today with one exception -- a land bridge existed between the island and Oahu, just west of the Kapalama Basin.

2.5 Previous Environmental Investigations

Several environmental investigations have been previously conducted at or adjacent to the Sand Island WWTP. The investigations are summarized below:

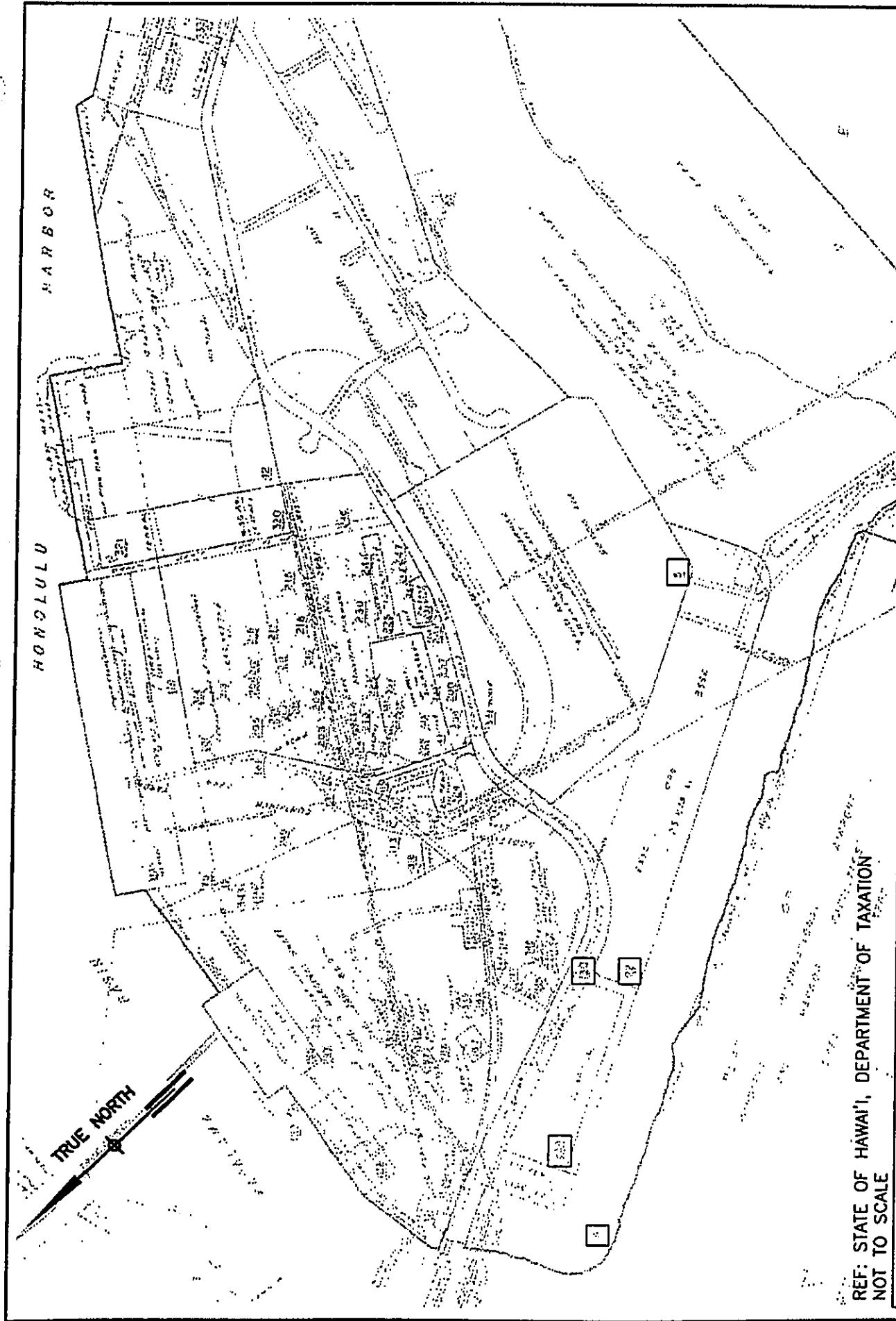
- Report, Preliminary Environmental Site Assessment, Sand Island Corporation Yard and Park, Sand Island, O'ahu, Hawai'i, TMK 1-5-41: Parcels 6, 22, and 130 (Masa Fujioka and Associates, 1993) (Figure 2-2)

In 1992, Towco Enterprises, a vehicle storage and crushing facility, was in operation on the southeast portion of the WWTP in the vicinity of the current stockpiled soil. The Towco facility operated on the site from May 1989 to the summer of 1992. Towco received cars through the CCH's abandoned vehicle program, stripped the vehicles of resalable components, and crushed the vehicles. A DOH Hazard Evaluation and Emergency Response (HEER) report indicated that soil throughout the site was found to contain lead at concentrations of 500 milligrams per kilogram (mg/kg). Following a preliminary assessment, HDOH determined that the likelihood of exposure was low and Towco was granted a "no further action" status under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) on 15 October 1992 based on the following two factors: (1) the site is located in an area of low potential to contaminate drinking water, and (2) the concentrations of lead were below the levels considered to be a threat for an industrial area.

In addition, this report documents the presence of numerous piles of asphalt and soils as well as areas of refuse located along the ocean side of the adjacent State of Hawaii Department of Land and Natural Resources (DLNR) property to the west of the WWTP site. The report indicates that significant amounts of refuse and debris, including junked vehicles, two empty 55-gallon drums, and thirty (30) 5-gallon containers of unknown product were observed in one area. West of the WWTP was "Mr. Pila's junkyard" which reportedly had been in existence at that location for 48 years (since approximately 1945).

- Phase I Environmental Site Assessment (R. M. Towill Corporation [RMTC], 1999)

The Phase I Environmental Site Assessment (ESA) focused on the proposed Pretreatment Facility located south of the Sand Island Parkway Pump Station (Building 3), the existing Influent Screens Building (Building 5), and the proposed location of additional Primary Clarifiers #7 and #8 located east of the existing flotation clarifiers (Building 4). Site conditions at the proposed Pretreatment Facility were described as "currently vacant and planted with lawn grass and trees." The western adjoining property was described as being separated from the WWTP by a chain-link fence with brushed vegetation and characterized by miscellaneous solid waste debris such as assorted vehicle and machinery pieces and trash. The Influent Screens Building was described as containing minor quantities of hazardous materials (insecticides, paint, bleach, and lubricating materials). No evidence of spills or stressed vegetation was noted in the investigation areas. The report notes that a 1966 aerial photograph indicated that a vehicle junkyard was present on and adjacent to the property and 1983 and 1994 aerial photographs indicated that a vehicle junkyard is noted on the western adjacent property. The report stated that there was no evidence of recognized environmental conditions with affected areas of the property. However, it did indicate that hazardous materials consisting of asbestos-containing materials and lead-containing paint were



REF: STATE OF HAWAII, DEPARTMENT OF TAXATION
 NOT TO SCALE



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TAX MAP KEY (TMK) 1-5-41 MAP
 SAND ISLAND WWTP, O'AHU, HAWAII

FIGURE
 2-2

observed in a structure on the property as were scattered areas of debris and solid waste. The report noted that debris removal was underway.

- Phase I Brownfields ESA for Sand Island State Park, Honolulu, Hawai'i (Ecology and Environment, Inc. [EEI], 2000a); Phase I ESA and Phase II Sampling and Analysis Plan for Sand Island State Park Brownfields (EEL, 2000b); Brownfields Targeted Site Assessment

Report, Sand Island State Park Brownfields, Honolulu, Hawai'i (EEI, 2001)

These reports document the site and environmental conditions at TMK 1-5-041: Parcels 006, 334, and 022, which include the adjacent DLNR parcel and parcels immediately to the west and to the south of the WWTP (Figure 2-2). The Phase II investigation included soil sampling of soil piles and areas of concern on the western and southern adjacent properties. Soil sampling results indicated the presence of metals (arsenic, lead, antimony, and nickel), semi-volatile organic compounds (SVOCs) (acetophenone and benzo(a)pyrene), pesticides (dieldrin), and volatile organic compounds (VOCs) (methylene chloride) above action levels. PCBs were detected at low concentrations (below action levels). The report concluded that impacted soils exist in the areas south and west of the WWTP site and that impacted soils should be addressed to minimize the potential risks to the groundwater, humans, and the environment prior to any development of the property.

- Phase I ESA, HECO Mokuone Substation, Honolulu, Hawai'i (Levine Fricke, 2001a); Phase II ESA, Proposed HECO Mokuone Substation, Honolulu (Levine Fricke, 2001b)

The Phase I ESA was completed for two areas south of the Sand Island Parkway, north and east of the HASITC, and north and west of the CCH Highways Division dewatering facility (Figure 2-1). The Phase I report indicated that the investigation areas were apparently sublet to "Toko" (probably Towco Enterprises) from approximately the mid-1980s to 1995. The company reportedly used the area to store abandoned and wrecked vehicles for disposal. Although no evidence of a release to the environment was discovered during the site inspection, the previous use of the site as a junkyard for abandoned vehicles, which had the potential for a release, was sufficient justification for HECO to conduct a Phase II Environmental Site Assessment.

The Phase II ESA included the collection of eight surface soil samples from the investigation area and the advancement of four soil borings to 12 feet below ground surface at locations where elevated concentrations of petroleum-related constituents and lead were detected. Results of the investigation indicated that Total Petroleum Hydrocarbons (TPH) as oil, lead and ethylbenzene were the primary constituents of concern with maximum concentrations in soil of 9,000 mg/kg, 1,300 mg/kg, and 10.5 mg/kg, respectively. The analytical results also indicated the presence of low concentrations of xylenes, naphthalene, cadmium, chromium, and PCBs. No additional action with regard to TPH-oil was recommended as neither sheen, nor phase-separated hydrocarbons were observed either in soil or groundwater at any of the sampling locations. The mean concentration of lead at the site was 911 mg/kg, which exceeded the U.S. Environmental Protection Agency (EPA) Region 9 Industrial Preliminary Remediation Goal (PRG) of 750 mg/kg. Therefore, capping the investigation area with gravel in order to protect on-site workers was recommended and approved by the HDOH. Annual monitoring at the site in order to monitor the concentrations of ethylbenzene and other petroleum-related constituents at the site was also recommended.

- Environmental Site Investigation (EI, 2002a); Environmental Site Investigation Follow-On PCB Sampling (EI, 2002b); Soil Stockpile Sampling and Analysis (EI, 2002c); Toxic Substances Control Act Notification Report (EI, 2002d); Final Letter Report 96" Primary Effluent Pipeline, Effluent Pump Station Wet Wells, and 84" Final Effluent Pipeline Sampling and Analysis at the Ultraviolet Disinfection Project Site (EI, 2002e); Environmental Site Investigation Additional Sampling Investigation Report (EI, 2003a); Letter Report, Environmental Site Investigation, Proposed New Pond and Injection Well Location, PCB Sampling (EI, 2003b); Final Human Health Risk Assessment (EI, 2003d); and Contaminated Soil Review Report, Final Soil Management Plan (EI, 2003e). Sand Island Wastewater Treatment Plant, Limited Soil Characterization, PCB Assessment, Sand Island, Honolulu, Hawai'i (Professional Services Inc. (PSI), 2002); and Sand Island Wastewater Treatment Plant, PCB Hot Spot Removal Excavation and Clearance Testing, Sand Island, Honolulu, Hawai'i (PSI, 2003).

The Sand Island WWTP is currently undergoing modification and improvements as required under its National Pollutant Discharge Elimination System (NPDES) permit. Two of the larger construction projects include the Headworks (Phases 1 and 2) and UV Disinfection projects. Based on the previous HECO sampling results, the CCH decided that it would be prudent to conduct an environmental investigation of the Headworks Phase 2 project area because the former salvage yard, which was suspected to be a contributing source of environmental contamination, appeared to have extended into this area (EI, 2003a).

An investigation of the Headworks Phase 2 project area was conducted in June 2002 to determine whether soil or groundwater contamination is present, and whether any contamination, if found, would have a significant impact on future construction. The results of the investigation indicated that PCB is present in the soil above the groundwater table at several locations within the Headworks Phase 2 project area, and that PCB contaminated soil may be present within other parts of the WWTP as well (EI, 2003a).

Additional soil samples were collected and analyzed from the Headworks Phase 2 project area, the Headworks Phase 1 project area, the new UV Disinfection Unit project area, as well as stockpiled soils that had already been excavated from the Headworks Phase 1 and UV Disinfection Unit areas. The results of the sampling and analyses indicated that a large portion of the Sand Island WWTP contains PCB contaminated soils. In addition, the contaminant levels detected within a portion of the Headworks Phase 2 Project Area exceeded regulatory levels set forth in the Toxic Substances Control Act (TSCA), Title 40 Code of Federal Regulations (CFR) 761.61. In accordance with the TSCA regulations, remediation of the site was required. The CCH elected to conduct a "self implementing cleanup of the site" in accordance with Title 40 CFR 761.61a. A TSCA Notification Report for the proposed remedial action was submitted to and approved by EPA Region 9 in October 2002 (EI, 2002d).

The Sand Island WWTP met the definition of a low occupancy site under TSCA, and therefore, the soil cleanup level was set at 25 parts per million (ppm) per Title 40 CFR 761.61a. Soils with PCB concentrations greater than 25 ppm were removed from the site and disposed at a proper facility according to the procedures set forth in the Notification Report. Remediation was completed in March 2003 with approximately 150 cubic yards of soil being removed and disposed (PSI, 2003).

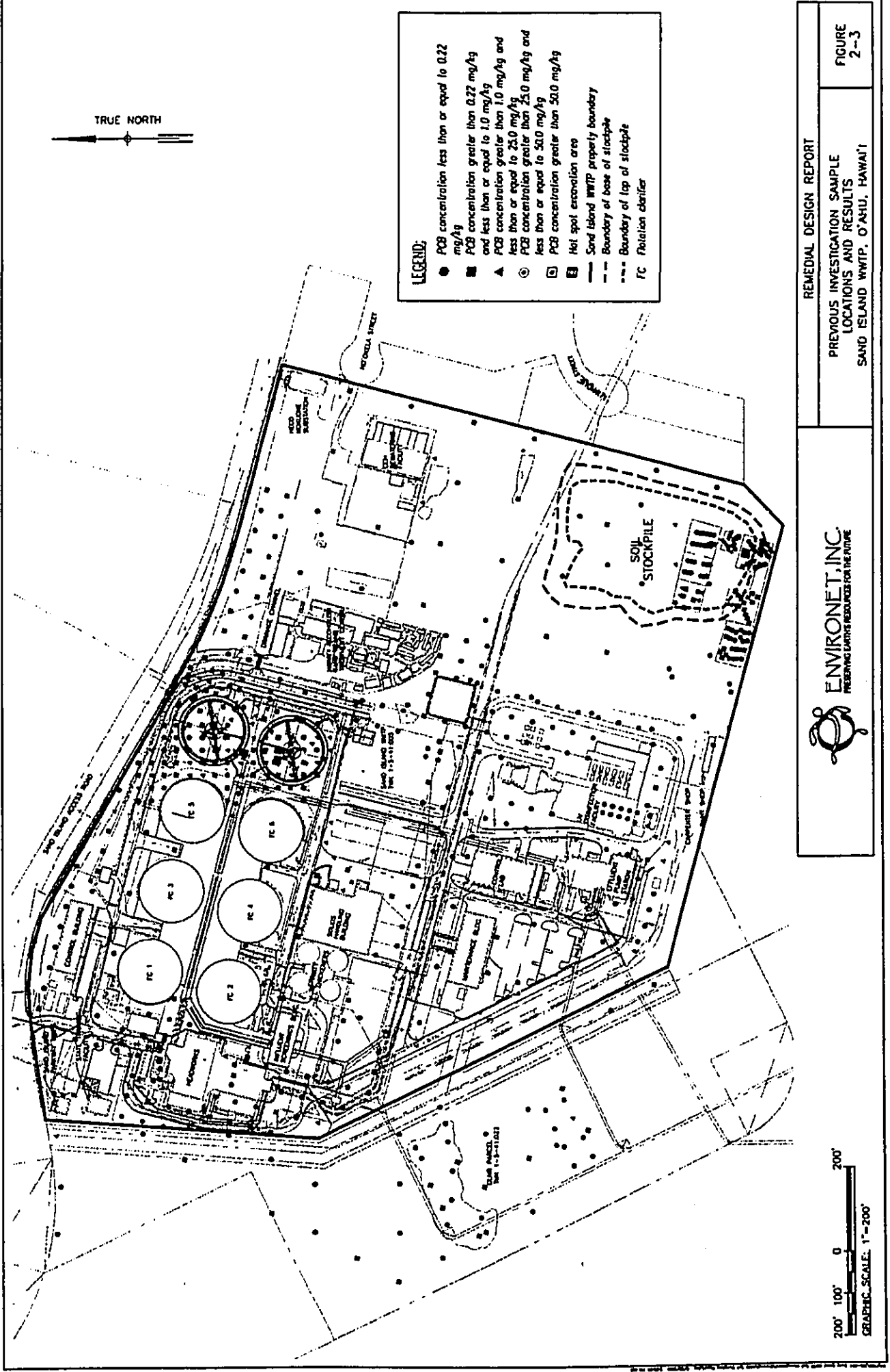
The analytical results of the additional soil sampling performed in December 2002 did not identify gross PCB contamination with total PCB concentrations greater than the TSCA cleanup level of 25 milligrams per kilogram (equivalent to parts per million). Therefore, EI concluded that the five PCB hot spot locations identified in the Notification Report represented the only TSCA remedial action concern areas (EI, 2003a).

A Human Health Risk Assessment (HHRA) was completed for the WWTP site to address human health risks related to the remaining low level contamination in the soil (Figure 2-3). The results of the risk analysis indicated that the levels of the contaminants of concern did not pose an unacceptable human health risk to on-site wastewater treatment plant operators. Therefore, further remediation of the site was not recommended (EI, 2003d).

A Soil Management Plan (SMP) was also completed to address the handling and disposal options for the excess low level PCB contaminated soil. The Headworks and UV Disinfection construction projects required excavation of approximately 80,000 to 90,000 cubic yards of soil. Approximately 70,000 cubic yards of this soil came from soil located above the groundwater table, which contained low level PCB contamination. The other 20,000 cubic yards of soil was recovered from below the groundwater table, which was found not to contain PCB contamination and is considered clean. The SMP presented six options for the disposal/re-use of the low level PCB contaminated soil. The CCH has elected to implement reuse on-site as their first option. Due to space limitations and access concerns with the on-going construction projects, the DOH has allowed the CCH to temporarily stockpile the excess soil on-site. After completion of construction, the excess soil will be permanently graded on the WWTP site per this remedial design (EI, 2003e).

- Phase I Environmental Site Assessment, Sand Island Wastewater Treatment Plant (EI, 2003c).

Based on the historical research, EI identified six recognized environmental conditions (RECs) at the Sand Island WWTP: (1) the potential presence of heavy metals associated with sand blast grit in an area located south of the Carpenter Shop; (2) the potential presence of one or more debris areas as evidenced by junkyards/dump sites and buried materials in and around the adjacent DLNR parcel, which could impact the soil and groundwater at the adjacent DLNR parcel; (3) the potential presence of lead-based paint in dozens of "empty" drums located on the southeast corner of the site; (4) the potential presence of mixed waste in soil piles on the west side of the adjacent DLNR parcel, which could impact the DLNR parcel; (5) the documented presence of PCB-impacted soil at the WWTP site; and (6) the presence of former junkyards/dump sites in and around the WWTP site as shown on historic aerial photographs, which could impact soil and groundwater at the WWTP site (Figure 2-4). EI recommended sampling and chemical analysis of the sand blast grit in order to determine the metals content of the material and proper disposal. EI also recommended the removal and proper disposal of the drums located on the southeast corner of the site. Furthermore, EI recommended conducting a Phase II Environmental Site Assessment of the site with the collection of surface and subsurface soil and groundwater samples in the former junkyard/dump areas with samples analyzed for constituents of concern related to the specific REC.



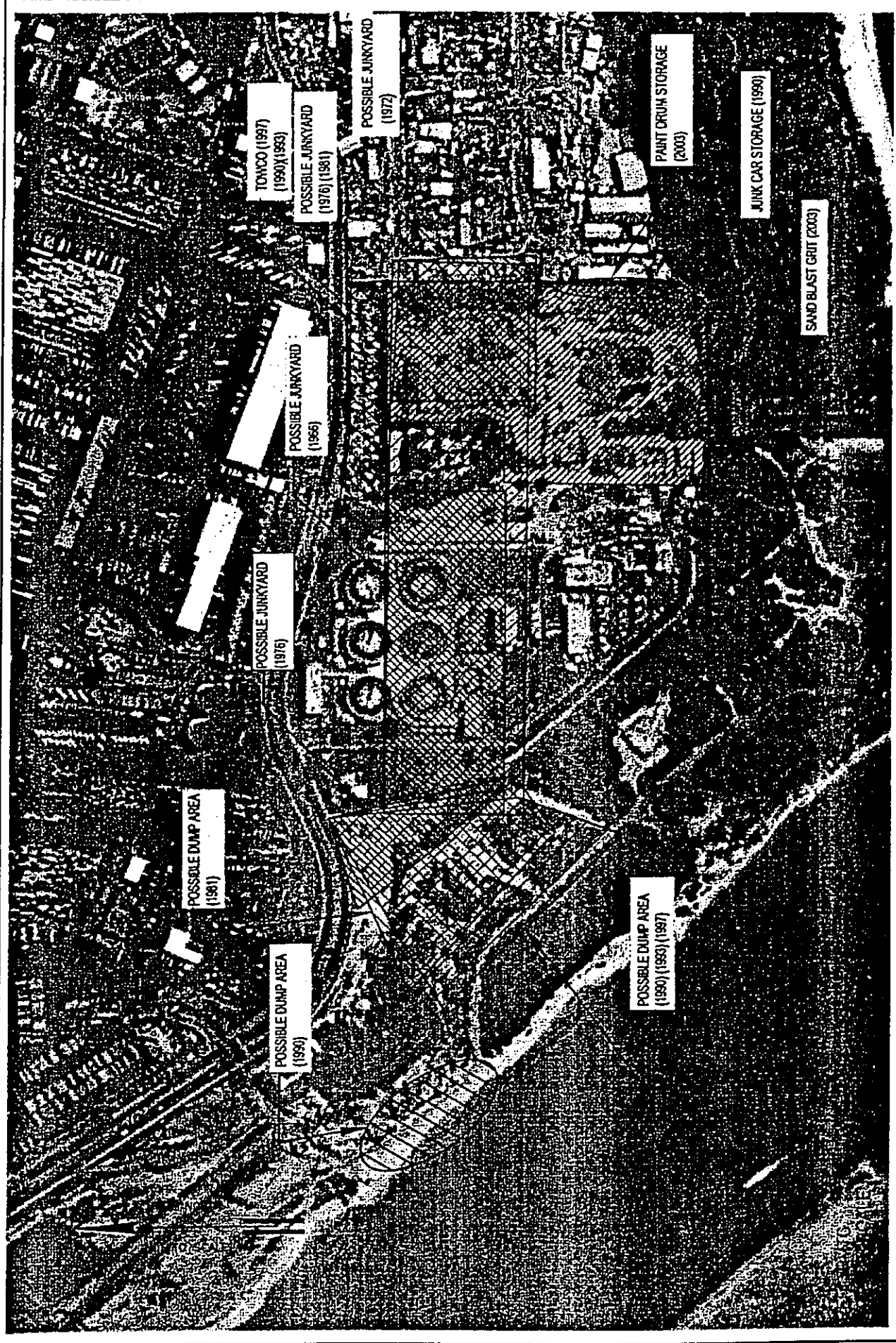
REMEDIAL DESIGN REPORT
 PREVIOUS INVESTIGATION SAMPLE
 LOCATIONS AND RESULTS
 SAND ISLAND WWTWP, O'AHU, HAWAII


ENVIRONET, INC.
 PREPARING DATA FOR THE FUTURE



FIGURE
 2-3

200' 100' 0 200'
 GRAPHIC SCALE: 1"=200'



 <p>ENVIRONET, INC. PRESERVING EARTH'S RESOURCES FOR THE FUTURE</p>	<p>REMEDIAL DESIGN REPORT</p>	<p>FIGURE 2-4</p>
<p>POTENTIAL RECOGNIZED ENVIRONMENTAL CONDITIONS SAND ISLAND WWTP, O'AHU, HAWAII</p>		

- Draft Additional Soil Sampling Investigation, Soil Management Project, Eastern Investigation Area, Sand Island, Honolulu, Hawai'i (EI, 2005c).

The additional soil sampling investigation focused the eastern investigation area (EIA), an approximate 9-acre portion of the WWTP, which is currently used for construction equipment staging and stockpiling of the excess soil from the construction projects at the WWTP site. The objective of this additional soil sampling investigation was to collect surface and subsurface soil samples within the soil stockpile at the EIA to verify the average PCB concentration in the soil prior to reuse on-site.

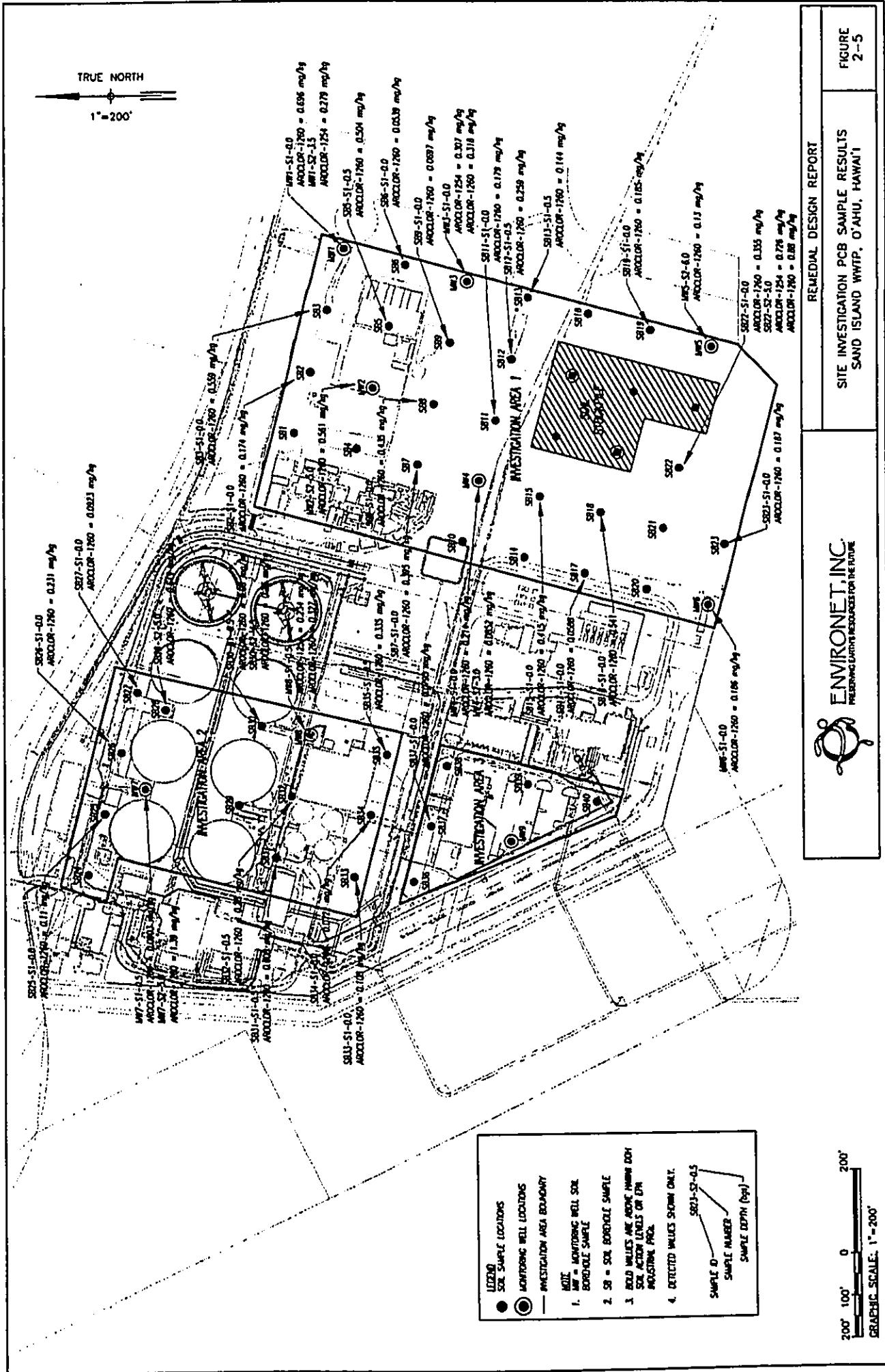
The results of the soil sampling and analysis indicated that PCB contamination is present in the stockpiled soil. A total of 29 out of 30 soil samples contained detectable concentrations of PCB Aroclor-1260. Detected PCB concentrations ranged from 0.06 mg/kg to 7.8 mg/kg. Three samples (B07-1.0, B08-1.0, and B10-1.0) contained levels above the DOH EAL of 1.1 mg/kg and the EPA Region 9 Industrial PRG of 0.74 mg/kg with concentrations of 7.8 mg/kg, 1.1 mg/kg, and 3.6 mg/kg respectively. Two samples (B02-1.0 and B10-9.0) were detected above the EPA Region 9 Industrial PRG with concentrations of 0.99 mg/kg and 1.00 mg/kg respectively (Figure 2-5).

The detected PCB concentration range (0.06 to 7.8 mg/kg) from the soil stockpile was consistent with the range (0.0287 to 22.8) found in previous investigations after TSCA remediation (EI, 2003d). The reasonable maximum exposure (RME) exposure point concentration (EPC) calculated from the stockpile samples was found to be 1.18 mg/kg. This RME EPC is slightly higher than the RME EPC computed for the entire WWTP site of 0.55 mg/kg and slightly exceeds the DOH EAL of 1.1 mg/kg and the EPA Region 9 PRG of 0.74 mg/kg (EI, 2003d). Considering that: (1) the exposure unit to future on-site WWTP operators is the entire WWTP site; and (2) the RME EPC of 1.18 mg/kg equates to a conservative cancer risk of 1.6×10^{-6} , which is within the acceptable range of risk of 10^{-4} and 10^{-6} used by DOH; the stockpiled soil within the EIA was determined to be appropriate for reuse on-site as planned.

Final Site Investigation Report, Sand Island Wastewater Treatment Plant (EI, 2005d).

EI conducted a site investigation (SI) of three investigation areas located within the WWTP, two of which were identified in a Phase I ESA as previously used junkyard/debris areas (EI, 2003c) and one which was identified by the CCH to address on-site worker protection concerns. The objective of the SI was to determine the presence and extent of soil and groundwater contamination within the three investigation areas.

The results of the soil and groundwater sampling and analyses indicated that gross contamination in the soil and groundwater does not exist within the three investigation areas, with the exception of ubiquitous trace levels of PCBs in site soils. The northeast corner of the WWTP site near and within the CCH Highways Division dewatering facility did contain localized, petroleum related, soil contamination in the near surface soil. Soil contaminants detected above DOH Environmental Action Levels (EALs) and/or EPA Region 9 Industrial PRGs in the northeast corner of the site included: TPH-gas, TPH-oil, ethylbenzene, xylene, benzo(a)pyrene, and lead. The distribution of contaminants indicated small localized impact areas possibly resulting from minor surface spills with contaminant levels detected just slightly above action levels. Sample results from subsurface soil samples and groundwater



samples within this area indicated that the contaminants are limited to the near surface and have not migrated to the subsurface soil or groundwater.

Similar to previous environmental investigations conducted at the Sand Island WWTP (Environet 2003d), PCBs were found in the surface and subsurface soil at low concentrations throughout the three investigation areas, with detectable concentrations measured in 39 of the 96 samples collected (Figure 2-6). Detected PCB concentrations ranged from 0.0539 to 1.39 mg/kg, with only two samples exceeding the EPA Region 9 Industrial PRG of 0.74 mg/kg.

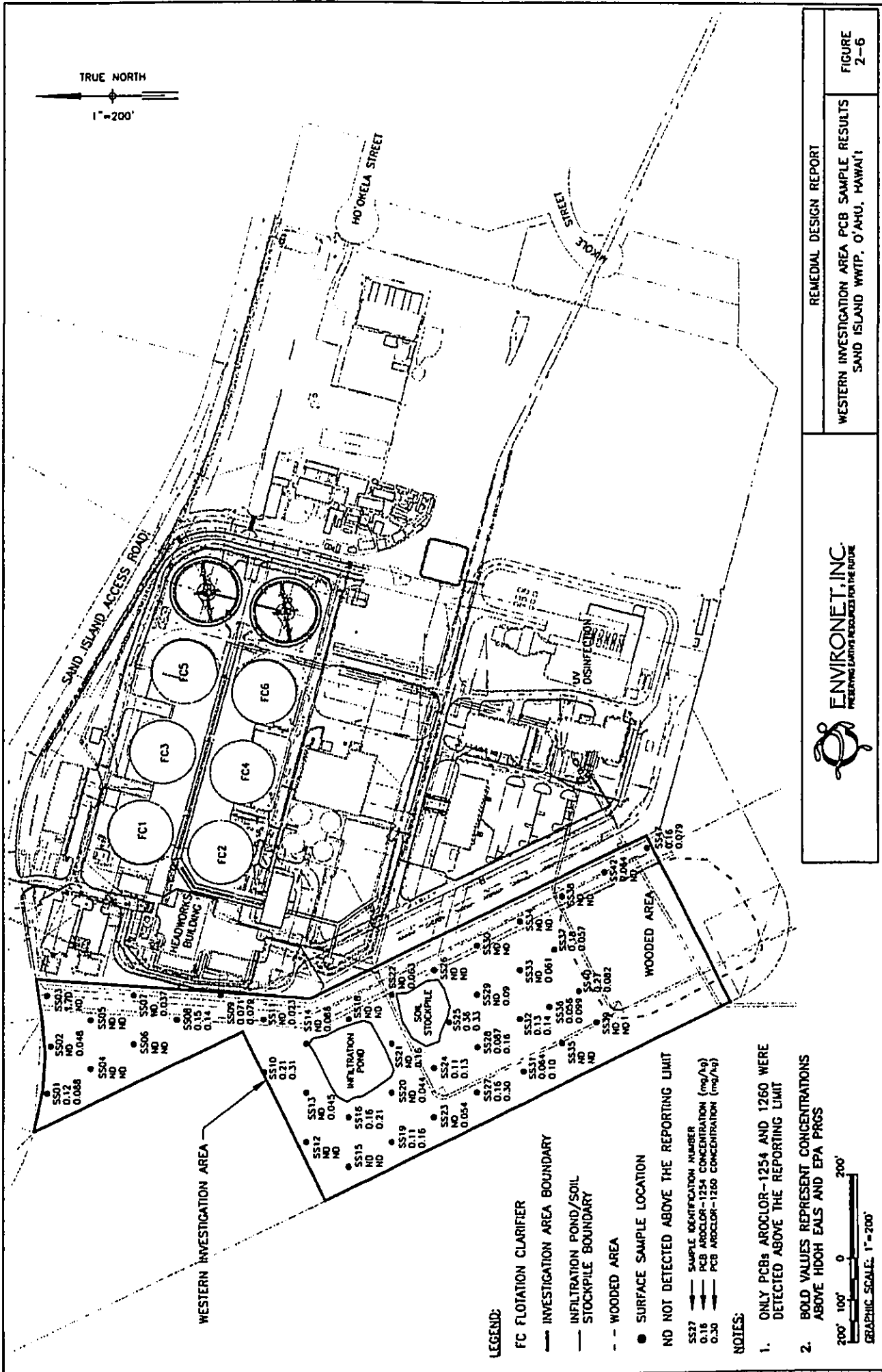
The groundwater sample results indicated that groundwater has not been impacted by past activities within the three investigation areas. The groundwater samples collected did not contain any detectable levels of constituents of concern above HDOH or EPA action levels.

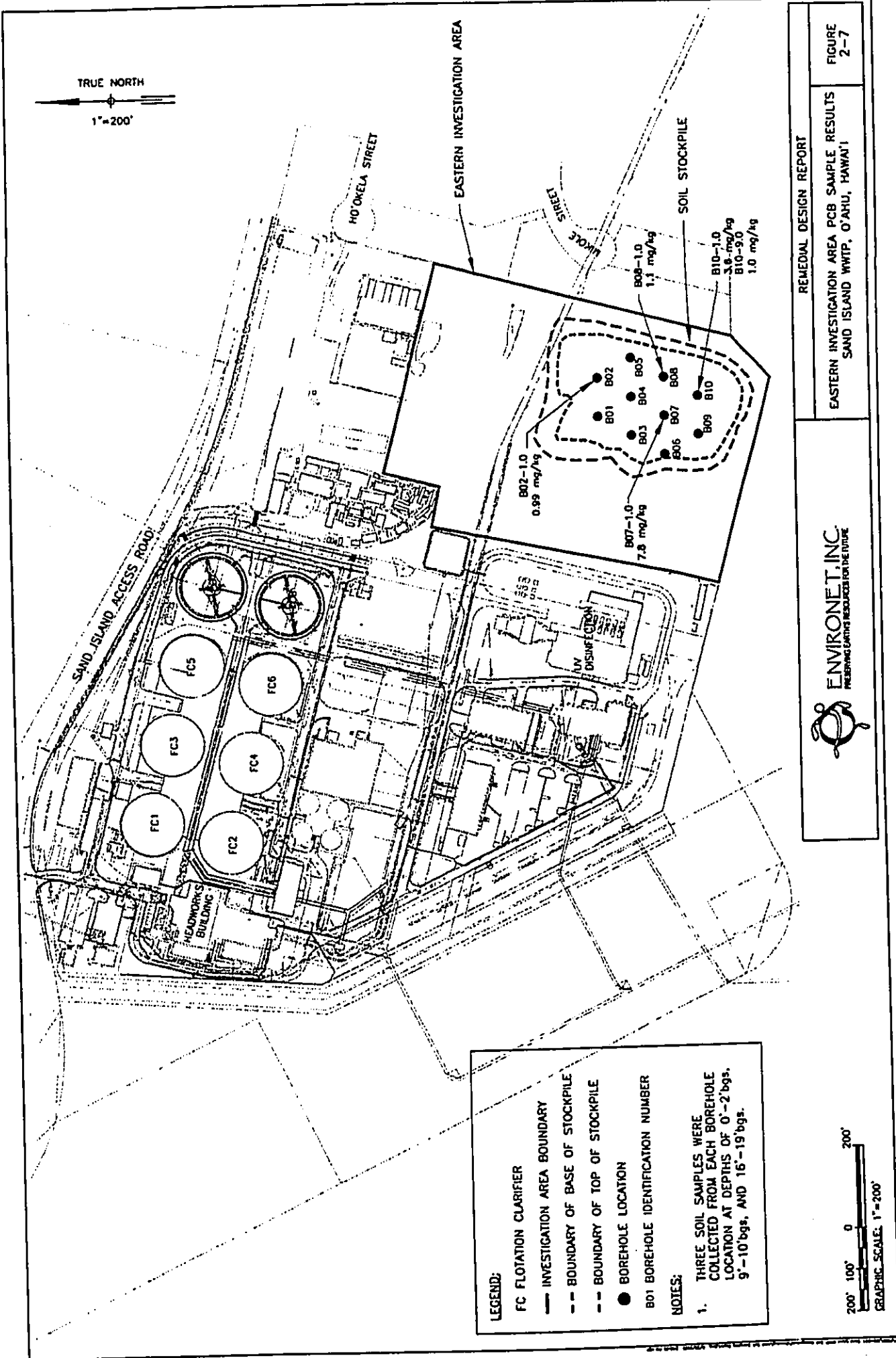
EI concluded that based on the limited extent of contamination detected, additional characterization of the soil and the groundwater is not warranted at this time. Since a few of the PCB and petroleum constituent concentrations exceeded EPA Region 9 Industrial PRGs, EI recommended that the Human Health Risk Assessment previously completed for the Sand Island WWTP be updated with the soil and groundwater data from the SI.

- Final Additional Soil Sampling Investigation, Soil Management Project, Western Investigation Area, Sand Island, Honolulu, Hawai'i (EI, 2005e).

EI conducted surface soil sampling for a 16-acre portion of an adjacent land parcel located west of the WWTP. The adjacent land parcel is leased by the CCH DDC from the DLNR for use as a construction staging area. The purpose of the investigation was to determine if PCB contaminated soils from the WWTP were inadvertently tracked onto the site during construction staging activities.

Surface soil samples were collected from 41 locations. The results of the surface soil sampling and analysis indicated that PCB contamination was present in surface soils at low-levels (levels detected were below action levels). The distribution of low-level PCB contamination throughout the investigation area indicated that PCB contaminated soil was inadvertently tracked onto the site (Figure 2-7). Considering the future use of the site as an industrial park, and the low-level PCB concentrations detected, EI recommended that remediation of surface soils within the investigation area was not warranted at the time. As a precautionary measure, the soil around the one sample that did contain PCB levels above the DOH EAL was removed and placed in the soil stockpile on the WWTP site. EI recommended that future development of the site should consider some type of landscaping on the site to minimize dust and erosion of soils.





Section 3 Soil Reuse Design

3.1 Existing Conditions

The excess soil generated from the ongoing construction projects is currently stockpiled in the southeastern portion of the WWTP site (Figure 3-1). Temporary engineering controls such as hydromuching, watering, and use of a dust screen are being employed to reduce dust and erosion. A stockpiling permit was obtained for the stockpile from the CCH Department of Planning and Permitting (DPP).

A topographic survey of the soil stockpile and the surrounding adjacent area was recently completed in July 2005. Volume calculations based on the topographic survey were completed. The total volume of stockpiled soil to be reused is approximately 77,000 cubic yards.

As mentioned previously in Section 2.5, confirmation sampling of the soil stockpile for PCBs was completed in June 2005. The PCBs results were found to be within acceptable levels for reuse as planned (EI, 2005c).

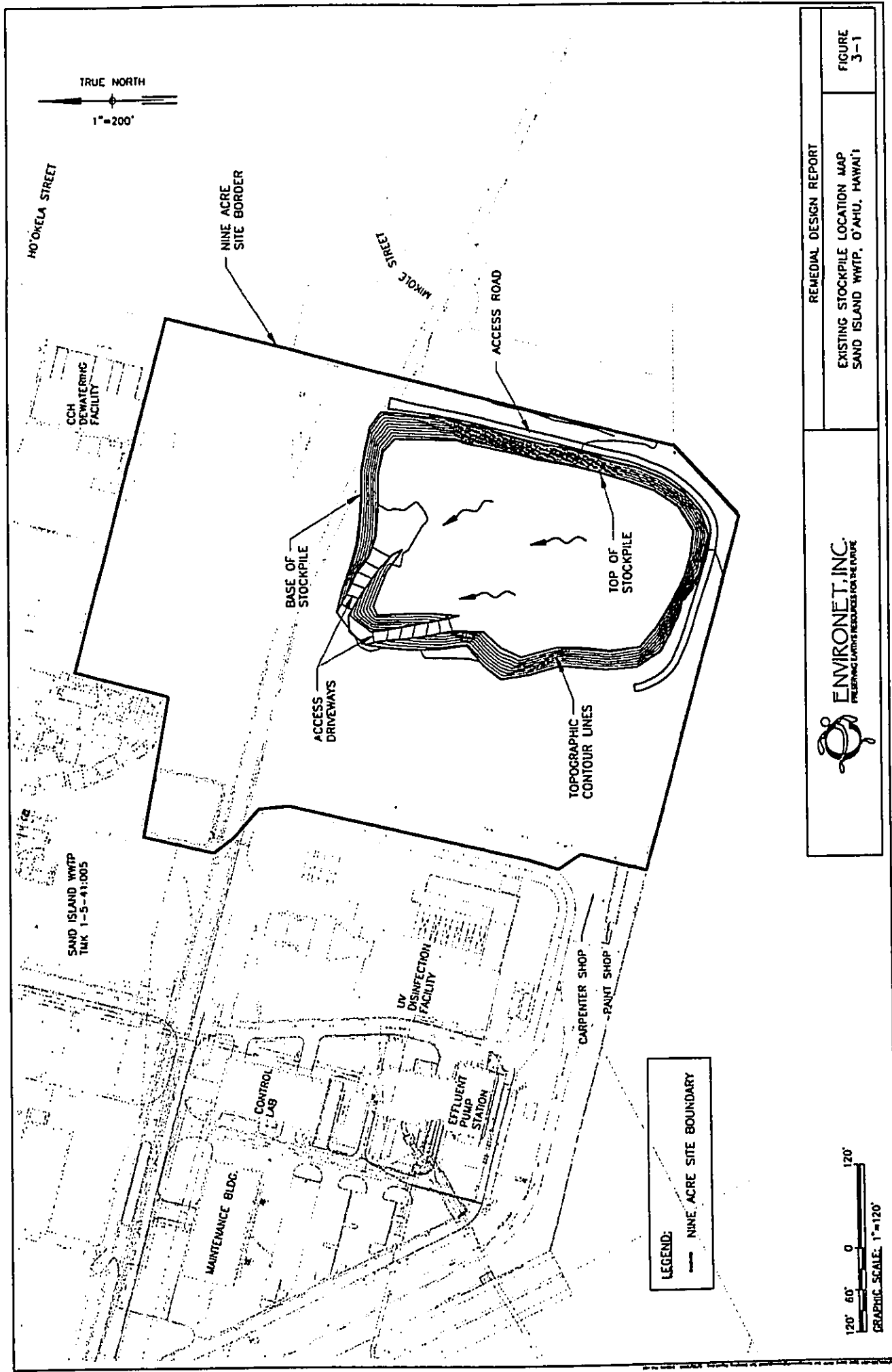
3.2 Reuse Design

The reuse of the stockpiled soil on-site will generally involve grading the stockpiled soil over an approximate 9-acre area (Figure 3-2). The soil will be graded and compacted in 9-inch lifts. Based on the current unconsolidated volume of 77,000 cubic yards and allowance for an additional 15,000 cubic yards of consolidated volume for any future expansion work at the WWTP site, the ground surface within this area will be raised by approximately 4 to 10 feet.

The side slopes of the newly graded area will be stabilized by a shotcrete wall. The shotcrete wall will involve stabilization of the edges of the compacted lifts in 18-inch intervals with a geotextile fabric. The geotextile fabric will be reinforced with rebar and 6 inches of shotcrete. The surface of the graded area will be stabilized with asphalt and gravel. The northern third of the graded area (approximately 3-acres) will be finished with asphalt. This area is intended for use as a construction staging area for the follow-on Expansion construction project for the WWTP. An asphalt finish was selected to allow vehicular traffic to access the area without causing dust and erosion. Two driveways will provide access to this area (Figure 3-2).

The remaining southern graded area will be landscaped with a filter fabric and 6-inch layer of gravel. An approximate 380 feet by 285 feet by 3 feet deep area will be left open in the middle of the graded area to allow for backfill of excavated soil from future construction projects. This open area will allow for approximately 12,000 cubic yards of additional space. This area will be enclosed by a silt screen to prevent erosion. After completion of the future construction projects, this area will be finished with a filter fabric and 6-inch layer of gravel to match the surrounding area.

Drainage of the graded area will be routed to the existing drainage swale located to the northwest. The new grades will be such that surface runoff flows to the drainage swale to be extended near the base of the access driveway.



REMEDIAL DESIGN REPORT

FIGURE
3-1

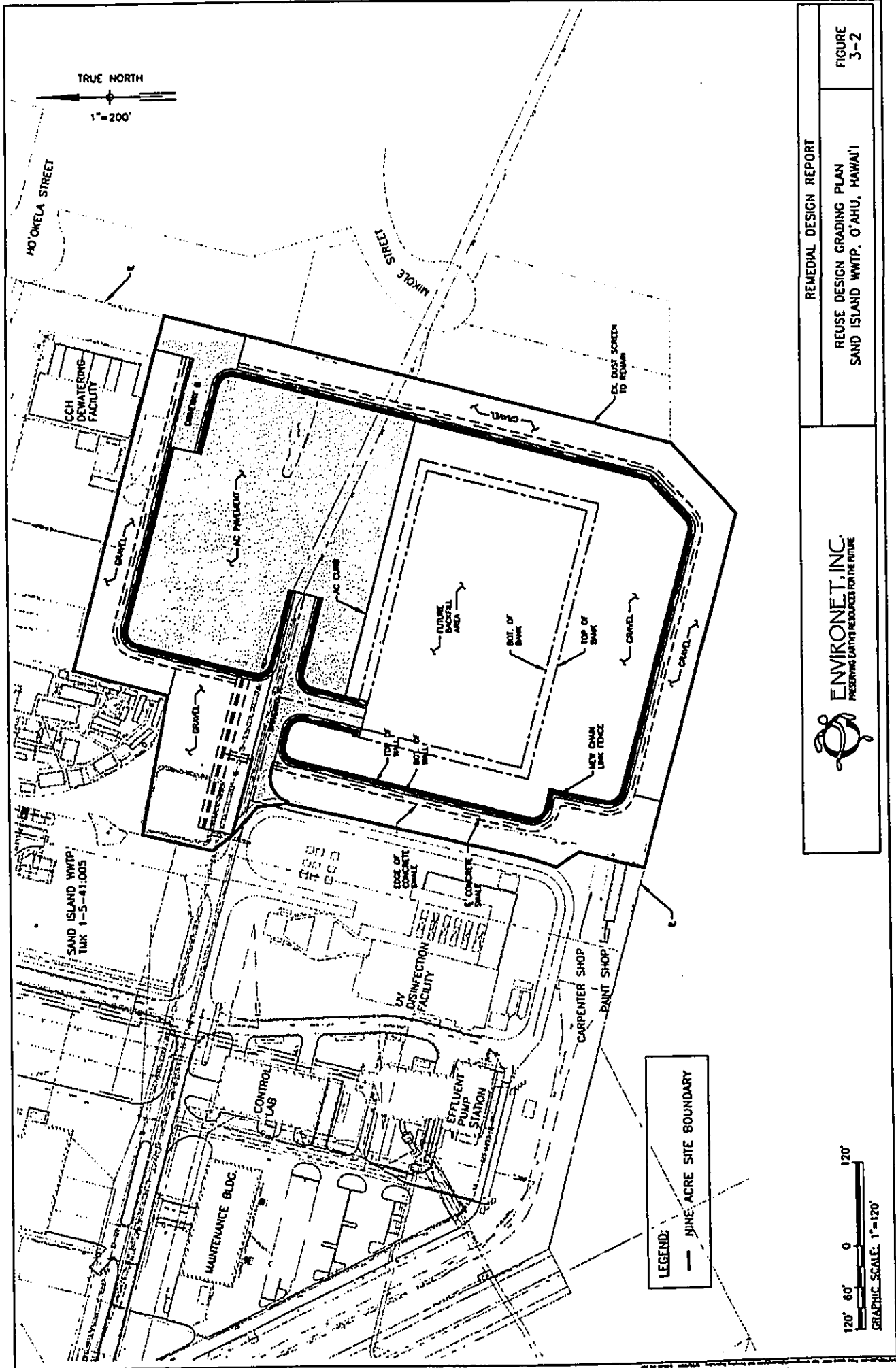
EXISTING STOCKPILE LOCATION MAP
SAND ISLAND WWTTP, O'AHU, HAWAII



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LEGEND:
--- NINE ACRE SITE BOUNDARY

120' 60' 0 120'
GRAPHIC SCALE. 1"=120'



REMEDIAL DESIGN REPORT
 REUSE DESIGN GRADING PLAN
 SAND ISLAND WWTTP, O'AHU, HAWAII



FIGURE 3-2

120' 60' 0 120'
 GRAPHIC SCALE: 1"=120'

Construction plans and specifications for this design have been prepared and will be submitted to DOH for review along with this report. The construction contractor will be responsible for dust and erosion control during construction activities as well as the health and safety procedures to be employed by their workers. The minimum requirements that will need to be met are presented in the construction specifications.

3.3 Future Considerations

A Long Term Maintenance and Management plan will be prepared after completion of construction to address the long term maintenance and management of the soil reuse area. Issues such as inspections, maintenance repairs, and management decisions regarding future construction within the area will be addressed by this plan. This plan will be submitted to DOH for review and approval.

Section 4 References

- Ecology and Environment, Inc., 2000a, *Phase I Brownfields Environmental Site Assessment for Sand Island State Park, Honolulu, Hawai'i*. Prepared for State of Hawaii Department of Business, Economic Development, & Tourism, Department of Land and Natural Resources, Department of Health; United States Environmental Protection Agency, Region 9. October 2000.
- Ecology and Environment, Inc., 2000b, *Phase I Environmental Assessment and Phase II Sampling and Analysis Plan for Sand Island State Park Brownfields, Honolulu, Hawai'i*. Prepared for State of Hawaii Department of Business, Economic Development, & Tourism, Department of Land and Natural Resources, Department of Health; United States Environmental Protection Agency, Region 9. October 2000.
- Ecology and Environment, Inc., 2001, *Brownfields Targeted Site Assessment Report for Sand Island State Park Brownfields, Honolulu, Hawai'i*. Prepared for State of Hawai'i Department of Business, Economic Development, & Tourism, Department of Land and Natural Resources, Department of Health; United States Environmental Protection Agency, Region 9. March 2001.
- Environet, Inc., 2002a. *Environmental Site Investigation, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. August 2002.
- Environet, Inc., 2002b. *Letter Report Environmental Site Investigation Follow-on PCB Sampling, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. August 2002.
- Environet, Inc., 2002c. *Letter Report Soil Stockpile Sampling and Analysis, Sand Island Wastewater Treatment Plant, Honolulu, O'ahu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. August 2002.
- Environet, Inc., 2002d. *Toxic Substances Control Act Notification Report, Sand Island Wastewater Treatment Plant, Honolulu, O'ahu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. September 2002.
- Environet, Inc., 2002e. *Letter Report 96"-Primary Effluent Pipeline, Effluent Pump Station Wet Well, and 84"-Final Effluent Pipeline Sampling and Analysis at the Ultraviolet Disinfection Project Site, Sand Island Wastewater Treatment Plant, Honolulu, O'ahu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. September 2002.
- Environet, Inc., 2003a. *Environmental Site Investigation Additional Sampling Investigation, Sand Island Wastewater Treatment Plant, Honolulu, O'ahu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. February 2003.
- Environet, Inc., 2003b. *Letter Report, Environmental Site Investigation, Proposed New Pond and Injection Well Location, PCB Sampling, Sand Island Wastewater Treatment Plant, Honolulu, O'ahu, Hawai'i*. Prepared for City and County of Honolulu, Department of Design and Construction. 2003.

- Environet, Inc., 2003c. *Final Phase I Environmental Site Assessment, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. November 2003.
- Environet, Inc., 2003d. *Human Health Risk Assessment, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. December 2003.
- Environet, Inc., 2003e. *Soil Management Plan, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu Department of Design and Construction. December 2003.
- Environet, Inc., 2005a. *Final Site Safety and Health Plan, Additional Soil Sampling Investigation, Soil Management Project, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu, Department of Design and Construction, Honolulu, Hawai'i. June 2005.
- Environet, Inc., 2005b. *Final Site Investigation Work Plan, Additional Soil Sampling Investigation, Soil Management Project, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu, Department of Design and Construction, Honolulu, Hawai'i. June 2005.
- Environet, Inc., 2005c. *Draft Additional Soil Sampling Investigation, Eastern Investigation Area, Sand Island, Honolulu, Hawai'i*. July 2005.
- Environet, Inc., 2005d. *Draft Site Investigation Report, Sand Island Wastewater Treatment Plant, Honolulu, Hawai'i*. Prepared for City and County of Honolulu, Department of Environmental Services, Honolulu, Hawai'i. July 2005.
- Environet, Inc., 2005e. *Final Additional Soil Sampling Investigation, Western Investigation Area, Sand Island, Honolulu, Hawai'i*. August 2005.
- LFR Levine-Fricke, 2001a, *Phase I Environmental Site Assessment, HECO Mokuone Substation, Honolulu, Hawai'i*. June 2001.
- LFR Levine-Fricke, 2001b, *Phase II Environmental Site Assessment, HECO Mokuone Substation, Honolulu, Hawai'i*. November 2001.
- Masa Fujioka and Associates, 1993. *Preliminary Environmental Site Assessment, Sand Island Corporation Yard and Park, Sand Island, O'ahu, Hawai'i*. TMK 1-5-41: Parcels 6, 22, and 130.
- Mink, J.F. and Lau, L.S. 1990. *Aquifer Identification and Classification for O'ahu: Groundwater Protection Strategy for Hawai'i*. Water Resources Research Center Technical Report No. 179.
- Presley, T. 1994. *Late Post Shield Volcanism on Wai'anae Volcano*. University of Hawai'i, Masters Thesis, 180 pp.
- Professional Services Industries 2002. *Limited Soil Assessment for PCB Contamination Report, Sand Island Waste Water Treatment Plant (WWTP), Sand Island, Honolulu, Hawai'i*. September 2002.

- Professional Services Industries 2003. *Sand Island Waste Water Treatment Plant PCB Hot Spot Removal Excavation and Clearance Testing, Sand Island, Honolulu, Hawai'i*. March 2003.
- R.M. Towill Corporation, 1999, *Phase I Environmental Site Assessment for Sand Island Wastewater Treatment Plant Modifications, 90 MGD PER, 1350 Sand Island Parkway Road, Honolulu, O'ahu, Hawai'i*. Prepared for City and County of Honolulu, Department of Wastewater Management, Honolulu, Hawai'i. March 1999.
- Stearns, Harold T. 1985. *Geology of the State of Hawai'i (2nd edition)*. Pacific Books, Palo, Alto, California.
- State of Hawai'i Department of Health, *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*. May 2005
- The State of Hawai'i Data Book, 2001. The State of Hawai'i Department of Business, Economic Development & Tourism. www.hawaii.gov/dbedt/db01/
- U.S. Department of Agriculture Soil Conservation Services and the University of Hawai'i Agricultural Experiment Station, *Soil Survey of Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lana'i*, State of Hawai'i. August 1972.
- U.S. EPA Publication SW-846, 3rd Edition. 1998. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*.
- U.S. Environmental Protection Agency, Office of Emergency and Remedial Response; *Risk Assessment Guidance for Superfund, Vol. 1, Human Health Evaluation Manual, EPA/540/1-89/002*. December 1989.
- U.S. Environmental Protection Agency, *Soil Sampling Quality Assurance User's Guide, EPA/600/8-89/046*. March 1989.
- U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals (PRGs)*. February, 2003.
- U.S. Geological Survey, 1998, 7 ½-minute topographic map of the Honolulu Quadrangle, Hawai'i; scale 1: 24,000. Reviewed at the University of Hawai'i Hamilton Library Map Collection.
- Wentworth, C.K. 1951. *Geology and Groundwater Resources of the Honolulu-Pearl Harbor Area, O'ahu, Hawai'i*. Report prepared by the Board of Water Supply, City and County of Honolulu, Honolulu, Hawai'i.

Appendix E

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Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

APPENDIX E
FLOOD ZONE DOCUMENTATION



Environet, Inc.

PRESERVING EARTH'S RESOURCES FOR THE FUTURE

TELEPHONE MEMORANDUM

Project No.: 305-001
Project: Environmental Assessment, Sand Island Wastewater Treatment Plant

Call Made By: Lydia Yee, EI
Call Made To: Mario Siu-Li, CCH, DPP
Date: 26 July 2005
Time: 11:30 AM

Re: Flood Zone Confirmation

Conversation:

A telephone conversation was held with Mr. Siu-Li today regarding the requirements for the Sand Island WWTP Soil Management project being that it falls within the 100-yr. flood plain.

Mr. Siu-Li found in his files that a flood determination was accepted by DPP in 1998 for our subject parcel, TMK: 1-5-41: 5. The elevation on the diamond head side was 5.9' and 5.7' on the ewa side. He also said that because the project area is not within the floodway, a "no-rise" certification was not necessary. Our project just needs to take care of the drainage within the subject property.

Recorded by: Lydia Yee

Appendix F

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Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

APPENDIX F

SPECIAL MANAGEMENT AREA PERMIT DOCUMENTATION

**CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING & PERMITTING**
650 South King Street
Honolulu, Hawaii 96813

LAND USE PERMITS DIVISION MASTER APPLICATION FORM

Additional data, drawings/plans, and fee requirements are listed on a separate sheet titled "Instructions for Filing". PLEASE ASK FOR THESE INSTRUCTIONS.

All specified materials described in the "Instructions for Filing" and required fees must accompany this form; incomplete applications will delay processing. You are encouraged to consult with Zoning Division staff in completing the application. Please call the appropriate phone number given in the "Instructions for Filing."

Please print legibly or type the required information.

SUBMITTED FEE: \$ _____

PERMIT/APPROVAL REQUESTED (Check one or more as appropriate):

<input type="checkbox"/> Cluster: <input type="checkbox"/> Agricultural <input type="checkbox"/> Country <input type="checkbox"/> Housing	<input type="checkbox"/> Park Dedication <input type="checkbox"/> Plan Review Use	Special Management Area Use Permit: <input type="checkbox"/> Minor <input checked="" type="checkbox"/> Major
<input type="checkbox"/> Conditional Use Permit: <input type="checkbox"/> Minor <input type="checkbox"/> Major	Planned Development: <input type="checkbox"/> Housing <input type="checkbox"/> Commercial (WSD Only) <input type="checkbox"/> Resort (WSD Only)	<input type="checkbox"/> Variance from LUO Sec.(s): _____
<input type="checkbox"/> Existing Use: (Indicate Type of Use)	<input type="checkbox"/> Shoreline Setback Variance	<input type="checkbox"/> Waiver from LUO Sec.(s): _____
<input type="checkbox"/> Minor Shoreline Structures Permit (Indicate Reference File No.)	Special District Permit: <input type="checkbox"/> Minor <input type="checkbox"/> Major (Indicate District)	<input type="checkbox"/> Zoning Adjustment, LUO Sec.(s): _____
<input type="checkbox"/> Modify Approved Permit: (Indicate Reference File No.)	<input type="checkbox"/> Downtown Height >350 Feet	<input type="checkbox"/> 201G Project

TAX MAP KEY(S): 1-5-41:05
 LOT AREA: 50.0 acres
 ZONING DISTRICT(S): I-3 waterfront industrial STATE LAND USE DISTRICT: Urban
 STREET ADDRESS/LOCATION OF PROPERTY: Sand Island Wastewater Treatment Plant
1350 Sand Island Parkway, Honolulu, HI 96819

RECORDED FEE OWNER:
 Name (if any): State of Hawaii
 Mailing Address: Dept of Land & Natural Resources
1151 Punchbowl St, Honolulu HI 96813
 Phone Number: _____
 Signature: _____

PRESENT USE(S) OF PROPERTY/BUILDING:
Municipal Wastewater Treatment Plant

APPLICANT:
 Name: City & County of Honolulu
 Mailing Address: Dept of Design & Construction
650 S. King St, Honolulu HI 96813
 Phone Number: 323-4884
 Signature: [Signature]

AUTHORIZED AGENT/CONTACT PERSON:
 Name: Jerky Kami / Robert Miyasaki
 Mailing Address: Dept of Design & Construction
650 S. King St, Honolulu HI 96813
 Phone Number: 527-6109 (J.Kami), 527-5159 (R.Miyasaki)
 Signature: [Signature]

PROJECT NAME (if any): Sand Island WWTP Disinfection Facility and Effluent Pump Station

REQUEST/PROPOSAL (Briefly describe the nature of the request, proposed activity or project):
Construction of new disinfection facility and effluent pump station; required to satisfy conditions of Sand Island WWTP's National Pollutant Discharge Elimination System (NPDES) Permit.

THIS SPACE FOR DEPARTMENT USE ONLY

ACTION TAKEN BY DEPARTMENT:

<input type="checkbox"/> Application incomplete (not accepted)	<input type="checkbox"/> Exempt	<input type="checkbox"/> Withdrawn by applicant
<input type="checkbox"/> Approved	<input type="checkbox"/> Approved with attached conditions	<input type="checkbox"/> Denied for attached reason(s)

POSSE JOB NO. _____

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

Signature _____ Title _____ Date _____
(DPF - 04-04-2001) for Dec 11798 (REV March 1, 2000)

00-2431



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. 00-217

RESOLUTION

GRANTING A SPECIAL MANAGEMENT AREA USE PERMIT FOR SAND ISLAND WASTEWATER TREATMENT PLANT IMPROVEMENTS

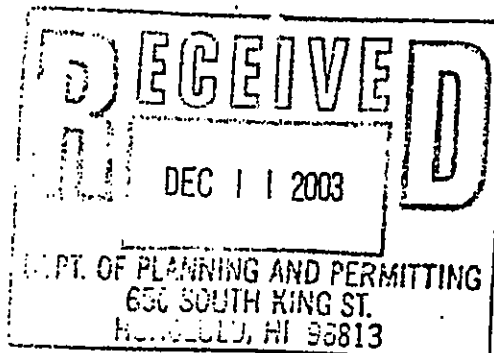
WHEREAS, the Department of Planning and Permitting (DPP) on August 17, 2000, accepted the application (No. 2000/SMA-59) of the Department of Design and Construction, herein referred to as the Applicant, for a Special Management Area Use Permit (SMP) to construct a disinfection facility, effluent pump station and electrical substation at the Sand Island Wastewater Treatment Plant on Sand Island, Oahu and identified as Tax Map Key 1-5-41: 5; and

WHEREAS, on September 29, 2000, the DPP held a public hearing which was attended by five (5) people, in which no one presented testimony; and

WHEREAS, on October 13, 2000, within ten (10) working days of the close of the public hearing, the DPP, having duly considered all evidence and reports of said public hearing and the review guidelines as established in Sections 25-3.1 and 25-3.2, Revised Ordinances of Honolulu (ROH), completed its report and transmitted its findings and recommendation of approval to the Council; and

WHEREAS, the City Council, having received the findings and recommendation of DPP on October 13, 2000, and at its meeting of November 15, 2000, having duly considered all of the findings and reports on the matter, approved the subject application for an SMP with the conditions enumerated below; now, therefore,

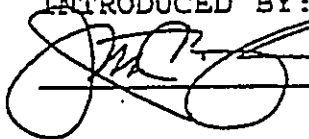
BE IT RESOLVED by the Council of the City and County of Honolulu that an SMP be issued to the Applicant under the following conditions:



RESOLUTION

BE IT FINALLY RESOLVED by the Council of the City and County of Honolulu that the Clerk be and is directed to transmit copies of this resolution to Mr. Randall Fujiki, Director of Planning and Permitting; Mr. Gary Yee, Director of Design and Construction; Dr. Don Hibbard, Administrator, State Historic Preservation Division, Department of Land and Natural Resources, 601 Kamokila Boulevard, 555 Kakahihawa Building, Kapolei, Hawaii 96707; and Mr. Peter Ono, Brown and Caldwell, 119 Merchant Street, Suite 200, Honolulu, Hawaii 96813.

INTRODUCED BY:

 (BR)

DATE OF INTRODUCTION:

OCT 17 2000
Honolulu, Hawaii

Councilmembers

DN 59423

CITY COUNCIL
 CITY AND COUNTY OF HONOLULU
 HONOLULU, HAWAII

do hereby certify that the foregoing RESOLUTION was adopted by the COUNCIL OF THE CITY AND COUNTY OF HONOLULU on the date and by the vote indicated to the right.

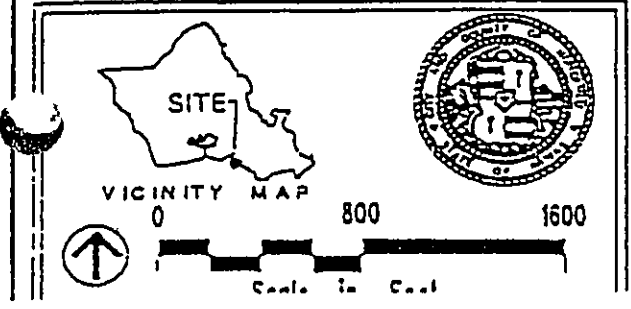
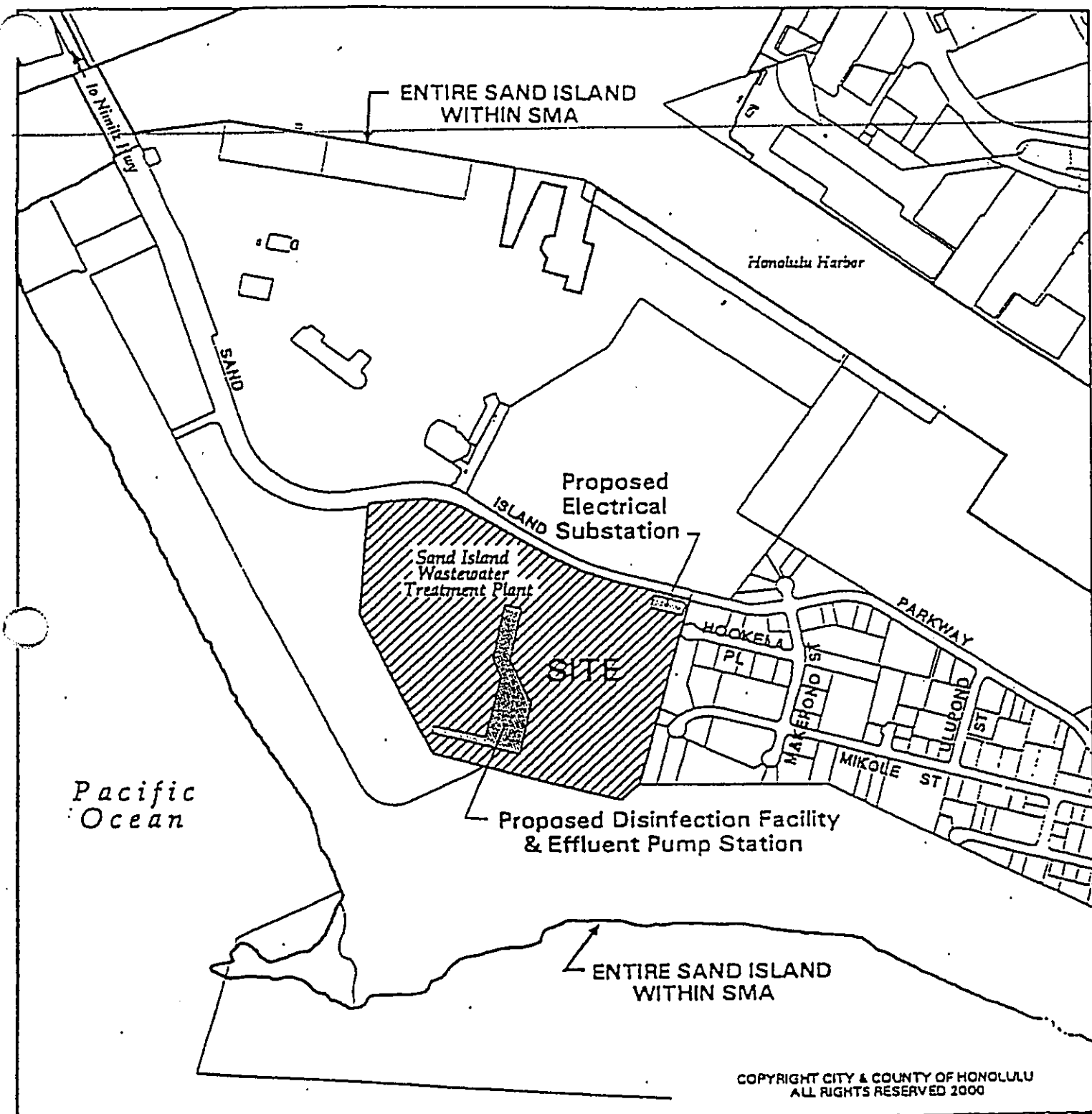
TEST: 
 NEVEVE G. WONG
 City Clerk


 JON C. YOSHIMURA
 CHAIR AND PRESIDING OFFICER

ADOPTED MEETING HELD			
11/15/00			
	AYE	NO	A/E
BAINUM	X		
CACHOLA	X		
DeSOTO	X		
FELIX	X		
HOLMES	X		
MANSHO	X		
MIRIKITANI	X		
OKINO	X		

Reference: D 776
 Report No. Z-425

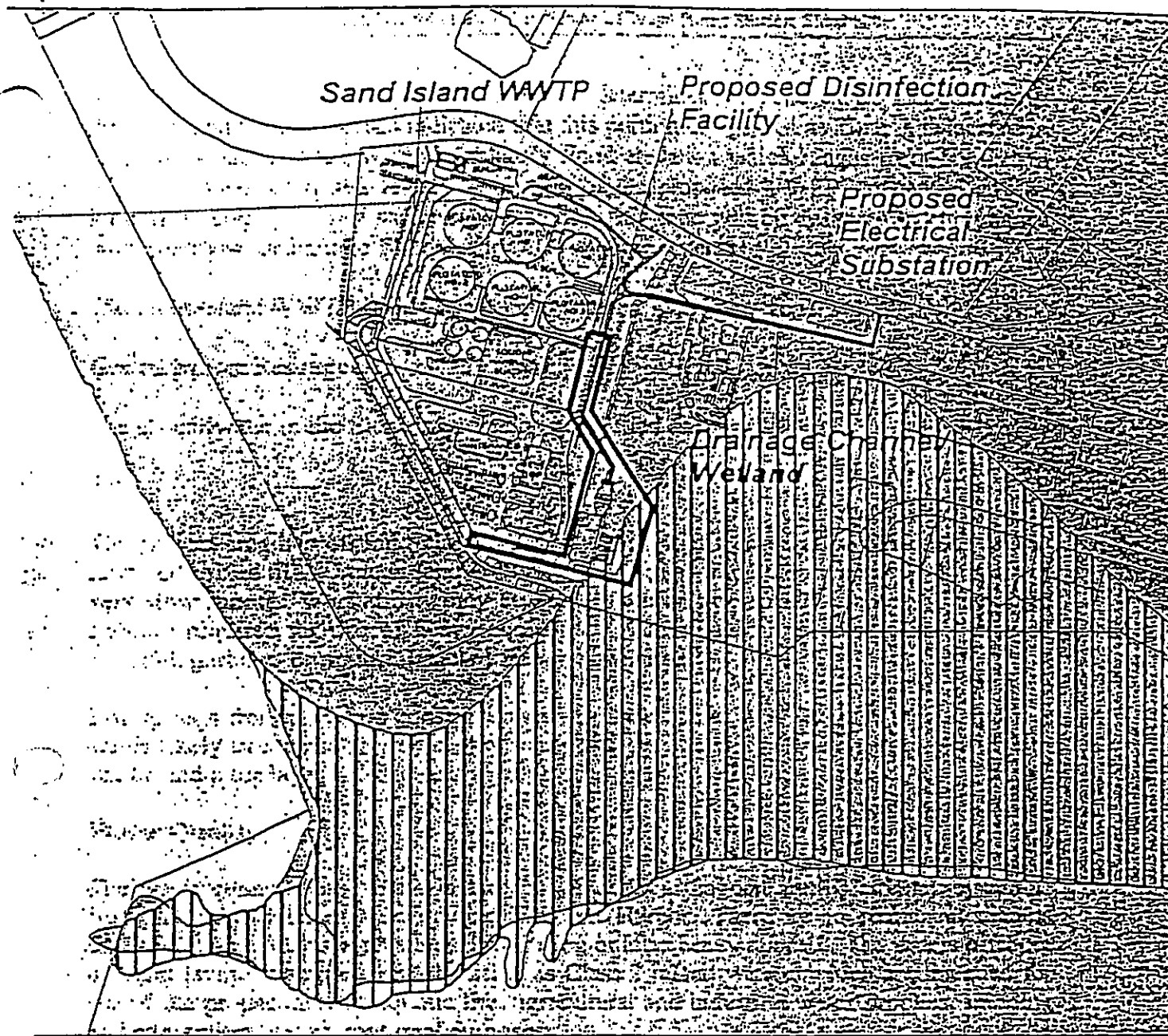
Resolution No.
00-217.



**LOCATION MAP
SAND ISLAND**

TAX MAP KEY: 1-5-41: 5

FOLDER NO.: 2000/SMA-59




Island of Oahu



Area of Interest

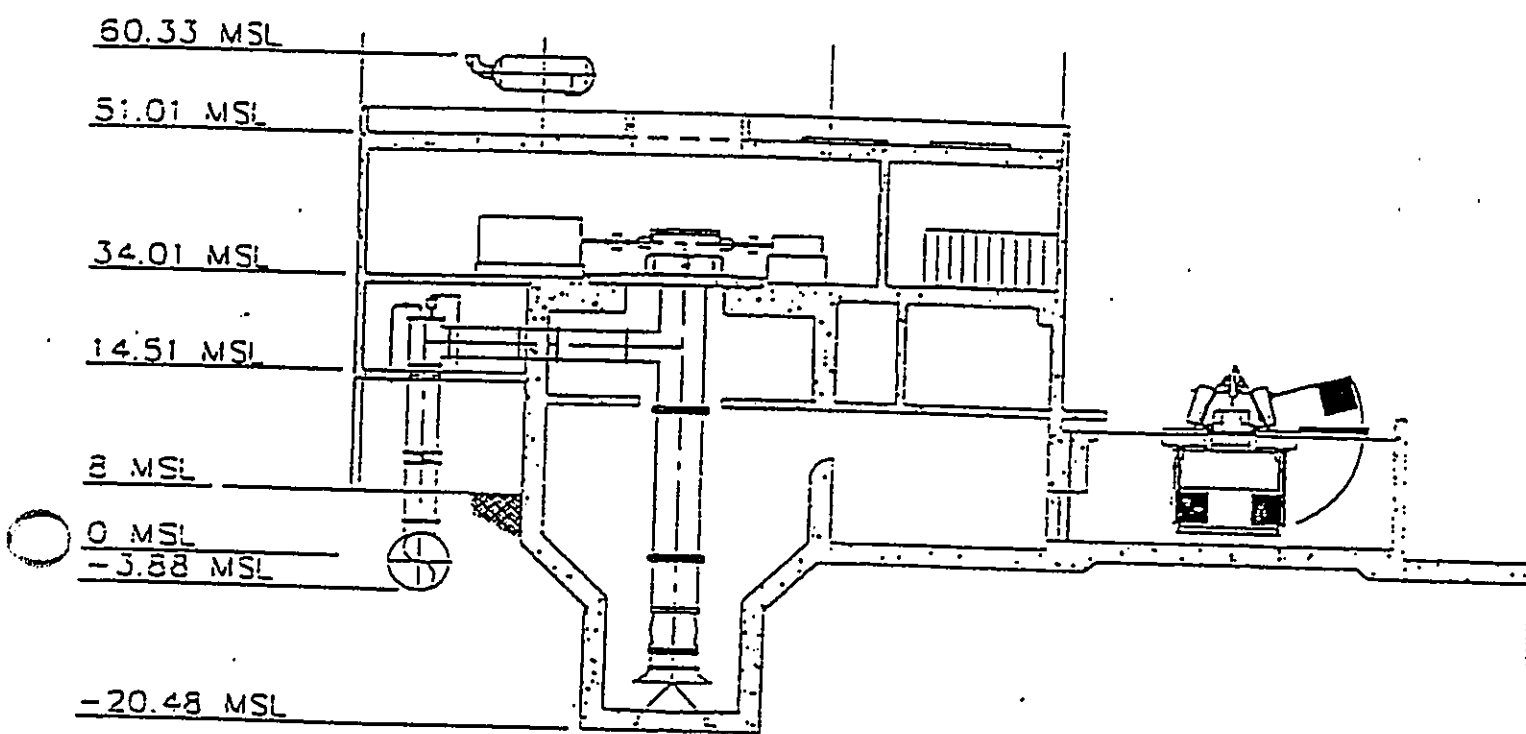


Legend

-  Flood Zone A
(remainder of Sand Island in Flood Zone X - outside 500 year flood plain)

**CROWN AND
ALDWELL**

SAND ISLAND WWTP DISINFECTION FACILITY
Site Plan and Flood Zone



Note: Project site located in City Land Use Ordinance
 Zone I-3, Waterfront Industrial District. Maximum
 allowable building height is 60 ft.

**CROWN AND
 CALDWELL**

SAND ISLAND WWTP DISINFECTION FACILITY
 Structural Elevation and Proposed Disinfection Facility

DEPARTMENT OF PLANNING AND PERMITTING
OF THE CITY AND COUNTY OF HONOLULU

STATE OF HAWAII

IN THE MATTER OF THE APPLICATION) FILE NO. 2003/SMA-36
)
 .OF)
)
 SYNAGRO-WWT, INC.)
)
 FOR A SPECIAL MANAGEMENT AREA)
)
 USE PERMIT)
)
)

FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND DECISION AND ORDER/RECOMMENDATION

I. APPLICATION

A. Basic Information

APPLICANT : Synagro-WWT, Inc.
LANDOWNER : City and County of Honolulu
LOCATION : Sand Island, Oahu
TAX MAP KEY : 1-5-041:005
LAND AREA : 1.1 acres of 50-acre Sand Island WWTP site
STATE LAND USE DISTRICT : Urban
DEVELOPMENT PLAN
LAND USE MAP : Public Facility
PUBLIC FACILITIES MAP : Government Building (within 6 years)
~~Energy-Generation/Sewage-Treatment Plant~~
(Modify Existing Facility, within and
beyond 6 years)

EXISTING ZONING : I-3 Waterfront Industrial
EXISTING USE : Wastewater Treatment Plant
SURROUNDING LAND USE : Industrial uses; Sand Island Recreational Park

B. Proposal

The applicant has been contracted by the City and County of Honolulu to construct and operate an In-Vessel Bioconversion Facility (Facility) at the Sand Island Wastewater Treatment Plant (SIWWTP). This Facility implements new technology to replace the existing sludge stabilization and treatment process, and will consist of a new anaerobic digestion, sludge heat drying and pelletization process.

The end-product of this new Facility will be a marketable Class A biosolid as classified by the U.S. Environmental Protection Agency. Biosolids, or dewatered sludge, will be converted to a quality-pasteurized product suitable for use as a soil conditioner and amendment.

Since it went into service in 1981, the SIWWTP has used low pressure oxidation (LPO) for liquid sludge stabilization, followed by centrifuge dewatering, incineration of dewatered sludge (cake) for volume reduction, and landfilling of the incinerator ash at the Waimanalo Gulch Sanitary Landfill. For the past ten years, the incinerator has not been in operation because of the Department of Environmental Services' (DES) determination that incineration and subsequent landfilling of ash are more expensive than the landfilling of stabilized sludge. This has subsequently increased the quantity of dewatered sludge being diverted to the landfill.

The existing LPO process and associated equipment have reached the end of their useful life and must be replaced with a more efficient process. Additionally, due to decreasing landfill capacity, the City and County of Honolulu must find an alternative means for disposing of the dewatered sludge.

The proposed In-Vessel Bioconversion Facility will include the following components:

1. New Anaerobic Digestion Complex

The new Anaerobic Digestion system will be located on the 1.1-acre vacant site east of the SIWWTP Solids Handling Building. The complex will include one 116-foot high, 2.3 million gallon capacity Egg-Shaped Digester (ESD), a 116-foot high, 0.53 million gallon sludge storage tank (SST), a 10,000-cubic-foot biogas storage tank, hydrogen sulfide scrubber, and associated auxiliary equipment (i.e., piping, valves) and controls. The ESD reduces solids and produces energy in the

form of methane, or biogas, which is used as a fuel source for the sludge heat drying system.

2. New Integrated Centrifuge Dewatering, Polymer Supply, Sludge Heat Drying System and Pelletization Equipment and Appurtenances

After digestion, the liquid digested biosolids will be pumped from the anaerobic digestion system to this new integrated system to be located in the existing Solids Handling Building. The sludge will be dewatered and dried in this second system component. The existing non-operational equipment in the Solids Building will be removed and the new integrated system will be installed, including: two high performance centrifuges, one polymer preparation and supply system, enclosed liquid and dewatered biosolids conveyance system, and one heat drying and pelletizing system.

Other equipment will be located outside and adjacent to the Solids Handling Building, including: two building air scrubbing systems, regenerative thermal oxidizer, nitrogen supply system, coating oil storage and supply system, two storage silos and one truck scale system, propane storage tank and a fuel oil #2 storage tank. Existing propane and fuel storage tanks may be used. The retrofitted building will also house personnel offices and locker rooms, motor control center, control room, maintenance shop, conference room, laboratory and storage areas.

3. Comprehensive Odor and Emission Control Systems

The proposed project will provide an essentially odor-free treatment process. Air emission and odor control will be achieved through containment at the equipment and building level, recycling process air, and treatment of exhaust. Much of the equipment is totally enclosed to prevent odors from escaping; the biogas will be treated to remove hydrogen sulfide and thereby reduce sulfur dioxide in the dryer exhaust; the use of negative pressure, venturi and chemical scrubbers, and a regenerative thermal oxidizer will also reduce odors and volatile organic compounds released to the atmosphere.

Presently, 8,468 dry tons per year of dewatered sludge from the SIWWTP are trucked to and disposed of at the City landfill. The proposed Facility will eliminate the need for this, since it will be designed to convert up to 10,000 dry tons of liquid sludge per year into a marketable pelletized fertilizer. In addition, the project will reduce energy consumption at the SIWWTP. Currently, the SIWWTP consumes: 1) 43,862 KWH per day of electrical power, 2) 248,930 gallons per day (gpd) of potable water, and 3) 2,776 gpd of fuel oil.

The proposed Facility is expected to consume: 1) 12,600 KWH per day, 45,000 gpd of potable water, and 3) 685 gpd of fuel oil. The Facility will substitute biogas as renewable energy for a significant portion of the fuel currently used, and recycle approximately 763,200 gpd of plant effluent during the operational day.

The Facility's operational schedule is based upon the amount of feed material received at the plant, which typically will operate 3.5 to 5 days per week. The remaining 2 to 3.5 days will be used for maintenance.

The applicant will also be responsible for marketing the final product. Potential markets or end users include wholesale fertilizer distributors, local golf courses and recreational parks, wholesale growers, and diversified agriculture. The City will be entitled to sixty percent (60%) of the net revenue collected from the final product revenue over a base rate of twenty dollars (\$20.00) per ton. The City will also receive up to two thousand (2,000) tons per year of the final product.

C. Project Construction Schedule and Cost

The City anticipates design and permitting for the project to be completed in July 2003. Construction is anticipated to begin in September 2003 and completed in September 2004. Planned start-up date for the facility is October 2004.

The estimated project construction cost is \$33.8 million dollars.

D. Background

Two previous Special Management Area Use permits were approved for the SIWWTP. 2000/SMA-59 was approved on November 15, 2000, for a new ultraviolet (UV) disinfection facility, effluent pump station, and electrical substation at the existing WWTP. 2001/SMA-19 was approved on July 11, 2001, for the conversion of six existing flotation clarifiers, an inorganic chemical feed system building, a headworks facility, an odor control system, a return-flow pump station and modification to the SI Wastewater Pump Station.

II. FINDINGS OF FACT

On the basis of the evidence presented, the Director has found:

A. Description of Site/Surrounding Uses

~~The project is located on a 1.1-acre portion of the 50-acre SIWWTP site on the southern portion of Sand Island. The SIWWTP is owned and operated by the City and County of~~

Honolulu and is the largest treatment plant in the State. It has a capacity of approximately 75 mgd and services the metropolitan Honolulu area from Moanalua-Aliamanu to Niu Valley-Paiko Peninsula. Land in the vicinity of the WWTP is used primarily for industrial purposes, including an adjacent shipping container facility (Matson) and an industrial park. The Sand Island State Recreational Area is located to the south of the treatment plant site, along the southeast coast of Sand Island. The Sand Island Treatment Center (an alcohol and drug rehabilitation facility) is located away from the WWTP on the eastern end of the parcel. Topography of the project site and the entire SIWWTP is nearly flat.

The project site is located within the Special Management Area (SMA), the State Urban District, and is zoned I-3 Industrial District.

B. Compliance with Environmental Review Requirements

Because the proposed action will require the use of County lands and funds and is located within the Special Management Area, the Department of Environmental Services assessed the impacts of the proposed project in an Environmental Assessment (EA) under the provisions of both Chapter 343, the State's environmental review statute, and Chapter 25, Revised Ordinances of Honolulu. The Final EA was accepted by the Director of Environmental Services and a finding of no significant impact (FONSI) was issued on April 16, 2003. The FONSI determination was published in the Office of Environmental Quality Control's The Environmental Notice on May 8, 2003.

C. Compliance with City Land Use Policies

In accordance with the Land Use Ordinance (LUO), the wastewater treatment plant is considered a public use. Public uses are permitted in all zoning districts.

D. Public Agency Comments

During the EA process, comments were requested from the following public agencies and community organizations.

CITY: Department of Planning and Permitting; and Department of Environmental Services.

STATE: Department of Health- Solid and Hazardous Waste, Wastewater, and Clean Water Branches; Department of Land and Natural Resources-Water Resource Management and State Parks Divisions; and Office of Environmental Quality Control.

FEDERAL: Department of the Army, U.S. Army Engineer District, Honolulu;

and Federal Aviation Administration.

COMMUNITY: Kalihi-Palama Neighborhood Board No. 15; Sand Island Business Association; and Sand Island Treatment Center.

Comments received were addressed in, and attached to, the Final Environmental Assessment dated April 2003.

E. Public Hearing

The DPP held a public hearing on the Special Management Area Use Permit (SMP) application on June 18, 2003, at the Liliha Public Library. In addition to the agent and a representative of the applicant, two members of the public were present.

The agent and the applicant's representative provided detailed explanations of the project's technology and responded to questions. No written or oral testimony was provided.

III. ANALYSIS

A. Compliance with Enabling Legislation

The proposed project was reviewed in accordance with the objectives, policies, and guidelines established in Sections 25-3.1 and 25-3.2 of the SMA Ordinance, Chapter 25, ROH.

1. Coastal Hazards

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) locates the proposed project site within Flood Zone X, which are areas that are determined to be outside the 500-year flood plain. Construction within Flood Zone X is not subject to the Flood Hazard requirements of the LUO.

The project site also lies outside the tsunami inundation zone delineated on the current Civil Defense Tsunami Evacuation Map.

2. Alteration to Land Forms

The proposed project will be developed within the footprint of the existing SIWWTP, which has previously been graded and developed. Only minimal disturbance will be required for placement of the ESD pilings. The SSWTP site is generally flat, with elevations ranging from 5 to 9 feet above mean sea level.

The soils of the proposed project site are classified by the U.S. Soil Conservation Service as fill land and Jaucas sand. The fill land is created primarily from excavated and dredged material; Jaucas sand is found in a relatively small area of the existing WWTP and is described as having rapid permeability and slow to very slow runoff.

3. Solid and Liquid Waste Disposal

The purpose of the proposed project is to improve the existing management of liquid waste at the SIWWTP. Both the anaerobic digestion process for sludge stabilization and its' ability to produce valuable biosolids will conform to recent U.S. EPA programs to promote beneficial reuse of sludge. According to the applicant, the EPA has reported on the successful use of biosolids to reclaim surface strip mines, parks, wetlands and landfills, as well as improve crop yields and growth in agricultural applications.

The Facility will also eliminate the need to landfill the SIWWTP sludge, thereby extending the life span of the City landfill. Utilization of biogas produced on-site will reduce the dependence on expensive non-renewable fuel oil.

4. Drainage and Water Quality

The project will result in less than half an acre increase in covered area. All storm water runoff will be contained on-site and recharged to groundwater with a ponding basin. The ground water in the areas surrounding the SIWWTP is classified as brackish basal water. There are no drinking water sources on or surrounding the WWTP, nor is the site contiguous to the ocean or any streams. Drainage and erosion control plans are required as part of the permit process to ensure that project construction and operations do not adversely impact surrounding near-shore waters.

The off-shore waters of the State Park are designated as Class 2 inland waters, which are classified for use in the propagation of aquatic life, as well as agricultural and industrial water supplies, shipping and navigation and recreational purposes. Monitoring of water quality will continue as part of the NPDES permit for the wastewater facility to ensure that U.S. EPA and State Department of Health standards are maintained.

Effluent from the WWTP is discharged through an ocean outfall about 9,000 feet off-shore, at an average depth of 240 feet. The proposed project is expected to improve this discharged effluent due to the reduction in flow and biological oxygen demand (BOD) concentration in the centrate that is recycled to the head of

the plant.

5. Wildlife and Plant Habitats

a. Flora and Fauna

No rare, threatened or endangered species of flora or fauna are found within the project site or surrounding areas. Flora and fauna in the area are primarily introduced species. The proposed project will be located within the existing WWTP facility, a previously altered environment.

b. Wetlands

A man-made drainage ditch, about 30 feet wide and over 700 feet long located at the northeast side of the WWTP, was identified as a wetland by the Army Corps of Engineers. This wetland is located approximately 300 feet north of the proposed project site, and will not be impacted by the proposed project. Upon review of the project's EA, the U.S. Army Corps of Engineers determined that the proposed project would not involve work in waters of the United States, including adjacent wetlands, and thus no Department of the Army permit was required.

6. Recreation Resources/Shoreline Access

The proposed improvements will not have any adverse impact on any public recreation areas or shoreline access. The Sand Island State Recreational Park is more than 1,000 feet makai of the site. There are no other public beaches or recreation areas in this developed area.

7. Historic And Cultural Resources

The SIWWTP and the proposed facility site are located on fill land that has already been subject to extensive grading and development. The project's FEA states that according to the State Historic Preservation Division, there are no archaeological or historic resources known to exist at the WWTP site.

8. Scenic and Open Space Resources

The project site is in the Downtown Section of the South Shore Viewshed, as identified in the City and County's 1987 Coastal View Study. This section includes Honolulu Harbor, Sand Island, and the downtown business community.

Sand Island Parkway is listed as a coastal roadway and Sand Island Recreational Park a significant stationary view. Most of the proposed project equipment will

be located inside the existing Solids Handling Building; some will be outside and adjacent to the building. All of the equipment will comply with the site's 60-foot height limit except the proposed digester and sludge storage tank, which are both designed at an approximate height of 116 feet. The applicant has applied for a height waiver from this height limit for both structures concurrent with this SMP application. While both of the structures will be visible from the downtown Honolulu Harbor area, Sand Island's industrial character is already reflected in any view plane (See Exhibit 5). An example are the cranes used by Matson Shipping, which are approximately 250 feet high (See Exhibit 6). From Sand Island Parkway, the view of the digester will be blocked for the first 35 vertical feet by existing equipment. From Sand Island Recreational Park, the view of the digester will be blocked for the first 40 vertical feet. The digester and storage tank are not anticipated to reduce or impede views from Sand Island Parkway, the Recreational Park, or urban Honolulu. However, it is reasonable to require that the structures be painted an appropriate color to blend in with surrounding industrial equipment as a condition of SMP approval.

IV. CONCLUSIONS OF LAW

The Director hereby makes the following Conclusions of Law:

On the basis of the analysis under Chapter 25, ROH, the proposed development is found to be consistent with the objectives, policies, and guidelines established in Sections 25-3.1 and 25-3.2 of the SMA Ordinance.

V. RECOMMENDATION

Based on the preceding analysis and conclusions, it is recommended that this application for an SMP be APPROVED, subject to the following conditions:

- A. Approval of this permit covers the development of an In-Vessel Bioconversion Facility, as depicted in Exhibits 2, 3, and 4, and consisting of the following elements:
 - anaerobic digestion complex;
 - integrated centrifuge dewatering, polymer supply, sludge heat drying system and pelletization equipment and appurtenances; and
 - comprehensive odor and emission control systems.
 - B. Prior to the issuance of building permits for the anaerobic digester and sludge storage tank, the applicant shall obtain approval of a height waiver for the two structures from the Director of the DPP.
-

- C. Prior to the issuance of building permits for the anaerobic digester and sludge storage tank, the applicant shall obtain the approval of the DPP's Urban Design Branch for the color of the structures.
- D. Approval of this Special Management Area Use Permit does not constitute compliance with other Land Use Ordinance or governmental agencies' requirements, including building permit approval. They are subject to separate review and approval. The Applicant shall be responsible for insuring that the final plans for the project approved under this permit comply with all applicable Land Use Ordinance and other governmental agencies' provisions and requirements.
- E. If, during construction, any previously unidentified archaeological sites or remains (such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, pavings, or walls) are encountered, the Applicant shall stop work and contact the State Department of Land and Natural Resources, Historic Preservation Division immediately. Work in the immediate area shall be stopped until the Division is able to assess the impact and make further recommendations for mitigative activity.
- F. Construction shall be in general conformity with the plans on file with the Department of Planning and Permitting and in accordance with the Land Use Ordinance. Any change in the size or nature of the project which has a significant effect on coastal resources addressed in Chapter 25, ROH, shall require a new application. Any change which does not have a significant effect on coastal resources shall be considered a minor modification and therefore permitted under this resolution, upon review and approval of the Director of Planning and Permitting.

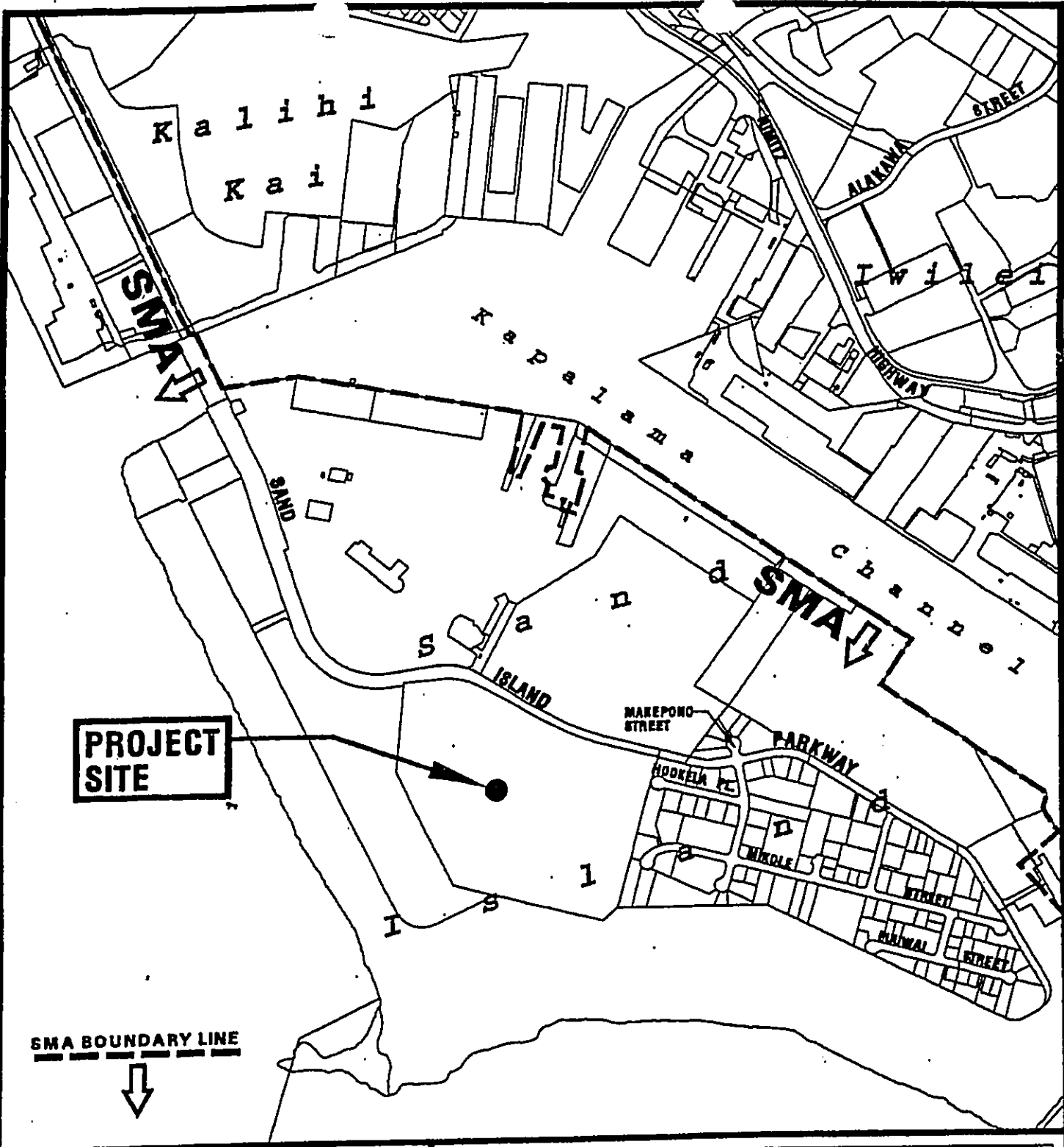
Dated at Honolulu, Hawaii, this 26th day of June, 2003.

DEPARTMENT OF PLANNING
AND PERMITTING
CITY AND COUNTY OF HONOLULU
STATE OF HAWAII

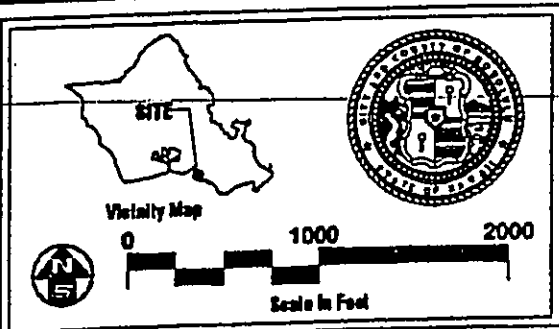
By 
ERIC G. CRISPIN, AIA
Director

EGC:pl
Attachments

Doc..218549



SMA BOUNDARY LINE



LOCATION MAP

Sand Island Wastewater Treatment Plant

FOLDER NO.: 2003/SMA - 36

TAX MAP KEY: 1-5-41:5

EXHIBIT 1

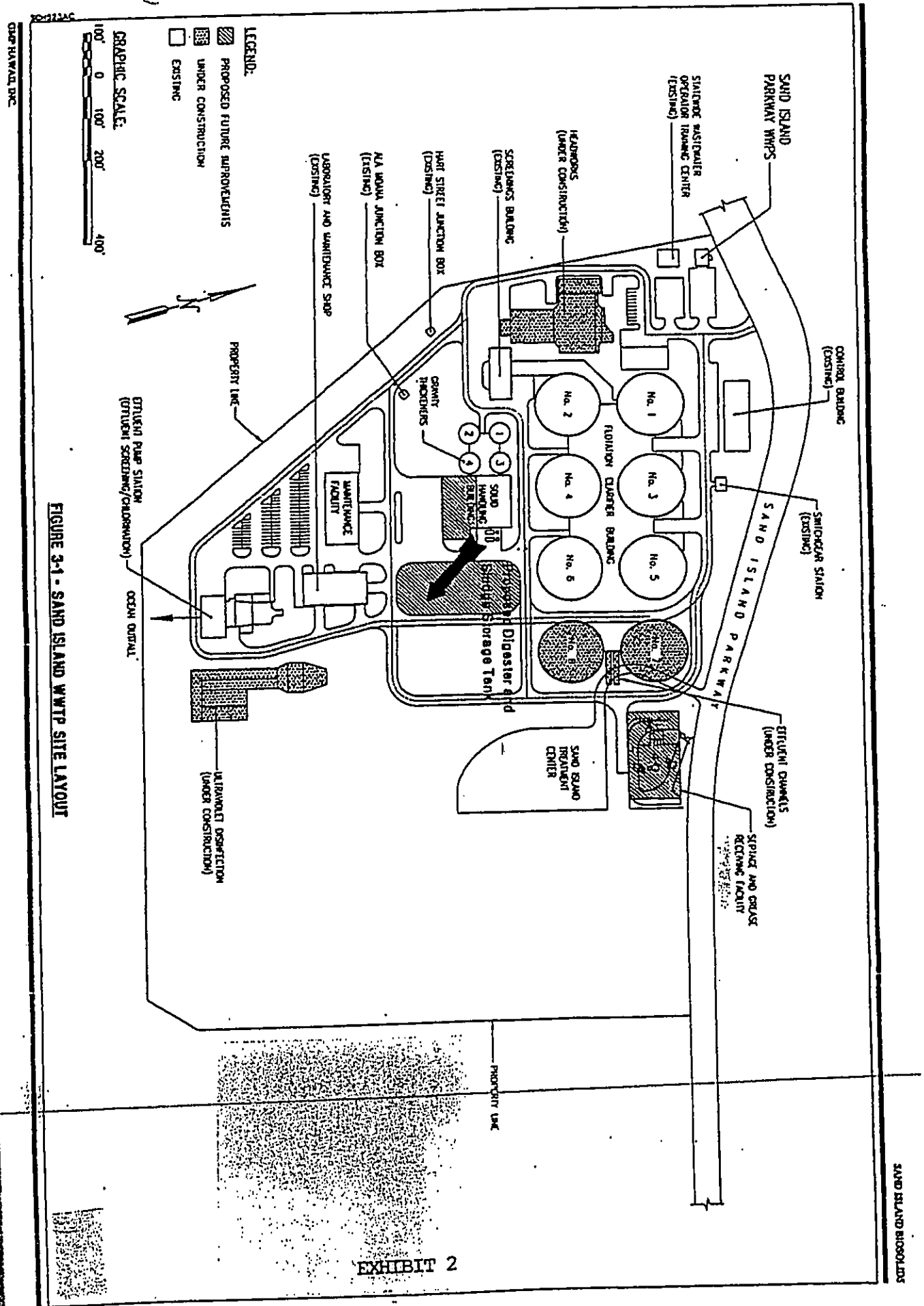


EXHIBIT 2

SAND ISLAND BIOSOLIDS

CH2M HILL
SANITATION DIVISION

SOLIDS HANDLING BUILDING
INCINERATOR AREA

DIGESTER #1

SLUDGE STORAGE TANK

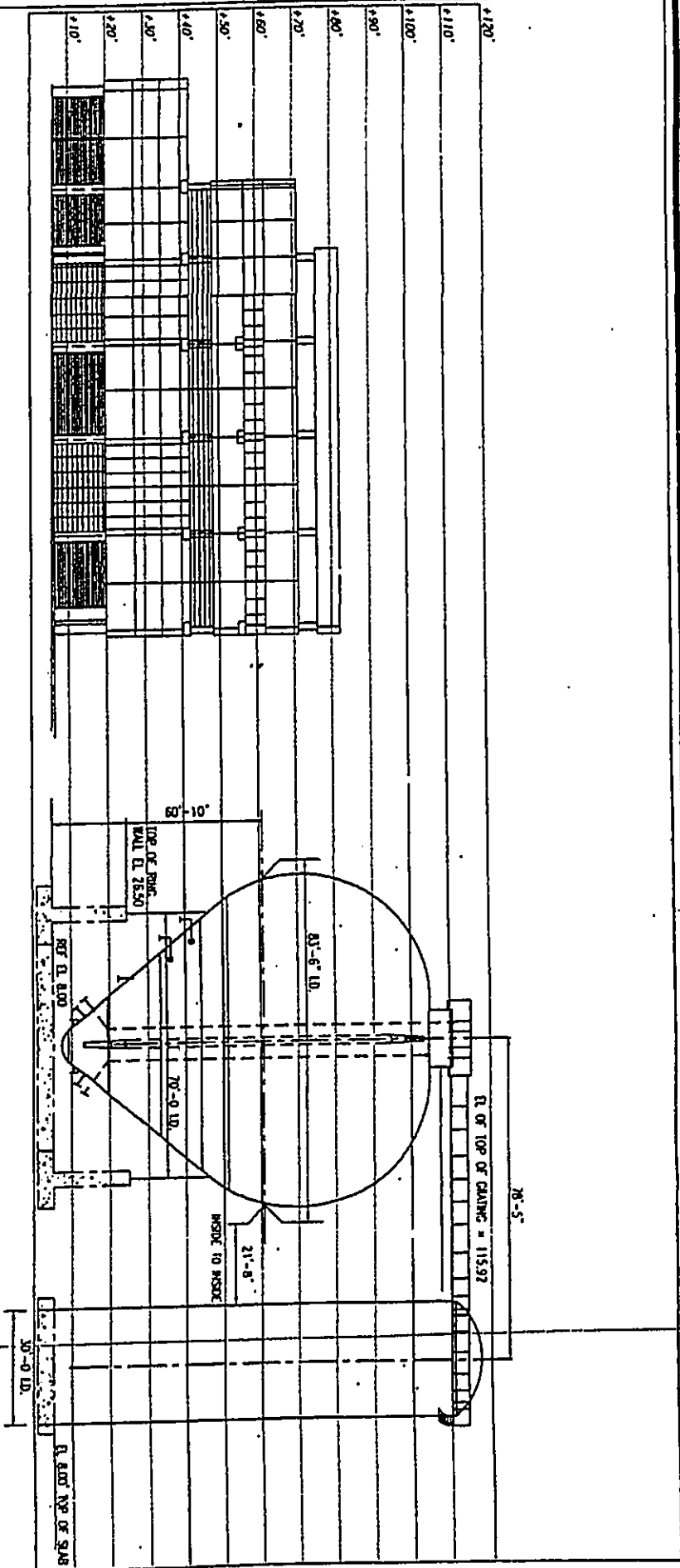


Figure 4-1 SOUTH ELEVATION VIEW OF 2.3 MGAL EGG SHAPED DIGESTER WITH SOLIDS BUILDINGS

EXHIBIT 3

SAND ISLAND PROJECT

DART HAVALE INC.
OCTUBER 2002

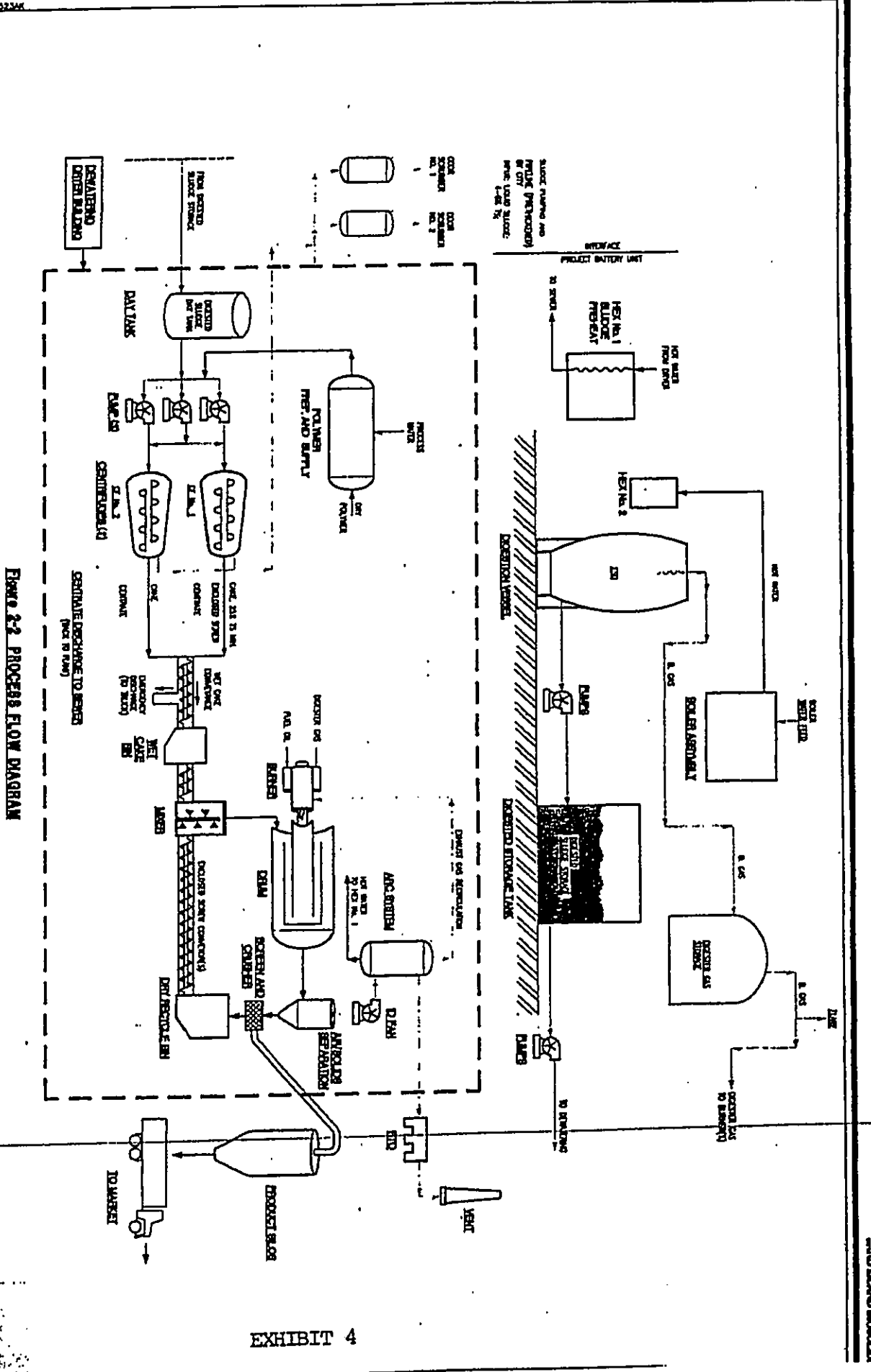
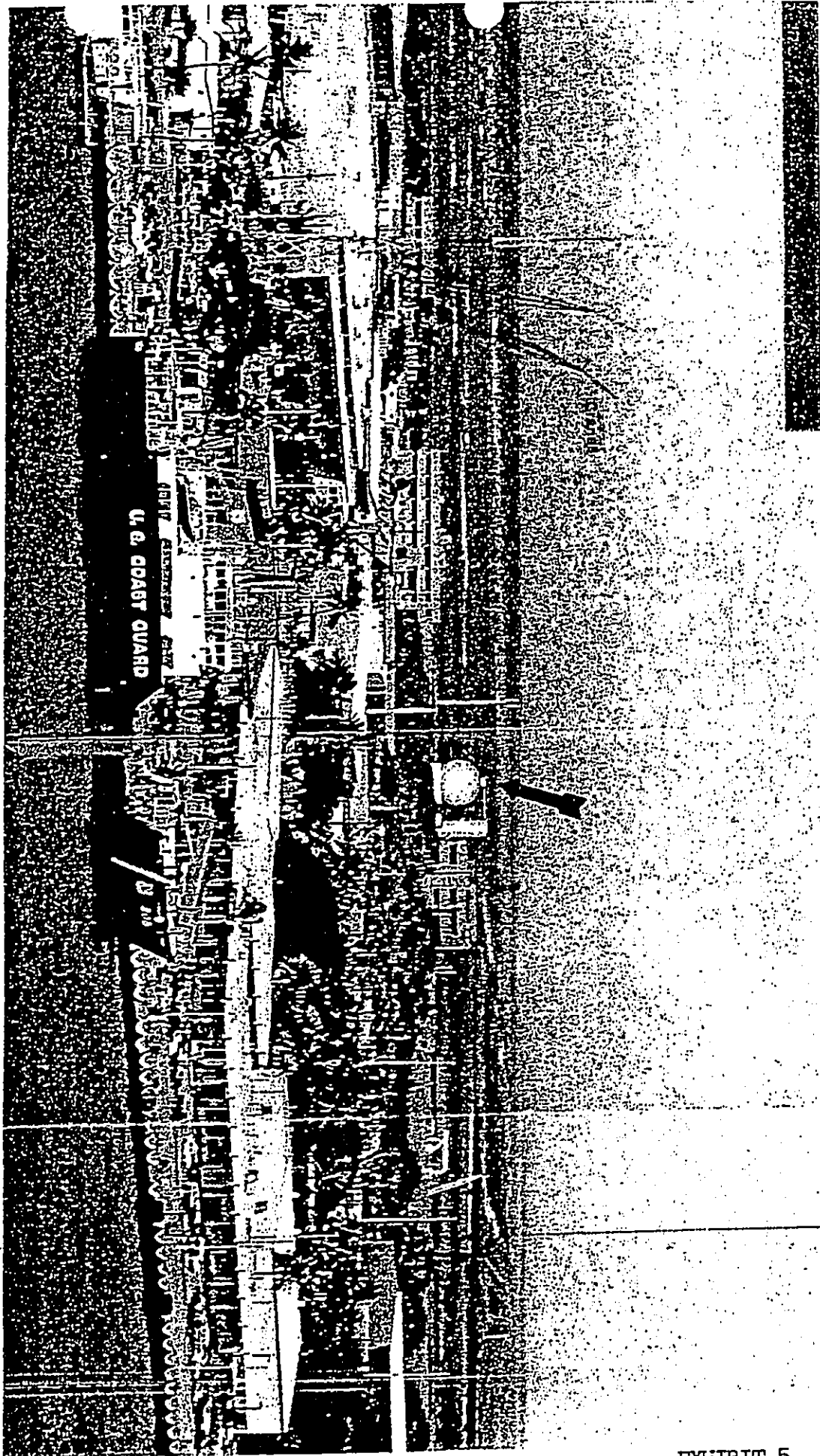
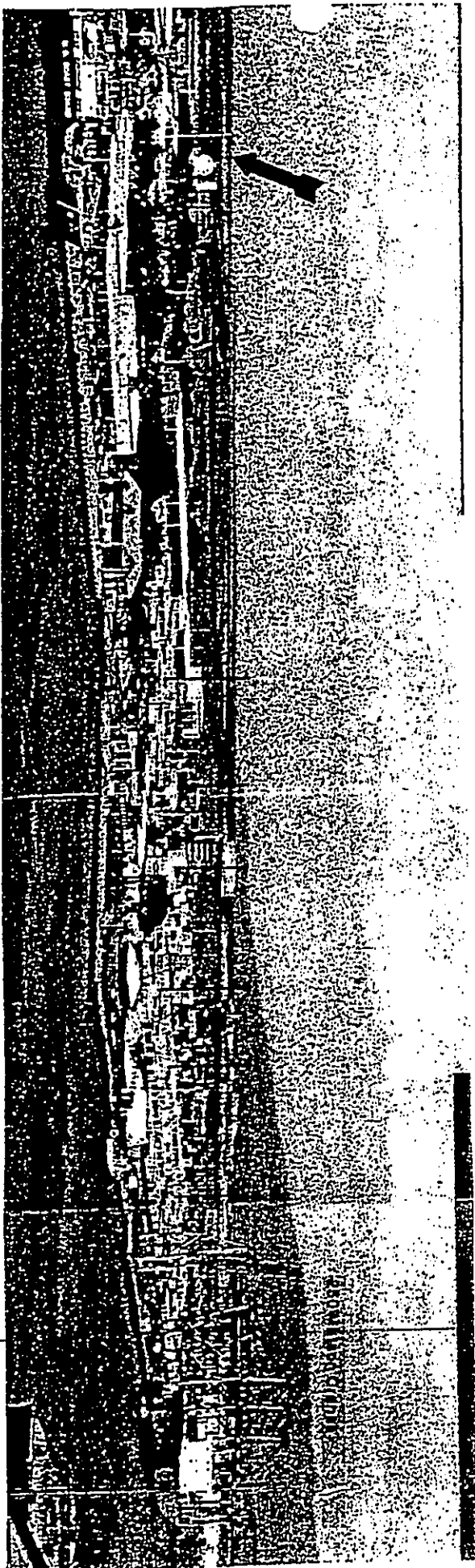


FIGURE 3-2 PROCESS FLOW DIAGRAM



Simulated Photo of New Facility at Sand Island WWTP
Taken from Aloha Tower



Simulated Photo Taken from Aloha Tower

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET • HONOLULU, HAWAII 96813
 TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

JEREMY HARRIS
 MAYOR



ERIC G. CRISPIN, AIA
 DIRECTOR

BARBARA KIM STANTON
 DEPUTY DIRECTOR

2003/W-29 (GU)

PERMIT	ZONING WAIVER (W)
File Number	: 2003/W-29
Applicant	: CBI Services, Inc.
Landowner	: City and County of Honolulu
Agent	: Don Clegg, Analytical Planning Consultants, Inc.
Location	: 1350/1240 Sand Island Parkway - Sand Island
Tax Map Key	: 1-5-41:5
Zoning	: I-3 Waterfront Industrial District
Date Received	: April 28, 2003
Date Accepted	: May 5, 2003

APPROVAL of the request to waive Land Use Ordinance Section 21-3.130-1 and Table 21-3.5, to allow plans labeled Exhibit "A", subject to the following conditions:

1. The maximum height of the two structures (the egg-shaped digester and the sludge storage tank) shall be 116 feet.
2. All proposed lighting shall be designed and/or oriented to minimize light spillage onto adjacent lots.
3. This application has only been reviewed and approved pursuant to the provisions of Section 21-2.130 (Waiver of Requirements), and development shall comply with all other provisions of the Land Use Ordinance.
4. Approval of this waiver shall not be construed as approval of any building/sign permit application; such applications are reviewed separately and shall comply with applicable codes and regulations.
5. The Director of Planning and Permitting shall reserve the right to impose additional requirements, if necessary, to ensure the health, welfare, and safety of the people of the City and County of Honolulu.

6. This approval may be revoked by the Director of Planning and Permitting when there is a breach of any of the conditions stated above; provided that for good cause, the Director may amend the above conditions.

POSSE Doc. 218602

THIS COPY, WHEN SIGNED BELOW, IS NOTIFICATION OF THE ACTION TAKEN.

	Director	February 2, 2004
SIGNATURE	TITLE	DATE

This approval does not constitute approval of any other required permits, such as building or sign permits.



PHONE (BUS): (808) 534-5695
FAX: (808) 599-1533

ANALYTICAL PLANNING CONSULTANTS, INC.
928 NUUANU AVENUE, SUITE 502 • HONOLULU, HI 96817

May 31, 2005

Mr. Henry Eng FAICP, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, HI 96813

Attn: Geri Ung

Dear Mr. Eng,

This letter amends my letter of April 18, 2005

The City and County of Honolulu has contracted with Synagro to construct an In-Vessel Bioconversion facility, to be owned by the City, at the Sand Island Waste Water Treatment Plant. The new facility will convert the solid material in the sewage into a class A fertilizer product. Currently the unconverted "sludge" is disposed of in the Waimanalo land fill.

A Special Management Area Permit, 2003/SMA-36, was approved for the plant which included a 116 feet tall egg shaped digester, a 116 feet tall sludge storage tank and a silo with two in line tanks to store the finished fertilizer pellets. The pellets in either tank will be released through an activator chute at the bottom of the tank into a trough where they will be coated with a light oil to prevent dust formation. Trucks will drive under the two loadout spouts from the trough and the fertilizer pellets will be loaded on the trucks by gravity feed. The loading process will be controlled such that no fugitive fertilizer products can discharge into the area. The proposed tank structure was 59' 8" in height. The egg, sludge storage tank and the silo are with 60 feet of each other. A height waiver, 2003/W-29, was approved for the Digester and the Sludge Tank, and both are currently under construction.

After an updated review of plant operations it was determined that more storage was needed and the storage silo needed to be higher than the original design. The new design height is 77 feet 2 inches which will require a height waiver, (the permitted height is 60 feet). The applicant is Andritz-Ruthner Inc. acting for the City and County.

(2)

For the following reasons the applicant is requesting that the DPP approve a minor modification to the existing height waiver (2003/W-29) for the egg and the sludge tank to add the silo, and approve a minor modification to the SMP (2003/SMA-36), for the additional height.

1. The silo is in the same location as was shown in the original building permit plans.
2. The requested silo height is still 39 feet lower than the height of the egg and the sludge tank.
3. At 77' 2", the silo will be lower than the top of the existing solids handling building which is located next to the silo and is approximately 80 feet in height.
4. All three structures are within 60 feet of each other.
5. Given the surrounding structures and uses, the request represents a only a modest increase in height and will have a negligible visual impact on the general area.
6. There will be sufficient storage capacity to permit trucks to load from one of the tanks while the plant is discharging the finished pellets into the other tank.
7. The increase in storage capacity will provide the needed flexibility to meet variations in treatment plant output and permit continuous operation of the drier 7 days per week if needed.
8. The increase in storage capacity will also allow for better scheduling of truck trips during non peak traffic hours. With the original capacity, if the silo became full, trucks would need to load and transport the contents of the silo regardless of the time of day.
9. With increased capacity larger trucks can be used to transport the pellets resulting in fewer trips.
10. The increase in storage capacity will permit adequate down time for scheduled and emergency maintenance of one of the tanks.
11. All three structures are located on City property zoned for industrial uses.
- ~~12. Time is critical in order to meet EPA requirements, and to cease taking inadequately processed sludge to the Waimanalo land fill for disposal.~~

(3)

Enclosed are a site plan, an original elevation of the silo, a corrected elevation of the silo, and an elevation which includes the egg digester, the sludge storage tank, and the solids handling building.

Analytical Planning Consultants Inc. (APC) is the agent for Andritz Inc. If there are any questions please contact me at 536-5695.

Sincerely,

Donald Clegg

Donald Clegg
President

7/e

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. INTERNET: www.honolulu.gov • INTERNET: www.honolulu.gov

MUFI HANNEMANN
MAYOR



HENRY ENG, FAICP
DIRECTOR

DAVID K. TANQUE
DEPUTY DIRECTOR

2005/ELOG-866(gu)
2003/SMA-36
2003/W-29

June 6, 2005

Mr. Don Clegg
Analytical Planning Consultants, Inc.
928 Nuuanu Avenue, Suite 502
Honolulu, Hawaii 96817

Dear Mr. Clegg:

Minor Modification Request, Special Management Area Use Permit
File No. 2003/SMA-36 & Height Waiver - File No. 2003/W-29
Sand Island In-Vessel Bioconversion Facility
Tax Map Key 1-5-041:005

This responds to your request of May 31, 2005, which supersedes your letter of April 18, 2005, on behalf of Andritz-Ruthner Inc. (acting for the City and County of Honolulu) for a minor modification to 2003/SMA-36 and 2003/W-29 related to the above-named facility. City Council Resolution 03-193, FD1, approved 2003/SMA-36 on January 28, 2004, and granted a Special Management Area Use permit for the construction and operation of the In-Vessel Bioconversion Facility at the existing Sand Island Wastewater Treatment Facility site. Condition C of the Resolution required the applicant to obtain a waiver from the Department of Planning and Permitting (DPP) to allow the proposed 116-foot anaerobic digester and sludge storage tank to exceed the site's 60-foot height limit. Waiver 2003/W-29 to allow these 116-foot tall structures was approved by the DPP on February 2, 2004.

Your modification request is to allow the facility's two storage silo tanks to exceed the 60-foot height limit and be constructed to a height of 77 feet, 2 inches (77'-2"). Although the silos were originally designed to a 58-foot height, you state that an updated review of plant operations has determined that a height of 77'-2" is required to increase silo storage capacity for greater system efficiency.

As justification for your request, you state that the increased storage capacity would provide needed flexibility in addressing variations in treatment plant output. It would allow continuous operation of the dryer (within the existing solids handling building) 7 days a week, if necessary, and permit trucks to load from one storage tank while the other tank receives finished pellets

Mr. Don Clegg
Page 2
June 6, 2005

from the plant. The increased storage capacity would also allow adequate down time for scheduled and emergency maintenance of the individual tanks.

Approval of the request would further permit the use of larger trucks to transport the end-product pellets, resulting in fewer trips, and enable the scheduling of truck trips during non-peak traffic hours. The original storage capacity would require trucks to load and transport the contents of the silos regardless of the time of day.

The silos will remain in the same location as shown on the original plans, which is within 60 feet of the digester and sludge storage tank. At 77'-2", the silos would still be 39 feet lower than both of those structures, and lower than the 80'-0" high solids handling building adjacent to the silos.

Finally, you state that the request represents only a modest increase in height and will have a negligible visual impact on the general area, which is zoned for industrial uses.

We note that Condition G of Resolution 03-193, FD1 states, in part, "Any change which does not have a significant effect on coastal resources shall be considered a minor modification and therefore permitted under this resolution, upon review and approval of the Director of Planning and Permitting".

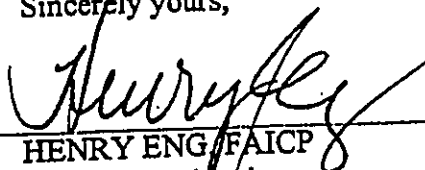
Upon consideration of your request and supporting information, the DPP agrees that your request represents a relatively modest height increase that will result in improved efficiency of the facility's operations, with no significant effect on coastal resources.

Therefore, please be advised that the DPP hereby **APPROVES** the requested minor modification to 2003/W-29 to allow the silos to be constructed to a height of 77'-2".

Additionally, having also determined that the requested height increase for the storage silo will not have a significant effect on coastal resources, the DPP also hereby **APPROVES** a minor modification to Resolution 03-193, FD1 (as permitted by Condition G) for that increase.

We hope this addresses your concerns. Should you have any questions, please contact Geri Ung of our staff at 527-6044.

Sincerely yours,


HENRY ENG, FAICP
Director of Planning
and Permitting

Appendix G

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O

Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

APPENDIX G
PRECONSULTATION LETTERS

112850

Sand Island Business Association

5 JUL 20 AM 11:33

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

July 18, 2005

Wayne M. Hashiro, P.E., Director
Dept. of Design & Construction
650 S. King St., 11th Fl.
Honolulu, HI 96813

Attn: Denise Wong

Sand Island WWTP Soil Management Project – Re-use of Excess Soil

Dear Director Hashiro:

Thank you for your inquiry dated July 14, 2005. Please be advised that the Sand Island Business Association, landlord for the Sand Island Industrial Park, has no objection to the Department's plan for the re-use of soil on site.

Very truly yours,


Rodney Kim
Executive Director

113008



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
KILAUEA, HAWAII 96858-5440

DEPT OF DESIGN & CONSTRUCTION
C&C OF HONOLULU

REPLY TO
ATTENTION OF

5 JUL 21 11:14 AM '05

2005 JUL 7

du-h-tt 112986
deg
uw 7/21

Regulatory Branch

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

Mr. Wayne M. Hashiro
Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

Dear Mr. Hashiro:

This responds to your request dated July 14, 2005, for comments regarding the preparation of a draft Supplemental Environmental Assessment (dEA) for the proposed soil management project at the Sand Island Wastewater Treatment Facility, Kalihi, Oahu Island (TMK (3)1-5-41: por. 19). Based on the information provided, I have determined that this location is in an upland area, and outside the limit of our jurisdiction. Therefore a Department of Army (DA) permit will not be required. In the future, and if site management activities contemplate the construction of drainage culverts into nearshore ocean waters, consultation should take place with this office to determine the applicability of Section 404 of the Clean Water Act.

File Number POH-2005-402 has been assigned to this project. Please feel free to contact Mr. Farley Watanabe of my staff at 438-7701, or Farley.K.Watanabe@usace.army.mil if you have additional questions. In future correspondence with this office please amend your mailing address to read "Honolulu District" instead of "Pacific Ocean Division" to ensure timely receipt and response.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

Copy furnished:

Project Manager, Environet, Inc., 2850 Paa Street, Suite 212, Honolulu, HI 96819
Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control, 235 South Beretania Street, Suite 702, Honolulu, HI 96813

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

LAND USE COMMISSION

P.O. Box 2359
Honolulu, Hawaii 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

113328
ANTHONY J.H. CHING
EXECUTIVE OFFICER

REC EIVL

5 JUL 25 09:10

BES
WAS

July 21, 2005

Wayne M. Hashiro, P.E.
Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Hashiro:

Subject: Sand Island WWTP Soil Management Project
TMK No. (3) 1-5-41: 05 (portion of)

We acknowledge receipt of your letter dated July 14, 2005 regarding the above subject project.

Given the location, scope, and nature of the proposed activity, the State Land Use Commission defers to the judgment of the City and County of Honolulu in this matter. We have no further comments to offer at this time.

Thank you for the opportunity to comment on the subject application. Please feel free to contact me at 587-3826 should you require clarification or any further assistance.

Sincerely,

Handwritten signature of Anthony J. H. Ching in cursive.
ANTHONY J. H. CHING
Executive Officer

113638

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96819
TELEPHONE: (808) 523-4529 • FAX: (808) 523-4730 • INTERNET: www.cc.honolulu.us

RECEIVED

5 JUL 26 P3:46



MUFI HANNEMANN
MAYOR

EDWARD Y. HIRATA
DIRECTOR

DESIGN & CONSTRUCTION
SEWERAGE & WASTEWATER DIVISION

TP7/05-112296R

July 25, 2005

MEMORANDUM

TO: WAYNE M. HASHIRO, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: EDWARD Y. HIRATA, DIRECTOR

SUBJECT: SAND ISLAND WWTP SOIL MANAGEMENT PROJECT

Thank you for your July 14, 2005 memorandum requesting our comments related to the subject project. At this time, we have no comments to offer for your consideration as you prepare the draft environmental assessment.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at Local 697 6.


EDWARD Y. HIRATA

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

July 26, 2005

114294

RECEIVED

CHYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

5 AUG -1 A 7:43

In reply, please refer to:
File:

S0734JF

The Honorable Wayne M. Hashiro, Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Hashiro:

SUBJECT: Sand Island Wastewater Treatment Plant Soil Management Project
TMK No.: 3-1-5-041: portion of 005

The Department of Health (DOH), Solid and Hazardous Waste Branch (SHWB) received your correspondence dated July 14, 2005 requesting SHWB comments to your proposed soil management project. According to your letter, you are preparing a supplemental Environmental Assessment (EA) to evaluate the management of approximately 90,000 cubic yards of excess soil. We understand that the soil was generated during expansion of the wastewater treatment plant and that it may contain low levels of polychlorinated biphenyls (PCBs).

According to your letter, the DOH and the City reached an agreement regarding the stockpiling of soil in December 2003. This agreement was made between the DOH Hazard Evaluation and Emergency Response (HEER) Office and the City. Based on our understanding of the source of contamination, the SHWB concurs that the HEER office oversight of this project is appropriate and should be continued.

The SHWB does not have any comments or areas of concern regarding your proposed action at this time. However, should you decide to pursue other management alternatives, such as off-site reuse or disposal, the SHWB should be contacted for discussion prior to implementation of these alternatives.

Should you have any questions regarding this letter, please contact Mr. Steven Y.-K. Chang, Chief of the Solid and Hazardous Waste Branch at 586-4226.

Sincerely,

Laurence K. Lau

FOR
LAURENCE K. LAU
Deputy Director for Environmental Health

113806

LINDA LINGLE
GOVERNOR OF HAWAII



RECEIVED

5 JUL 27 P3:07

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DESIGN AND CONSTRUCTION
WASTEWATER DIVISION
DIVISION OF STATE PARKS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND
DEAN HAKANO
ACTING DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

July 27, 2005

Wayne M. Hashiro, P.E.
Director, Department of Design and Construction
City and County of Honolulu
650 S. King St., 11th Floor
Honolulu, HI 96813

Dear Mr. Hashiro:

We have reviewed the letter informing us that an EA is being prepared for the Sand Island WWTP Soil Management Project. As Sand Island State Recreation Area is located next to the WWTP, we are concerned about the potential impacts of soils containing levels of PCB. However, subject to the findings of the EA and approval by the Department of Health for the project, we would not have objections to this proposed action.

Thank you for the opportunity to review and comment on the project.

Very truly yours,

Daniel S. Quinn
State Parks Administrator

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
330 SOUTH BERETANIA STREET
HONOLULU, HI 96843



RECEIVED

5 AUG -1 A 7:43
July 27, 2005

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

1142 93

MUFI HANEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA

RODNEY K. HARAGA, Ex-Officio
LAVERNE HIGA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

TO: WAYNE M. HASHIRO, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: DENISE WONG

FROM: BU for CLIFFORD S. JAMILE

SUBJECT: YOUR MEMORANDUM OF JULY 14, 2005 REGARDING THE SAND ISLAND WASTEWATER TREATMENT PLANT SOIL MANAGEMENT PROJECT, TMK: (3) 1-5-41:05 (PORTION OF)

Thank you for your memorandum regarding the subject project.

We have no objections to the proposed on-site reuse of excess soil at the Sand Island Wastewater Treatment Plant.

If there are any questions, please contact Scot Muraoka at 748-5942.

113979



U.S. Department
of Transportation
Federal Aviation
Administration

Western-Pacific Region
Real Estate and Utilities Section, AHNL-548

P. O. Box 50109
Honolulu, Hawaii 96850-5000

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

5 JUL 28 P 1:20

RECEIVED

July 27, 2005

Mr. Wayne M. Hashiro, P.E.
Director, Department of Design
and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

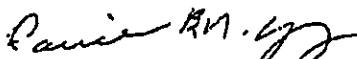
Dear Mr. Hashiro:

Your letter WW.PDE 05-111 of July 14, 2005, requested written comments from the Federal Aviation Administration (FAA) regarding your proposed Sand Island WWTP Soil Management Project TMK: (1)1-5-41:05 (portion of), Honolulu, Oahu, Hawaii.

Due to your project's proximity to Honolulu International Airport, if any temporary or permanent buildings, structures, or equipment exceed existing surrounding building heights, we ask that you submit a "Notice of Construction or Alteration" FAA Form 7460-1 for further coordination of your requirements. This form may be obtained at our website at <http://www.faa.gov>.

We appreciate this opportunity to comment. Please contact Mr. Steve Wong, FAA Honolulu Airports District Office at 541-1225, if there are any questions.

Sincerely,


Darice B. N. Young
Realty Contracting Officer



The Senate
State of Hawaii

STATE CAPITOL
HONOLULU, HAWAII 96813

August 1, 2005

Mr. Wayne M. Hashiro, P.E.
Director
City and County of Honolulu
Department of Design and Construction
650 S. King St., 11th Floor
Honolulu, HI 96813

Re: Sand Island WWTP Soil Management Project
TMK: (3) 1-5-41:05 (portion of)

Dear Mr. Hashiro:

Thank you for your letter of inquiry seeking comments and feedback regarding the soil management project proposed at the Sand Island Wastewater Treatment Plant. As I understand, the project will grade and cap polychlorinated biphenyl (PCB) contaminated soil at the plant. This method was chosen because after several factors were evaluated, it was determined to be the most feasible alternative. However, I am concerned that the plan for the soil may be harmful to the public's health.

PCBs are toxic substances that has no taste or smell, and when ingested, they may remain in the body's fat, liver, and other small organs for a prolonged period of time and may even expose infants though breastfeeding. Any inadvertent exposure of PCBs to the public is serious, and I would like to make sure that keeping the soil onsite is safe before the project is implemented. Thus, I would appreciate it if you would respond to the specific concerns I have outlined below:

1. As I understand the plan, the site on which the soil is to be graded is near the Sand Island State Park, a very heavily used state park on Oahu, and any migration of PCB contaminated soil may adversely affect the neighboring park and its users. What measures will be used to reduce the public to migrating contaminants?

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DEPT OF DESIGN & CONSTRUCTION
C & C OF HONOLULU

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

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2005 AUG -4 PM 1:30

DEPT OF DESIGN & CONSTRUCTION
C & C OF HONOLULU

Mr. Wayne M. Hashiro
August 1, 2005
Page 2

2. The plan to "gravel cap and/or asphalt cap" appears to be semi-permanent and may not be durable over time. Thus, it appears that these caps may erode and expose contaminants. What measures will be taken to prevent this from happening?
3. If a gravel cap is used, I am concerned that the gravel will be permeable and would allow contaminants to leach into the water table, which is just a few feet below. Will this occur, and if not, what will be done to prevent this from happening? Will there be some type of barrier system that will be placed below or around the soil to prevent leaching or the spreading of the contaminants?
4. I understand that a remedial design report and construction plans and specifications will be submitted to the Department of Health for its review and approval. However, I am concerned about the long-term durability of the barriers and safety measures over time and how the health and safety of the public may be compromised.

Again, I appreciate your communication with me regarding this project, and I look forward to hearing your responses to my concerns. Please feel free to contact my office should you have any questions or comments.

Sincerely,



Suzanne Chun Oakland
Senator, 13th District

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
PHONE: (808) 692-5561 • FAX: 692-5131 • INTERNET: www.honolulu.gov

114655

MUFI HANNEMANN
MAYOR



5 AUG -2 P3:54

LESTER K. C. CHANG
DIRECTOR

DANA L. TAKAHARA-DIAS
DEPUTY DIRECTOR

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

August 2, 2005

TO: WAYNE M. HASHIRO, P. E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: LESTER K. C. CHANG, DIRECTOR

SUBJECT: SAND ISLAND WWTP SOIL MANAGEMENT PROJECT
TMK: (3) 1-5-41:05 (PORTION OF)

Thank you for the opportunity to review and comment on the Sand Island WWTP soil management project.

As the proposed soil management project will have no impact on facilities or programs of the Department of Parks and Recreation, we have no comment, and 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 692-5454.


LESTER K. C. CHANG
Director

LKCC:mk
(112439)

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
450 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII, 96813
PHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. WEB SITE: www.honolulu.gov • CITY WEB SITE: www.honolulu.gov

113358

MUFI HANNEMANN
MAYOR



5 AUG -9 10:40

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

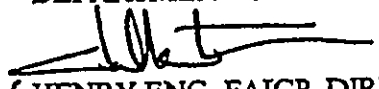
DEPARTMENT OF DESIGN AND CONSTRUCTION
SEWER WATER DIVISION

August 8, 2005

2005/ELOG-1671 (df)

MEMORANDUM

TO: WAYNE M. HASHIRO, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

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

SUBJECT: SAND ISLAND WWTP SOIL MANAGEMENT PROJECT DRAFT
ENVIRONMENTAL ASSESSMENT PREPARATION NOTICE,
TMK: 1-5-041: (POR) 005

In response to your July 14, 2005 memorandum requesting comments to the subject document,
we offer the following:

Civil Engineering Branch

1. A grading permit will be required.

Please contact Don Fujii at Extension 7320 if you have any questions regarding the above
comment.

Policy Planning Branch

1. The supplemental EA should update its project summary sheet and consistency chapter to
reflect our new Primary Urban Center Development Plan (adopted in June 2004) and
new, stand-alone Primary Urban Center Public Infrastructure Map (adopted in October
2004).
2. The project design should be sensitive to the area's visual environment and to all
adjacent uses, especially in its overall layout and in its landscaping plan.

Please contact Michael Watkins at Extension 4406 if you have any questions regarding the above
comments.

Wayne M. Hashiro, P.E., Director
Page 2

Subdivision Branch

1. The Sand Island WWTP is located in the Special Management Area (SMA). LUPD shall be consulted regarding SMA requirements.
2. A portion of the site is also in the 100-year floodplain (Zone A) that has been previously determined to be in a flood fringe district.

Please contact Mario Siu-Li at Extension 4247 if you have any questions regarding the above comments.

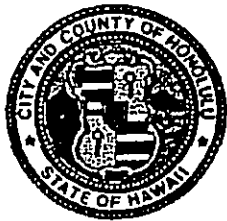
HE:ky
[387278]

cc: Planning Division
Subdivision Branch

117441

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 692-5054 FAX: (808) 692-5857
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



5 AUG 24 A 6:25

LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE K. MIYAMOTO
DEPUTY DIRECTOR

DESIGN & CONSTRUCTION
WASTEWATER DIVISION

IN REPLY REFER TO:
DRM 05-825

August 25, 2005

MEMORANDUM

TO: WAYNE M. HASHIRO, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: *Laverne Higa*
LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

SUBJECT: SAND ISLAND WWTP SOIL MANAGEMENT
PROJECT, TMK: (3)1-5-41:05 (PORTION OF)

Thank you for giving the Department of Facility Maintenance an opportunity to voice our concerns regarding the proposed soil remediation project. As you may be aware, we have two facilities within or adjacent to the proposed area of activity, the Storm Water Dewatering Facility and the Street Sweeping/Litter Receptacle Servicing Facility.

Both operations are extremely active and involve a significant number of City employees of which are concerned regarding their health and welfare. We are requesting that air monitoring be conducted before, during and after the remediation to adequately protect our employees from the PCB's and other contaminants.

We would appreciate being kept current regarding the schedule, abatement and best management practices that will be employed to control the hazardous materials and any pertinent health concerns as they may affect our employees as they perform their work assignments.

Should you have any questions regarding our concerns, please contact Larry Leopardi, Chief of the Division of Road Maintenance, at 484-7600.

SEP 10 2005

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4584 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



WAYNE M. HASHIRO, P.E.
DIRECTOR

EUGENE C. LEE, P.E.
DEPUTY DIRECTOR

WW.PDE 05-152

September 9, 2005

The Honorable Suzanne Chun Oakland
State Senate
State Capitol
Honolulu, Hawaii 96813

Dear Senator Chun Oakland:

Subject: Sand Island Wastewater Treatment Plant Soil Management Project
TMK (1) 1-5-41:05 (portion of)

The following are responses to specific concerns regarding the Soil Management Project at the Sand Island Wastewater Treatment Plant (WWTP) raised in your letter dated August 1, 2005.

1. *As I understand the plan, the site on which the soil is to be graded is near the Sand Island State Park, a very heavily used state park on Oahu, and any migration of PCB contaminated soil may adversely affect the neighboring park and its users. What measures will be used to reduce the public to migrating contaminants?*

The remedial design incorporates engineering controls that prevent the migration of contaminants. Soils will be contained within an area by concrete walls. The surface of the graded area will be finished with protective barriers that include: the northern third of the graded area will be finished with 6-inches of base coarse and 2-inches of asphalt; and the remaining southern area will be landscaped with a filter fabric and 6-inches of gravel. These engineering controls will mitigate migration and eliminate exposure.

The construction contractor will be required to meet all State and City standards for dust and erosion control during construction. The existing dust screen and silt fence along the property line bordering the State park will remain throughout the duration of construction.

2. *The plan to "gravel cap and/or asphalt cap" appears to be semi-permanent and may not be durable over time. Thus, it appears that these caps may erode and expose contaminants. What measures will be taken to prevent this from happening?*

The Honorable Suzanne Chun Oakland
Page 2
September 9, 2005

A Long Term Maintenance and Management plan will be prepared after completion of construction to address the long term maintenance and management of the soil reuse area. Issues such as routine inspections, maintenance repairs, and management decisions regarding future construction within the area will be addressed by this plan. This plan will be submitted to the State of Hawaii Department of Health (DOH) for review and approval.

3. *If a gravel cap is used, I am concerned that the gravel will be permeable and would allow contaminants to leach into the water table, which is just a few feet below. Will this occur, and if not, what will be done to prevent this from happening? Will there be some type of barrier system that will be placed below or around the soil to prevent leaching or the spreading of the contaminants?*

Polychlorinated biphenyls (PCBs) have a very low affinity to water and "bind" tightly to soil. Therefore, PCBs will not migrate with percolation of water through the soil column down to the groundwater table. Previous sampling at the Sand Island WWTP site has confirmed that PCBs have not migrated to the groundwater or soil below the groundwater table as all sample results below the groundwater table were non-detect for PCBs.

As mentioned in item 1 above, the soil will be contained by a concrete wall, thus, preventing the spreading of soil containing PCBs.

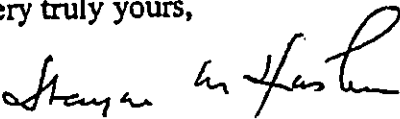
4. *I understand that a remedial design report and construction plans and specifications will be submitted to the Department of Health for its review and approval. However, I am concerned about the long-term durability of the barriers and safety measures over time and how the health and safety of the public may be compromised.*

The engineering controls described in item 1 effectively eliminate exposure to both on-site personnel and the surrounding public. As mentioned in item 2, the Long Term Maintenance and Management Plan will be implemented to ensure the long-term durability of the engineering controls and protection of the public.

We appreciate the submission of your concerns and would like to reassure you that we will continue to work closely with DOH to ensure that public safety requirements are met.

If you have any questions regarding the above, please contact Denise Wong at 527-5151.

Very truly yours,


WAYNE M. HASHIRO, P.E.
Director

c: Environet Inc.

SEP 15 2005

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



WAYNE M. HASHIRO, P.E.
DIRECTOR

EUGENE C. LEE, P.E.
DEPUTY DIRECTOR

WW.PDE 05-154

September 12, 2005

MEMORANDUM

TO: LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

FROM:  WAYNE M. HASHIRO, P.E., DIRECTOR

SUBJECT: SAND ISLAND WASTEWATER TREATMENT PLANT
SOIL MANAGEMENT PROJECT
TMK (1) 1-5-41:05 (PORTION OF)

This is in response to your letter dated August 25, 2005 in which you express concern regarding the health and welfare of City employees working at the two City facilities within or adjacent to the proposed area of activity in connection with the Sand Island Wastewater Treatment Plant (WWTP) Soil Management Project. Your specific request was that air monitoring would be conducted before, during and after the remediation to adequately protect City employees from PCBs and other contaminants.

A human health risk assessment was completed in December 2003 to address the issue of on-site wastewater treatment plant operators' exposure to PCBs, ethylbenzene, xylenes and lead as a result of the proposed project. The risk assessment concluded that the risk of exposure is considered acceptable as defined by the U.S. Environmental Protection Agency (EPA) Region 9 Industrial Preliminary Remediation Goals (PRGs). While the risk assessment did not specifically evaluate the risk to off-site industrial workers, the risk to these workers would be lower than that of on-site wastewater treatment operators due to much shorter duration of exposure to site soils.

During project work, a dust control plan will be implemented in order to eliminate emissions of fugitive dust to comply with State of Hawaii Air Pollution Control regulations. Dust control measures will include an existing dust fence along the northern, eastern and southern borders of the project site and watering of unpaved work areas and roads during days without rainfall. Road cleaning and/or tire washing will further help reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roads in the area. The contractor will conduct periodic dust monitoring at the project boundary during construction to evaluate the effectiveness of the dust control measures.

Laverne Higa
Page 2
September 12, 2005

We will keep you informed of our construction schedule for the project. We will send you a copy of the *construction plans and specifications* that presents the engineering controls to be implemented for your information.

If you have any questions regarding the above, please contact Denise Wong at x5151.

c: Environet

O

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Final Environmental Assessment
Sand Island WWTP Soil Management Project
November 2005

APPENDIX H

DRAFT ENVIRONMENTAL ASSESSMENT COMMENTS AND RESPONSES

122678



RECEIVED

OCT -3 08:50

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
230 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
PHONE: (808) 551-4344 FAX: (808) 551-4347
WWW: WWW.DEPHQP.HAWAII.GOV

GENEVIEVE SALMONSON
DIRECTOR

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 522-4344 FAX: (808) 523-4347
WWW: WWW.HONOLULU.CITY.GOV



MARI HANUMAKAHI
MAYOR

WAYNE M. HANUMAKAHI, P.E.
DIRECTOR
BUREAU CLAUDE, P.E.
DEPUTY DIRECTOR

WWW.PDE-05-223

October 3, 2005

Wayne Hashiro, Director
Department of Design & Construction
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Attn: Denise Wong
Dear Mr. Hashiro:

Subject: Draft Environmental Assessment (EA), Sand Island WWTTP Soil Management Project

We have the following comments to offer:

Cultural Impacts Assessment:
Act 50 was passed by the legislature in April 2000. This mandates an assessment of impacts to current cultural practices by the proposed project. In the final EA include such an assessment. If the subject area is in a developed urban setting, cultural impacts must still be assessed. Many incorrectly assume that the presence of urban infrastructure effectively precludes consideration of current cultural factors. For example, persons are known to gather kauna'oa, 'ilima, 'uhaloa, noni or ki on the grassy slopes and ramps of the H-1 freeway and some state highways on the neighbor islands. Certain landmarks and physical features are used by Hawaiian navigators for sailing, and the lines of sight from landmarks to the coast by fishermen to locate certain fishing spots. Blocking these features by the construction of buildings or tanks may constitute an adverse cultural impact.
For assistance in the preparation refer to our [Guidelines for Assessing Cultural Impacts](http://www.dhs.gov/hawaii/cultural/cultural.htm), which you may find at <http://www.dhs.gov/hawaii/cultural/cultural.htm>. You will also find the text of Act 50 linked to this section of our homepage.

Project Coordination: In our September 8th 2005 Environmental Notice we published the "Sand Island Wastewater Treatment Plant Elevator Installation" draft EA notice. In the final EA for the soil management project note how the timing of the two projects will be coordinated to provide a minimum of disruption.

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson
GENEVIEVE SALMONSON
Director

c: Colette Sakoda, Environment

November 8, 2005

Ms. Genevieve Salmonson
Office of Environmental Quality Control
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Draft Environmental Assessment - Soil Management Project,
Sand Island Wastewater Treatment Plant, Honolulu, Hawaii

This letter is in response to the comments received in your letter dated October 3, 2005 regarding the subject project. The following are responses to the concerns raised.

In response to the cultural impact assessment, Environet provides the following:

Preconsultation letters and hard copies of the Draft EA were sent to the Office of Hawaiian Affairs (OHA) and the State of Hawaii Historic Preservation Division (SHPD) for review and comment. OHA has responded to the Draft EA and did not have objections to the project. OHA did request that the City consider monitoring for sediments from the project site in the Long Term Maintenance and Monitoring Plan. The Long Term Maintenance and Monitoring Plan will address this issue. This plan will be submitted to the State of Hawaii Department of Health for review and approval. To date, SHPD has not provided any comments or expressed any concerns regarding the proposed action. The submission of the preconsultation letters and Draft EA fulfills Environet's due diligence requirements for a cultural impacts assessment.

In addition, the proposed action is located within the existing Sand Island WWTTP, a highly industrialized environment. There are no known native or cultural resources on the project site. Also, the proposed action is consistent with ROH, Chapter 25, Section 3.2 and is not anticipated to: restrict access to beaches, recreation areas, and natural reserves; alter existing land forms; or impede scenic views and vistas.

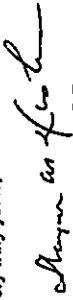
Ms. Genevieve Salmonson
Page 2
November 8, 2005

In response to project coordination, Environet provides the following:

The elevator installation project will occur outside of the project site and therefore the two projects will not disrupt each other.

Thank you for your comments and recommendations with regards to this project. Your participation in the planning phase of the project is greatly appreciated. Please feel free to contact Ms. Denise Wong at 527-5151 should you have any further comment.

Very truly yours,


WAYNE M. HASHIRO, P.E.
Director

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU **JUL 25 2005**
633 SOUTH KING STREET, 7TH FLOOR, HONOLULU, HAWAII 96813
TELEPHONE: (808) 522-3111 FAX: (808) 522-3123
DEPT. INTERNET: www.honolulu.gov WWW.HONOLULU.GOV



HENRY ENG, FAICP
DIRECTOR
DAVID K. TAIKOU
DEPUTY DIRECTOR

DAVID K. TAIKOU
DEPUTY DIRECTOR

2005TEL00-2163(AM)

October 18, 2005

MEMORANDUM

TO: WAYNE HASHIRO, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

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

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
SAND ISLAND WASTEWATER TREATMENT PLANT
SOIL MANAGEMENT PROJECT
TAX MAP KEY: J-5-41: POR. 5

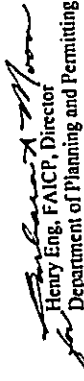
This responds to your transmittal, dated September 12, 2005, requesting comments on the above-referenced Draft EA. Our comments are as follows:

1. Section 1.1 "Scope and Authority," page 2: Please include in the project's scope of review and make reference to Chapter 25, Revised Ordinances of Honolulu, the Special Management Area Ordinance.
2. Section 2.1.1 Construction Characteristics, page 5: Will the project have any effect on existing treatment plant operations?
3. Section 3.7 "No Action," page 8: Please elaborate on how retaining the soil in excess stockpile may lead to long-term adverse environmental impacts.
4. Section 4.2.2, page 19, Section 5.4, page 24 and Section 5.6, page 26: Please revise these sections to indicate that the proposed project will require the approval of a Major Special Management Area Use Permit.
5. We note that a flood study was prepared by the U.S. Army Corps of Engineers, where the portion of the parcel designated on the Federal Flood Insurance Rate Map as Zone A is located in the Flood Fringe District with a regulatory flood elevation ranging from 5.7 to 5.9 feet above mean sea level. Please delineate the flood district boundary on a site plan and describe how the project will comply with the flood requirements.

WAYNE HASHIRO, DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION
October 18, 2005
Page 2

6. Page 13 and Section 4.1 Potential Impacts and Mitigation: Expand and describe the uses that surround the project site. Describe how the grading and erosion control plan will mitigate the effects of fugitive dust on surrounding properties as well as operations on the site.
7. Section 8.0, page 28, Findings and Determination: This section should also include an assessment of the proposed project's impacts on coastal resources relative to the significant criteria identified in Chapter 25, ROH.

If you have any questions, please contact Ann Matsumura of our staff at 523-4077.


Henry Eng, FAICP, Director
Department of Planning and Permitting

HFE:cs
cc: Colette Sakoda, Environet, Inc.
Office of Environmental Quality Control

4-402370

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

810 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4587
Web Site: www.honolulu.gov



WAYNE A. HASHIRO, P.E.
DIRECTOR
EUGENE C. LEE, P.E.
DEPUTY DIRECTOR


WW.PDE 03-221

DAVE MATSUMURA
MANAGER

November 8, 2005

MEMORANDUM

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

FROM: 
WAYNE M. HASHIRO, P.E., DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT – SOIL MANAGEMENT
PROJECT, SAND ISLAND WASTEWATER TREATMENT PLANT,
HONOLULU, HAWAII

This letter is in response to the comments received in your letter dated October 18, 2005 for the subject project. The following are responses to the concerns raised.

1. Section 1.1 "Scope and Authority," page 2: Please include in the project's scope of review and make reference to Chapter 25, Revised Ordinances of Honolulu, the Special Management Area Ordinance.
The FEA has been revised to state that the EA was prepared in accordance with Chapter 25, of the Revised Ordinances of Honolulu.
2. Section 2.1.1 Construction Characteristics, page 5: Will the project have any effect on existing treatment plant operations?
No, the project will not have any effect on existing treatment plant operations. This statement has been added to Section 2.1.1 of the FEA.
3. Section 3.7 "No action," page 8: Please elaborate on how retaining the soil in excess stockpile may lead to long-term adverse environmental impacts.
Section 3.7 has been revised to further discuss how the No Action alternative would lead to long-term adverse environmental impacts. In general, previous construction projects conducted at the WWTP required the excavation of soil containing low level PCB contamination for the construction of new structures and utilities. This excavated soil (approximately 80,000 cubic yards) is temporarily stockpiled at the southeast corner of

the WWTTP. The stockpile is being maintained by the construction contractor using temporary erosion controls (i.e. silt fence and hydromulching). However, after completion of the construction project, maintenance of the stockpile will cease and the "no action" alternative will not include implementation of permanent erosion control measures (i.e. not planned, paved, or gravelled). A "no action" alternative would leave the soil stockpile susceptible to wind erosion and soil loss. Erosion of the stockpile will expose the low level PCB contamination, which may lead to long-term adverse environmental impacts.

4. Section 4.2.2, page 19, Section 5.4, page 24 and Section 5.6, page 26: Please revise these sections to indicate that the proposed project will require the approval of a Major Special Management Area Use Permit.

Sections 4.2.2, 5.4, and 5.6 were revised to indicate a Major Special Management Area Use Permit will be required.

5. We note that a flood study was prepared by the U.S. Army Corps of Engineers, where the location of the parcel designated on the Federal Flood Insurance Rate Map as Zone A is located in the Flood Fringe District with a regulatory flood elevation ranging from 5.7 to 5.9 feet above mean sea level. Please delineate the flood district boundary on a site plan and describe how the project will comply with the flood requirements.

Changes were made to Figure 4-2 (Flood Insurance Rate Map) to show the WWTTP property line and major structures. The following notes were also added to the figure:
1) Zone A are areas where no base flood elevations have been determined; 2) Zone X are areas determined to be outside of the 500-year flood zone; 3) Areas of the project site in Zone A have been given a regulatory flood elevation ranging from 5.7 to 5.9 feet above mean sea level; and 4) The ground surface elevation at the project site is greater than 5.9 feet.

Sentences were added to section 4.1.6 "Flood Hazard" to indicate that portions of the project within Zone A have been given a regulatory flood elevation ranging from 5.7 to 5.9 feet above mean sea level; and that the ground surface elevation of the project site is greater than 5.9 feet, and therefore floods are not anticipated to impact the project site.

As stated in section 4.1.6 "Flood Hazard", according to Mr. Mario Siu-Li of the Department of Planning and Permitting, the project area is not within the floodway, a "no-rise" certification is not necessary. (See Appendix E of the EA) A drainage report will be submitted along with the construction plans to the Department of Planning and Permitting for review and approval.

6. Page 13 and Section 4.1 Potential Impacts and Mitigation: Expand and describe the uses that surround the project site. Describe how the grading and erosion control plan will mitigate the effects of fugitive dust on surrounding properties as well as operations on the site.

Sentences were added to Section 4.1 to expand on the elements of the grading plan and erosion control plan that are designed to mitigate the effects of fugitive dust on surrounding properties and the site. In general, the grading and erosion control plans are designed to minimize exposed soils to erosion by implementing: temporary erosion controls during construction such as use of dust screens, silt fences, storm drain inlet controls, stabilized ingress and egress points, and hydromulching; and permanent erosion control measures by graveling and paving the project site. As a result, wind erosion and soil loss are anticipated to be minimal. These control measures will mitigate the effects of fugitive dust and soil erosion on surrounding properties as well as operations at the site.

7. Section 8.0, page 28, Findings and Determination: This section should also include an assessment of the proposed project's impacts on coastal resources relative to the significant criteria identified in Chapter 25, ROH.

The following sentence was added to Criteria 11 of Section 8.0: "The proposed action is consistent with ROH, Chapter 25, Section 3.2 and is not anticipated to: restrict access to beaches, recreation areas, and natural reserves; alter existing land forms; or impede scenic views and vistas."

Thank you for your comments and recommendations with regards to this project. Your participation in the planning phase of the project is greatly appreciated. Please feel free to contact Ms. Denise Wong at 527-5151 should you have any further comments.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANA STREET
HONOLULU, HI 96843



October 5, 2005

123369

DAVID HARRIS, Mayor
ANGELIY S. DEANE, Chairman
MARGARET S. GARDNER, Vice
SARAH L. HANA, Vice
ALLY L. PARK, Vice
ROBERT S. HANAGA, Esq., Director
LUCYBETH HAGA, Esq., Director
DORIS TAYLOR, Director
Deputy Manager and Chief Engineer

Ms. Denise Wong
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

Dear Ms. Wong:

Subject: The Draft Environmental Assessment for the Soil Management Project, Sand Island Wastewater Treatment Plant, Honolulu, Hawaii. TM(K)-1-5-41-2

Thank you for the opportunity to comment on the subject document. The comments in our letter of March 9, 2001, which are included in the document, are still applicable. If you have any questions, please contact Joseph Kaakua at 748-5442.

Very truly yours,

K. Shida
KEITH S. SHIDA
Principal Executive
Customer Care Division

RECEIVED
5 OCT -7 09:14
DESIGN & CONSTRUCTION
WASTEWATER DIVISION

125344



FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
RECEIVED
FIRE DEPARTMENT
1435 KALANIANA'OLA AVENUE, SUITE 1400
HONOLULU, HI 96813-1400
TELEPHONE: (808) 531-7100 FAX: (808) 531-7101

5 OCT 21 02:48



DESIGN & CONSTRUCTION
WASTEWATER DIVISION

October 19, 2005

TO: WAYNE M. HASHIRO, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: ATTILIO K. LEONARDI, FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
SOIL MANAGEMENT PROJECT
SAND ISLAND WASTEWATER TREATMENT PLANT

In response to your memorandum dated September 23, 2005, regarding the above referenced matter, the Honolulu Fire Department has reviewed the subject material provided and has no comments.

Should you have any questions, please call Battalion Chief Douglas Hooper of our Occupational Safety and Health Office at 831-7757.

Attilio K. Leonard
ATTILIO K. LEONARDI
Fire Chief

AKL/DH:cn

JCT 24 2005

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
420 SOUTH KING STREET, 3RD FLOOR, HONOLULU, HAWAII 96813
TELEPHONE: (808) 525-4700 FAX: (808) 525-4733 INTERNET: www.cc.hawaii.gov



ALFRED A. TANAKA, P.E.
ACTING DIRECTOR

TP9/05-121914R

October 21, 2005

MEMORANDUM

TO: WAYNE M. HASHIRO, P.E., DIRECTOR
DEPARTMENT OF DESIGN AND CONSTRUCTION

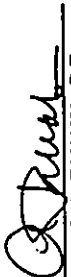
ATTN: DENISE WONG

FROM: ALFRED A. TANAKA, P.E., ACTING DIRECTOR

SUBJECT: SAND ISLAND WASTEWATER TREATMENT PLANT
SOIL MANAGEMENT PROJECT

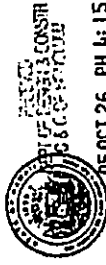
Thank you for your September 23, 2005 letter, requesting our review of and comments on the draft environmental assessment for the subject project. We have reviewed the document and do not have any comments to submit for your consideration.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at Local 6976.


ALFRED A. TANAKA, P.E.

cc: Ms. Colette Sakoda
Environet, Inc.

126129



RECEIVED

5 OCT 27 PM 1:40

STATE OF HAWAII
DEPARTMENT OF HEALTH
HONOLULU, HAWAII 96813

October 21, 2005

Mr. Wayne M. Hashiro, Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 14th Floor
Honolulu, Hawaii 96813

Dear Mr. Hashiro:

SUBJECT: Draft Environmental Assessment for Soil Management Project at Sand Island
Wastewater Treatment Plant, Honolulu, Oahu, Hawaii, TMK: 1-5-41: 005

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no specific comments to offer at this time. However, our Standard Comments/areas of concern are listed below for your use and information.

Environmental Planning Office

To facilitate TMDL development and implementation, and to assist with our assessment of the potential impact of proposed actions upon water quality, pollutant loading, and biological resources in receiving waters, we suggest that environmental review documents, permit applications, and related submittals include the following standard information and analyses. Please note that these comments are also listed on our website: www.state.hi.us/health/environmental/epo-planning/standarduse.html. We suggest that you also review other Standard Comments on this website.

Waterbody type and class

1. Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (<http://www.state.hi.us/health/about/rules/11-54.pdf>), of all potentially affected water bodies. Potentially affected water bodies means those in which proposed project activity would take place and any others that could receive water discharged by the proposed project activity or water flowing down from the proposed site. These waterbodies can be presented as a chain of receiving waters whose top link is the project site upslope and whose bottom link is in Pacific Ocean "oceanic waters," with all receiving waters named according to conventions established by Chapter 11-54 and the

CHERYL L. FURUKI, M.D.
DIRECTOR OF HEALTH

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WFO
EPO-05-091

Mr. Hashiro
October 21, 2005
Page 2

List of Impaired Waters in Hawaii Prepared under Clean Water Act § 303(d). For example, a recent project proposed for Nuhelewai Stream, Oahu (a tributary of Kapalama Canal) might potentially affect Nuhelewai Stream, Kapalama Canal, Honolulu Harbor and Shore Areas, and the Pacific Ocean.

Existing water quality management actions

2. Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.
3. Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.

Pending water quality management actions

4. Identify all potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* including the listed waterbody, geographic scope of listing, and pollutant(s) (See Table 5 at <http://www.hawaii.gov/health/tenyearmanagement/plan/impairments/qm7033d/actual.html.pdf>).
5. If the proposed project involves potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*, identify and quantify expected changes in the following site and watershed conditions and characteristics:
 - surface permeability
 - hydrologic response of surface (timing, magnitude, and pathways)
 - receiving water hydrology
 - runoff and discharge constituents
 - pollutant concentrations and loads in receiving waters
 - aquatic habitat quality and the integrity of aquatic biota

Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

Mr. Hashiro
October 21, 2005
Page 3

Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

Proposed Action and Alternatives Considered

We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.

We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

If there are any questions about these standard comments please contact Jiacci Liu with the Environmental Planning Office at 596-4346. We would like to receive a copy of the Draft Environmental Assessment when it is completed.

Sincerely,



HAROLD LAO, ACTING MANAGER
Environmental Planning Office

c: EPO
CWB
HEER

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
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MARTI HARRISMAUN
MAYOR

WAYNE M. HASHIRO, P.E.
DIRECTOR
TUESDAY, OCTOBER 25, 2005
DEPUTY DIRECTOR

WW.FDE 05-222

November 8, 2005

Mr. Harold Lao, Acting Manager
Environmental Planning Office
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Dear Mr. Lao:

Subject: Draft Environmental Assessment – Soil Management Project,
Sand Island Wastewater Treatment Plant, Honolulu, Hawaii.

We received your letter dated October 21, 2005 for the subject project. Thank you for your comments and recommendations with regards to this project. Your participation in the planning phase of the project is greatly appreciated. We are taking your Standard Comments/areas of concern into consideration.

We did want to inform you of the following:

1. The waterbodies near the site will be identified in the appropriate figures of the FEA.
2. A NPDES permit for construction will be obtained for the project.

Please feel free to contact Ms. Demise Wong at 527-5151 should you have any further comments.

Very truly yours,

WAYNE M. HASHIRO, P.E.
Director



ROMY M. CACHOLA
COUNCIL MEMBER
(808) 547-7077
(808) 527-4220 (fax)
e-mail: romyc@hawaii.gov

October 24, 2005

Mr. Wayne M. Hashiro, P.E., Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

Dear Mr. Hashiro:

Re: Draft Environmental Assessment: Sand Island Wastewater Treatment Plant Soil Management Project

Thank you for the opportunity to provide comments on the Draft Environmental Assessment (EA) for the above-referenced proposed project at the Sand Island Wastewater Treatment Plant.

Upon review of the Draft EA, I have no comments at this time.

My warmest mahalo and aloha.

Very truly yours,

ROMY M. CACHOLA
Council Member
Council District VII

cc: Office of Environmental Quality Control (OEQC)
EnviroNet

UNIVERSITY OF HAWAII
Environmental Center

FAX TRANSMITTAL SHEET

ENVIRONMENTAL CENTER
University of Hawaii
2500 Dole Street, Krauss Annex 19, Honolulu, HI 96822
Telephone: (808) 956-7361 Fax: (808) 956-3980

Ms. Colette Sakoda
Environet, Inc.
2850 Pa'a Street, Suite 212
Honolulu, HI 96819

OCTOBER 24, 2005
~~8:26:57 AM~~

Dear Ms. Colette Sakoda,

Draft Environmental Assessment
Sand Island WWTP Soil Management Project
Sand Island, Oahu, Hawaii

DATE: 10/24/2005

FROM: John Harrison

TO: Denise Wong, Design and Construction
City and County of Honolulu (523-4767)

Colette Sakoda, Environet Inc. (833-2231)

OEQC (586-4186)

SUBJECT: Sand Island WWTP Soil Management Project

PAGES: 4
(incl. cover page)

The City and County of Honolulu (CCH), Department of Design and Construction, proposes to re-use an on-site stockpile of soil containing low levels of PCB within the bounds of the existing Wastewater Treatment Plant (WWTP) facility, identified as Tax Map Key 1-5-041:005, owned by the State of Hawaii and leased by the CCH. The proposed actions are consistent with the land use designation as industrial and trigger Chapter 343, HRS, through use of CCH funds.

The proposed action generally involves grading 77,000 cubic yards of stockpiled soil over a project area of approximately 9-acres located in the southeast portion of the 50-acre WWTP site. The stockpiled soil was generated by prior, on-site construction activities. Generally, the agency anticipates that the area over which the stockpiled soil will be graded will be raised 4-10 feet, and they propose to stabilize the side slopes of the newly graded using a 6-inch shotcrete fabric wall. No impact is anticipated for areas beyond the WWTP site, nor is any interruption anticipated in the current water or electric power services at the site or in the surrounding area.

This review was conducted with the assistance of Randy Akiola, Civil Engineering, Roger Babcock, Civil Engineering, and Amelia Hicks of the Environmental Center.

General Comments

Our reviewers find that the Draft Environmental Assessment for the Sand Island WWTP Soil Management Project is generally a well thought out approach and commend the applicant for both the comprehensive and logical preparation of this document. However, our reviewers observe that some areas require further clarification for the public review process.

Ms. Colette Sakoda
October 20, 2005
Page 3 of 3

Specific Comments

Project Description (§2-1, §2.1.1, Page 5)

The applicant proposes to reuse stockpiled soil at the project site, which will involve grading the stockpiled soil over a 9-acre area within the WWTP facility site. Given that the stockpiled soil contains low levels of PCB, our reviewers would like to know if the soil will be treated before grading to ensure homogeneity and uniform PCB concentration throughout out the newly graded area.

While our reviewers find that the applicant has provided two suitable project site maps (§1.0, Figure 1-1 and 1-2), an additional diagram illustrating the anticipated project outcomes as described in §2.1.1 would further clarify the applicant's project plans.

Alternatives Considered (§3.0, Pages 6-13)

Our reviewers note that the applicant has considered alternative actions and has made substantive efforts to select the most time-efficient, economical and acceptable management option for the stockpile of soil at Sand Island WWTP. The draft EA looks at several alternatives to handle PCB-contaminated soil including treatment and on-site and off-site reuse/disposal. We concur that the logic for choosing on-site reuse seems to be valid.

Assessment of the existing natural environment, potential impacts and mitigation measures (§4.0, Pages 14-18)

The proposed containment system will include spreading and compaction of the soil, stabilization of side slopes with geotextile fabric and a 6-inch thick shotcrete cover. The surface area will be contained partly by asphalt and partly by gravel. The asphalt area will be used as a future construction staging area possibly accessed by heavy construction equipment. The asphalt treatment should be designed (base course, compaction, asphalt thickness, etc.) to accommodate the worst-case anticipated loads, and use or weight limits for access should be developed and signage provided. Heavy vehicles could damage the containment system and allow fugitive dust emissions and erosion of contaminated soil that could be a health concern. In addition, maintenance of the asphalted area must be ensured, since all such coverings are subject to cracking and "pothole" generation over time due to exposure to precipitation, sunlight, and vehicular traffic.

Ms. Colette Sakoda
October 20, 2005
Page 2 of 3

Gravel is proposed for 2/3 of the area, apparently due to its lower cost than asphalt. However, the consequence of this choice is greatly reduced reusability. The gravel-covered area should not be accessible to vehicular traffic of any type, because it would likely cause rutting and possible exposure of contaminated soil. These concerns would be especially significant during/following precipitation events and in relation to large vehicles or construction equipment. The gravel-covered area should not be accessible at all for any use, and our reviewers suggest enclosure of this area by appropriate fencing.

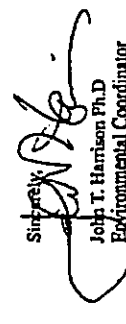
Cumulative Impacts (§4.1.7, Pages 17 and 18)

The applicant plans to deter major potential short-term air quality impediments with continued use of a dust fence presently at the site. While our reviewers agree that the use of a dust barrier is imperative to maintaining air quality standards, we question the range of the barrier's coverage. Specifically, what is the distance from the top to the surrounding ground? Secondly, if the existing fence is to serve the purpose of a dust barrier as is, what are the heights between the top of the fence and the rising new grades? Last, will the existing fence need to be modified for effective use during the construction period?

Irreversible and Irrecoverable commitment of resources (§7.0, Page 28)

The applicant states that the proposed action will cause irretrievable loss of materials; however, it is unclear to what materials this statement refers. For clarity in the public review process, please specify what materials are being irretrievably lost.

Thank you for the opportunity to review this Draft EA.

Sincerely,

John T. Harrison Ph.D.
Environmental Coordinator

cc: OEQC
James Moncur
Randy Abiona
Roger Babcock
Amelia Hicks

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WAYNE A. HARRISON, P.E.
DIRECTOR

TURMIE C. LEE, P.E.
SOUTH DIRECTOR

WW/PDE 05-225

November 8, 2005

MURTI MANIKAVELU
LAWYER

Dr. John T. Harrison
Page 2
November 8, 2005

Alternatives Considered (§3.0, Pages 6-13)

Our reviews note that the applicant has considered alternatives and has made substantive efforts to select the most time-efficient, economical, and acceptable management option for the stockpile of soil at Sand Island WWTP. The draft EA looks at several alternatives to handle PCB-contaminated soil including treatment and on-site and off-site reuse/disposal. We concur that the logic for choosing on-site reuse seems to be valid.

Comment noted.

Assessment of the existing natural environment, potential impacts and mitigation measures (§4.0, Pages 14-18)

The proposed containment system will include spreading and compaction of the soil, stabilization of side slopes with geotextile fabric and a 6-inch thick shotcrete cover. The surface area will be contained partly by asphalt and partly by gravel. The asphalt area will be used as a future construction staging area possibly accessed by heavy construction equipment. The asphalt treatment should be designed (base course, compaction, asphalt thickness, etc.) to accommodate the worst-case anticipated loads, and use or weight limits for access should be developed and signage provided. Heavy vehicles could damage the containment system and allow fugitive dust emissions and erosion of contaminated soil that could be a health concern. In addition, maintenance of the asphalt area must be ensured, since all such coverings are subject to cracking and "pothole" generation over time due to exposure to precipitation, sunlight, and vehicular traffic.

The asphalt pavement will be designed to handle the heavy vehicular loads anticipated. The construction contractor during the use of the site as a staging area will be required to inspect and maintain the asphalt pavement on a daily basis.

Gravel is proposed for 2/3 of the area, apparently due to its lower cost than asphalt. However, the consequence of this choice greatly reduces reusability. The gravel-covered area should not be accessible to vehicular traffic of any type, because it would likely cause rutting and possible exposure of contaminated soil. These concerns would be especially significant during/following precipitation events and in relation to large vehicles or construction equipment. The gravel-covered area should not be accessible at all for any use, and our reviewers suggest enclosure of this area by appropriate fencing.

The gravel area will not be used for construction staging and vehicular traffic. The City's construction manager will ensure that these areas are not used. The gravel areas will only be accessed during emergency repairs.

A long-term maintenance and management plan will be submitted to the State of Hawaii Department of Health as part of the proposed action. The long-term maintenance and management plan will address issues such as periodic inspections and repairs.

Dr. John T. Harrison
Environmental Center
University of Hawaii
2500 Dole Street, Krauss Annex 19
Honolulu, Hawaii 96822

Dear Dr. Harrison:

Subject: Draft Environmental Assessment - Soil Management Project,
Sand Island Wastewater Treatment Plant, Honolulu, Hawaii

This letter is in response to the comments received in your letter dated October 24, 2005 for the Draft Environmental Assessment, Soil Management Project, Sand Island Wastewater Treatment Plant. The following are responses to the concerns raised.

Project Description (§ 2.1, § 2.1.1, Page 5)

The applicant proposes to reuse stockpiled soil at the project site, which will involve grading the stockpiled soil over a 9-acre area within the WWTP facility site. Given that the stockpiled soil contains low levels of PCBs, our reviewers would like to know if the soil will be treated before grading to ensure homogeneity and uniform PCB concentration throughout the newly graded area.

PCBs tend to tightly bind to the organic fractions of the soil particles. Therefore, PCB contamination in soil tends to be heterogeneous in nature, and even complete physical mixing of the soil would not ensure homogeneity. The previous sampling programs were designed to address this issue. A sufficient number of samples were appropriately located and collected to allow for a valid statistical calculation of a 95 percent upper confidence limit (UCL) concentration for use in the Human Health Risk Assessment completed for the project site. The 95 percent UCL is akin to an average concentration and is used to evaluate human health risks. The 95 percent UCL calculated for the project site represents the human health exposure risk concentration.

While our reviewers find that the applicant has provided two suitable project site maps (§ 1.0, Figure 1-1 and 1-2), an additional diagram illustrating the anticipated project outcomes as described in §2.1.1 would further clarify the applicant's project plans.

A figure was added to the end of Section 2.0 to illustrate future site conditions.

Dr. John T. Harrison
Page 3
November 8, 2005

Cumulative Impacts (§4.1.7, Pages 17 and 18)

The applicant plans to deter major potential short-term air quality impediments with continued use of a dust fence presently at the site. While our reviewers agree that the use of a dust barrier is imperative to maintaining air quality standards, we question the range of the barrier's coverage. Specifically, what is the distance from the top to the surrounding ground? Secondly, if the existing fence is to serve the purpose of a dust barrier as is, what are the heights between the top of the fence and the rising new grades? Last, will the existing fence need to be modified for effective use during the construction period?

The existing dust fence along the southeastern portion of the project site has an elevation of approximately 25 feet above the existing ground. This dust fence has proven effective in minimizing dust from the existing soil stockpile, which is approximately 18 feet above the existing ground. The new grades of the project site vary from 4 to 10 feet above the existing ground surface. Therefore, the distance from the new grades to the top of the dust fence will range from 15 to 21 feet.

The height of the existing dust fence should be sufficient to prevent fugitive dust from entering surrounding areas outside of the project site. During construction, it will be the contractor's responsibility to minimize dust emissions and employ appropriate measures to ensure that Federal and State air quality standards are maintained. The contractor will be responsible for making any modifications and changes in order to comply with the air quality standards. In addition, other dust control measures such as watering and hydromulching will be employed during construction.

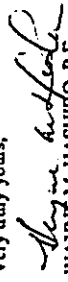
Irreversible and Irrecoverable Commitment of Resources (§7.0, Page 28)

The applicant states that the proposed action will cause irretrievable loss of materials; however, it is unclear to what materials this statement refers. For clarity in the public review process, please specify what materials are being irretrievable lost.

Section 7.0 states that there will be an irretrievable loss of construction materials. Construction materials include any material used during the construction of the proposed action (e.g. lumber, metal reinforcement materials, asphalt, concrete, graveling materials, temporary erosion control materials, etc).

Thank you for your comments and recommendations with regards to this project. Your participation in the planning phase of the project is greatly appreciated. Please feel free to contact Ms. Denise Wong at 527-5151 should you have any further comment.

Very truly yours,


WAYNE M. HASHIKO, P.E.
Director

NOV - 2 2005

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FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPPOLEANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HR005/1953

October 28, 2005

Denise Wong
Department of Design and Construction
City and County of Honolulu
650 South King Street, 14th floor
Honolulu, HI 96813

RE: Request for comments on a Draft Environmental Assessment (DEA) for a Soil Management Project, Sand Island Wastewater Treatment Plant, Honolulu, O'ahu; TMK: 1-5-041:005

Dear Denise Wong,

The Office of Hawaiian Affairs (OHA) is in receipt of your September 23, 2005, request for comments on the above-referenced proposal which would include the re-use of approximately 77,000 cubic yards of stockpiled soil containing low-level polychlorinated biphenyl (PCB) contamination, by spreading it over the 9-acre Wastewater Treatment Plant project site. OHA apologizes for the delayed response and offers the following comments.

The study's preferred alternative appears to be the most effective of those listed, from an environmental and economic perspective, particularly if the State Department of Health's (DOH's) requirements are met. OHA questions, however, whether other bio-remediation methods were considered. OHA also wonders about the protections provided to the environment while the soil was stockpiled for two years and testing done on nearby soils for potential leaching and extended contamination of the ground and groundwater.

OHA will rely on the applicant's assurances that there will be no discharge or leaching of contaminants or soils into the nearshore waters and no human or environmental health impacts, per DOH parameters. While §4.1.4 Ocean Ecosystem (p. 16 of the DEA) notes that the engineering controls required of the project "will control soil erosion and reduce the amount of

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CITY AND COUNTY OF HONOLULU

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WAYNE M. HANNO, P.E.
DIRECTOR
BLAINE C. LEE, P.E.
DEPUTY DIRECTOR
WWW.PDE.05-224

DAVID HANSEN
MAYOR

November 8, 2005

Denise Wong
October 28, 2005
Page 2

soil entering storm drainage systems during heavy rains". OHA remains concerned about the quantity of soil that will still be entering the ocean after that reduction. Thus, we request assurances that the Long Term Maintenance and Monitoring plan include regular testing and monitoring of the nearshore ocean resources, many of which are used by Native Hawaiian subsistence gatherers.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Heidi Guth at (808) 594-1962 or e-mail her at heidi@guth.org.

Sincerely,

Clyde W. Namu'o
Administrator

CC: / Colette Sakoda
Environet, Inc.
2850 Pa'a Street
Suite 212
Honolulu, HI 96819

Office of Environmental Quality Control
236 South Beretania Street
Suite 702
Honolulu, HI 96813

Mr. Clyde W. Namu'o
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Namu'o:

Subject: Draft Environmental Assessment - Soil Management Project,
Sand Island Wastewater Treatment Plant, Honolulu, Hawaii.

This letter is in response to the comments received in your letter dated October 28, 2005 for the subject project. The following are responses to the concerns raised.

1. *The study's preferred alternative appears to be the most effective of those listed, from an environmental and economic perspective, particularly if the State Department of Health's (DOH's) requirements are met. OHA questions, however, whether other bio-remediation methods were considered.*

Polychlorinated biphenyls (PCBs) are recalcitrant compounds that do not "break down" easily through natural biodegradation processes. Research was conducted into the feasibility of bioremediation of PCBs in soil. Bioremediation of PCBs has seen some success in the laboratory environment, but has shown very limited to no success in field applications. Therefore, other physical treatment processes such as solvent extraction and thermal desorption were explored in the Soil Management Plan instead of bioremediation.

2. *OHA also wonders about the protections provided to the environment while the soil was stockpiled for two years and testing done on nearby soils for potential leaching and extended contamination of the ground and groundwater.*

The stockpile is being maintained by the construction contractor using temporary erosion controls (i.e. dust screen, silt fence and hydromulching). These control measures mitigate the effects of fugitive dust and soil erosion on surrounding properties as well as operations at the site.

Mr. Clyde W. Namu'o
Page 2
November 8, 2005

PCBs have a very low affinity to water and "bind" tightly to soil. Therefore, PCBs will not migrate with percolation of water through the soil column down to the groundwater table. Previous sampling at the Sand Island WWTTP site has confirmed that PCBs have not migrated to the groundwater or soil below the groundwater table as all groundwater and soil sample results below the groundwater table were non-detect for PCBs. Furthermore, a site investigation within the project area surrounding the soil stockpile was conducted and did not indicate migration of PCBs from the soil stockpile. Therefore, PCB contaminated soil at the site has not migrated off site or leached to the groundwater.

3. *OHA will rely on the applicant's assurances that there will be no discharge or leaching of contaminants or soils into the nearshore waters and no human or environmental impacts, per DOH parameters. While §4.1.4 Ocean Ecosystem (p.16 of the DEA) notes that the engineering controls required of the project "will control soil erosion and reduce the amount of soil entering storm drainage systems during heavy rains", OHA remains concerned about the quantity of soil that will still be entering the ocean after that reduction. Thus, we request assurances that the Long Term Maintenance and Monitoring plan include regular testing and monitoring of the nearshore ocean resources, many of which are used by Native Hawaiian subsistence gatherers.*

As described in Section 2.11 of the DEA the future characteristics of the site are such that soil will either be covered by asphalt, gravel with a geotextile filter fabric, or retained by a shotcrete wall and thus will not be exposed to the environment.

The Long Term Maintenance and Monitoring Plan will include periodic inspections and maintenance repairs of the ground cover at the project site. If a major breach of the engineering controls is discovered and runoff of sediments is verified, appropriate remedial actions will be taken.

Thank you for your comments and recommendations with regards to this project. Your participation in the planning phase of the project is greatly appreciated. Please feel free to contact Ms. Denise Wong at 527-5151 should you have any further comment.

Very truly yours,

Wayne M. Hashiro
WAYNE M. HASHIRO, P.E.
Director

11/08/2005 09:44 FAX 808 527 5142 CAC DESIGN & CONSTR.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF STATE PARKS
1515 ALI'OLE DRIVE
HONOLULU, HAWAII 96813

November 2, 2005

Wayne M. Hashiro, P.E., Director
Department of Design and Construction
City and County of Honolulu
650 S. King St., 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Hashiro:

We have no comments to offer on the Draft Environmental Assessment for the Soil Management Project, Sand Island Wastewater Treatment Plant, Honolulu, Hawaii.

Thank you for the opportunity to review the document.

Very truly yours,

Daniel S. Quinn
Daniel S. Quinn
State Parks Administrator

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DESIGN & CONSTRUCTION
WASTEWATER DIVISION

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF STATE PARKS
HONOLULU, HAWAII