

# HANNEMANN ADMINISTRATION EFFORTS

A. Increased Resources

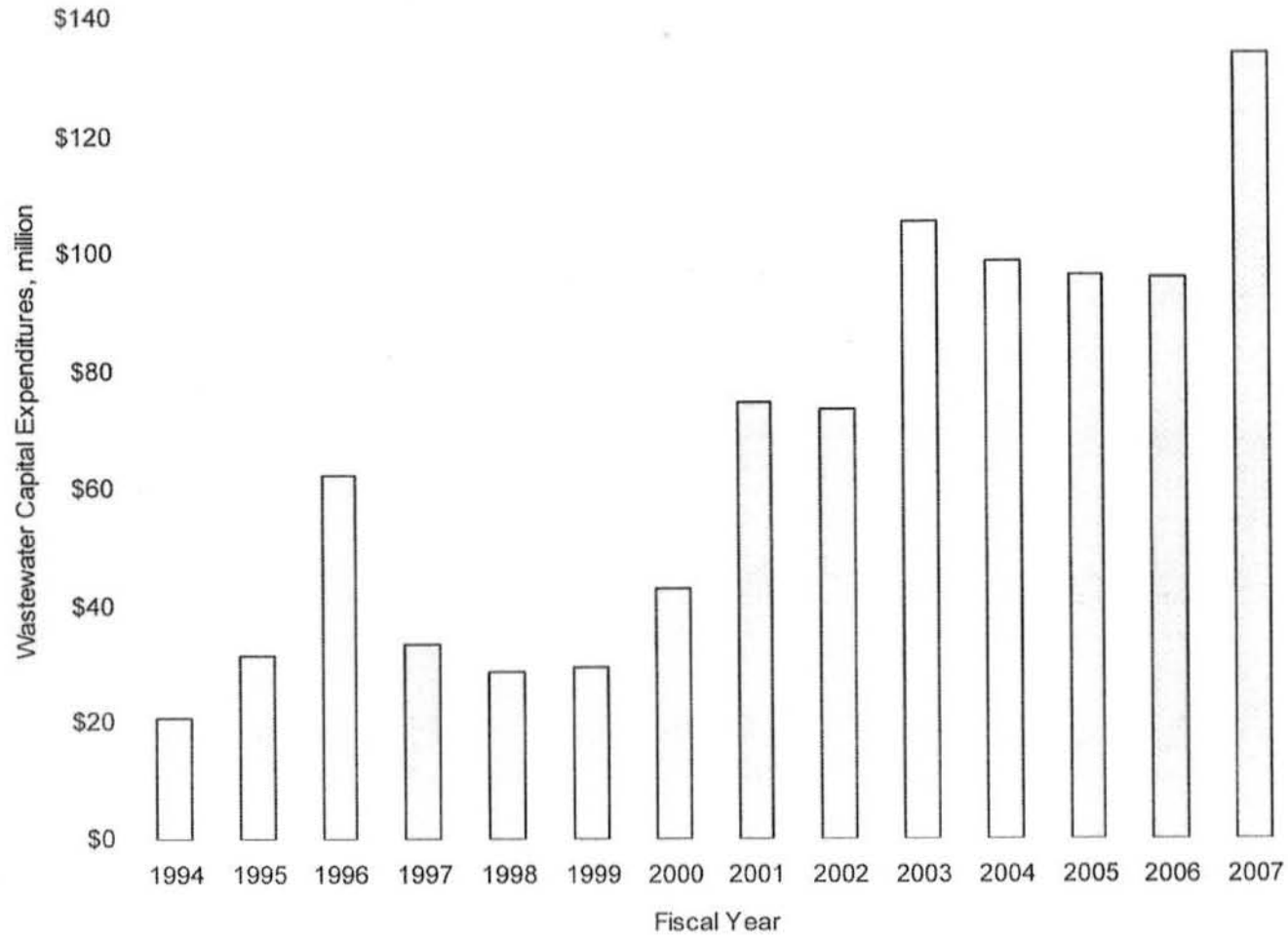
B. Reduced Spills

C. Not Business as Usual

# A. Resources

- Increased annual wastewater capital program:
  - \$120 million in FY05
  - \$240 million in FY06
  - \$355 million in FY07
  - \$351 million in FY08
- Increased monthly sewer fees from \$33 in FY 2005 to \$56 in FY 2008
- Programmed annual increases of 18%, 18%, and 15% for FY 2009 – FY 2011
- Average monthly sewer fees will be \$91 per month in 2011

# Wastewater Capital Expenditures



## Sand Island WWTP Upgrades

Expansion (2005): constructed new headworks and increased capacity from 82 million gallons per day (MGD) to 90 MGD, added two new primary clarifiers.

*More than \$104 million*

Disinfection Facility (2007): constructed new ultraviolet disinfection facility and effluent pump station.

*More than \$115 million*

Interim Chemical Treatment Facility Improvements (2000): Upgrades to chemical treatment facility.

*More than \$1.5 million*

In-Vessel Bioconversion Facility (2006): constructed new anaerobic digester, dewatering and drying facility.

*More than \$41 million*

## Honouliuli WWTP Upgrades

Expansion Phase I Part A (1993): constructed two new primary clarifiers, pre-aeration and grit hopper and odor control.

*More than \$19 million*

Expansion Phase I Part B (1994): added a process steam boiler, odor control, brackish water wells, sludge pumps, and scum piping system improvements.

*More than \$5 million*

Maintenance Building (1996).

*More than \$4 million*

Secondary Treatment Facilities (1997): constructed bio-towers, solids contact tanks, two secondary clarifiers, and all ancillary secondary treatment facilities.

*Nearly \$26 million*

## Honouliuli WWTP Upgrades (cont'd)

Effluent Reuse Demonstration Project (1998): installed pumps, piping, meters, and percolation trench.

*More than \$1 million*

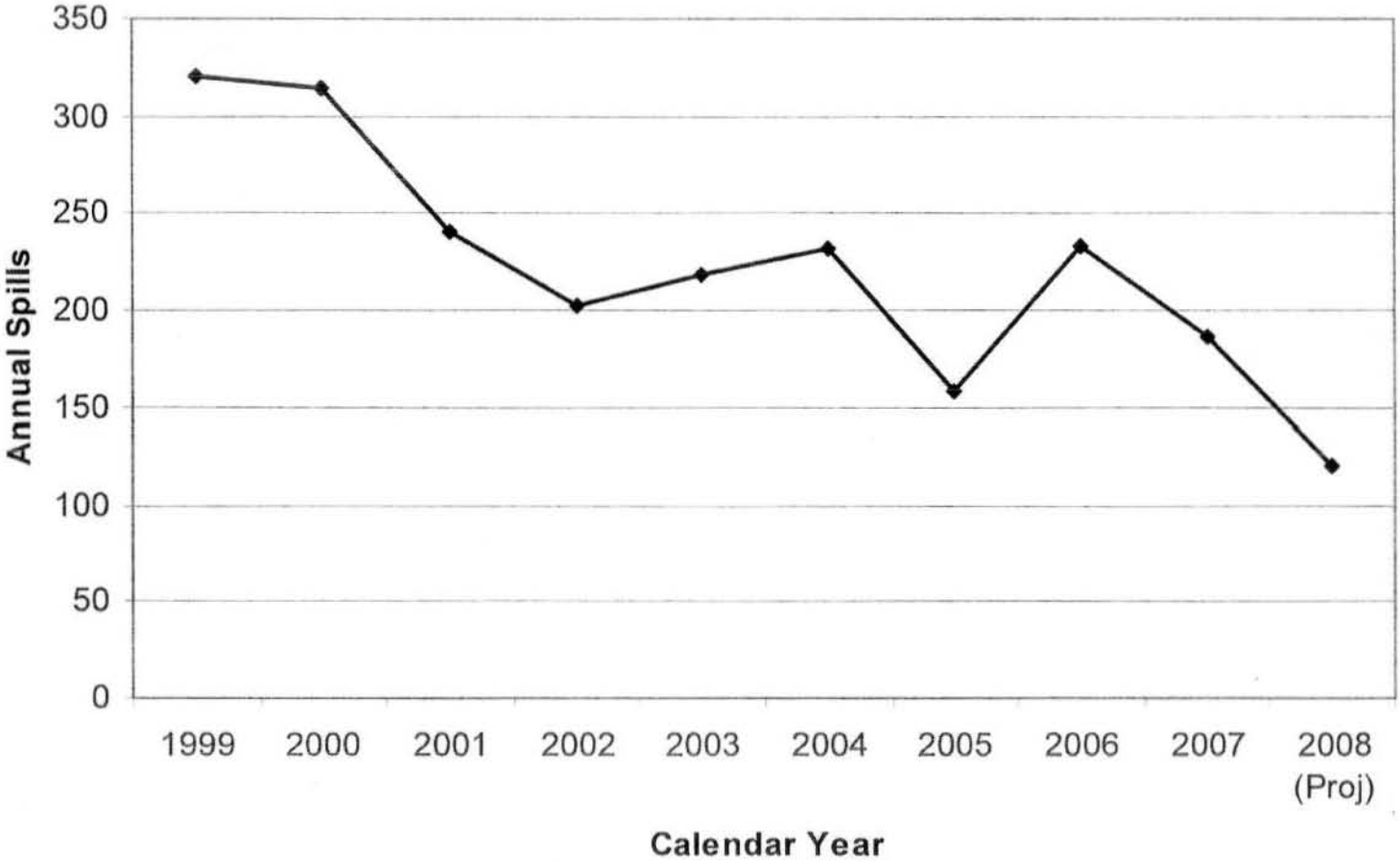
Solids Handling Facilities – Interim Modifications (2006): construction of improvements to heat treatment solids processing system, solids tanks, and associated piping.

*Nearly \$2 million*

New Solids Handling Facilities (in construction): new anaerobic digester tanks

*More than \$41 million*

# B. Reduced Spills (All Sources)



# Spill Frequency Benchmarks

Source	Year	Number of Agencies	Average Spills/ 100 miles /year
ASCE (Black & Veatch)	1999- 2000	36	4.2
San Diego (R.W. Beck)	2000	11	4.0 <sup>1</sup>
EPA Region 9 Total System Average <sup>2</sup>	1999- 2000	83	4.6
California Agencies > 700 miles <sup>3</sup>	2007	18	4.7

**CCH spill rate for 12 months from 8/1/07- 7/31/08 is 2.7**



## C. Not Business as Usual

- Secured the services of one of the leading wastewater engineering companies in the world, as Program Manager, to assist the City in revamping the technical and financial components of the program.
- Creating a “long-term” Vision Plan for ENV that would bring our program into the 21st century in terms of use of new technologies.
- Constructed Niu Valley Force Main to replace the black tube in Kalanianaʻole Highway, utilizing a “design-build” approach that enabled us to complete the project in 2 years.
- Studying deep gravity-sewer tunnels to eliminate the need for force mains (like Beachwalk) and pump stations in several areas, and ultimately to reduce O&M costs of our collection system.

# 301(h) Waivers

- Secondary treatment is mandated by federal law, except where the discharger can prove that it qualifies for a “waiver” (e.g., deep ocean dischargers)
- Waivers are valid for 5 years, then reapply
- Applicants need to prove 9 criteria are met; basically that the discharger is not negatively impacting the environment at the outfall

# Honouliuli 301(h) Permit Chronology

- 1979 CCH applies for 301(h) Variance
- 1983 CCH submits reapplication
- 1988 Tentative Decision Grants Variance
- 1991 301(h) Permit Issued
- 1995 Reapplication Submitted
- 1996 Permit Administratively extended
- 2000 Re-Application Updated
- 2004 Re-Application Updated
- 2007 Tentative Decision recommends Variance be denied
- 2009 Final Decision Denying Request for 301(h) Variance

# **Sand Island 301(h) Permit Chronology**

- 1979 CCH applies for 301(h) Variance
- 1983 CCH submits reapplication
- 1985 Tentative Decision Granting Variance
- 1990 301(h) Permit Issued
- 1994 Reapplication Submitted
- 1998 New 301(h) Permit Issued
- 2003 Re-Application Submitted
- 2003 Permit Administratively Extended
- 2007 Tentative Decision Recommends Variance be denied
- 2009 Final Decision Denying Request for 301(h) Variance

# **Basis for Appeals**

- CITY IS MEETING ALL 9 CRITERIA
- NO HARM TO THE ENVIRONMENT AFTER DECADES OF OCEAN MONITORING OF OUR DEEP OCEAN OUTFALLS (WHERE NO RECREATION OCCURS)
- DENIALS BASED ON INCORRECT AND OUTDATED STATE WATER QUALITY STANDARDS

Westlaw

40 C.F.R. § 131.20

Page 1

C

Effective:[See Text Amendments]

Code of Federal Regulations Currentness

Title 40. Protection of Environment

Chapter I. Environmental Protection Agency  
(Refs & Annos)

Subchapter D. Water Programs

☐ Part 131. Water Quality Standards  
(Refs & Annos)☐ Subpart C. Procedures for Review  
and Revision of Water Quality Standards→ § 131.20 State review and revision  
of water quality standards.

(a) State Review: The State shall from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. Any water body segment with water quality standards that do not include the uses specified in Section 101(a)(2) of the Act shall be re-examined every three years to determine if any new information has become available. If such new information indicates that the uses specified in Section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly. Procedures States establish for identifying and reviewing water bodies for review should be incorporated into their Continuing Planning Process.

(b) Public Participation: The State shall hold a public hearing for the purpose of reviewing water quality standards, in accordance with provisions of State law, EPA's water quality management regulation (40 CFR 130.3(b)(6) ) and public participation regulation (40 CFR Part 25). The proposed water quality standards revision and supporting analyses shall be made available to the public prior to the hearing.

(c) Submittal to EPA: The State shall submit the results of the review, any supporting analysis for the use attainability analysis, the methodologies used for site-specific criteria development, any general policies applicable to water quality standards and any revisions of the standards to the Regional Administrator for review and approval, within 30 days of the final State action to adopt and certify the revised standard, or if no revisions are made as a result of the review, within 30 days of the completion of the review.

SOURCE: 48 FR 51405, Nov. 8, 1983; 57 FR 60910, Dec. 22, 1992, unless otherwise noted.

AUTHORITY: 33 U.S.C. 1251 et seq.

40 C. F. R. § 131.20, 40 CFR § 131.20  
Current through January 8, 2009; 74 FR 788

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# Star Bulletin .COM

Vol. 12, Issue 136 - Wednesday, May 16, 2007



FL MORRIS / [FMORRIS@STARBULLETIN.COM](mailto:FMORRIS@STARBULLETIN.COM)

The Environmental Protection Agency held a hearing at Kapolei Middle School yesterday on its plans to revoke its waiver of secondary sewage treatment at the Honouliuli Sewage Plant. Ken Kawahara of the city Department of Environmental Services addressed a large crowd supporting continuation of the waiver. [CLICK](#)

[FOR LARGE](#)

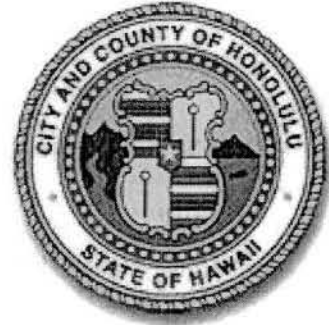
## Plant upgrade a waste, EPA told

By Diana Leone  
[dleone@starbulletin.com](mailto:dleone@starbulletin.com)

Upgrading the Honouliuli sewage treatment plant at a cost of \$400 million would be a waste of money that could be better spent fixing aging sewage pipes.

That was the message from dozens of people, including scientists who specialize in wastewater treatment and marine life, to representatives of the U.S. Environmental Protection Agency last night.

The EPA hearing before about 200 people at Kapolei Middle School was to get feedback on the agency's tentative decision to require the city to upgrade the level of treatment at the Honouliuli plant. The EPA wants the city to upgrade the plant to give secondary treatment to sewage in line with the federal Clean Water Act. City officials say this will cost \$400 million and is unnecessary. They want a continuation of the 301H waiver that allows them to conduct only primary treatment of sewage.



The agency will receive comment on its tentative decision until August, after which officials will make a final decision.

The plant treats sewage for about 340,000 residents of Waipahu, Pearl City, Halawa and Ewa Beach.

"Asking for this variance does not mean we do not care about our environment," said Maeda Timson, chairwoman of the Waianae Coast Neighborhood Board. But there is "no evidence that marine life, drinking water, or swimmers are in danger," she said. "In 36 years I have lived in Makakilo and 10 years I have been Neighborhood Board chair, not once did we ever hear any complaints of any such thing about anything in our waters that was not safe or of anyone that was sick."

Among those testifying in favor of the plant continuing to discharge primary treated sewage were engineers Woodie Muirhead, Robin Matsunaga, Roy Abe and Robert Rocheleau.

Richard Brock, a marine researcher at the University of Hawaii, said that in studying coral reefs near the Honouliuli outfall since 1991, he has seen no negative impact.

"Even your 102-page summary document denying the 301H waiver says there is no impact," Brock said. "I think EPA is not interested in what science is or what citizens really think."

The city reapplied for its waiver for 1995, but the EPA did not respond until now. "How cavalier," Brock said. "How would you each like to pay \$300 a month for a sewage bill?"

Also on the record asking EPA to continue the waiver were representatives of Sens. Daniel Akaka and Daniel Inouye, Rep. Neil Abercrombie, and Councilmen Todd Apo and Nestor Garcia.

State officials with the Department of Health, which partners with the EPA to enforce water-quality laws, were in the crowd but did not speak.



However, Watson Okubo, who heads the state DOH water-quality division, asked that EPA postpone any decision until after current revisions of water-quality standards are completed. "It's common knowledge among scientists in Hawaii that Hawaii water-quality standards are in need of revision," he said.

Article URL: <http://starbulletin.com/2007/05/16/news/story07.html>  
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# CONSEQUENCES

- Estimated cost of \$1.2 billion to upgrade Sand Island and Honouliuli Treatment Plants, not including additional operating costs
- Would require deferral of work on the collection system, which MAYOR / EPA / DOH believe should be prioritized, as that is where spills affect people most directly

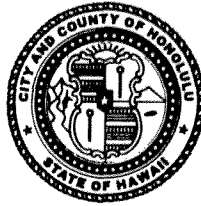
# CONSEQUENCES

- Harm to Environment
  - Sand Island:
    - Increased carbon emissions equivalent to adding 6,600 cars per day to Oahu's roads
    - Greenhouse gases equivalent to 4,780 households
  - Honouliuli:
    - Increased carbon emissions equivalent to adding 4,000 additional cars per day to Oahu's roads
    - Greenhouse gases equivalent to 1,210 households

DEPARTMENT OF THE CORPORATION COUNSEL  
**CITY AND COUNTY OF HONOLULU**

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MUFI HANNEMANN  
MAYOR



CARRIE K.S. OKINAGA  
CORPORATION COUNSEL

DONNA M. WOO  
FIRST DEPUTY CORPORATION COUNSEL

January 14, 2009

The Honorable Linda Lingle  
Governor of Hawaii  
Executive Chambers  
State Capitol  
Honolulu, Hawaii 96813

Dear Governor Lingle:

I have been fully briefed regarding the EPA's final decisions denying the City and County of Honolulu's applications for renewed 301(h) variances of the Sand Island and Honouliuli Wastewater Treatment Plants issued last week (the "Final Decisions"). It is apparent that the Final Decisions rest significantly on the conclusion that the City's discharges would result in exceedances of the State's water quality standards, standards that the State Department of Health ("DOH") has committed to correct and update. I would very much appreciate your personal attention to this matter, as the consequences of DOH's inaction have now been made evident, and the ratepayers of the Island of Oahu are entitled to answers and/or a plan going forward.

- **October 15, 2007:** In response to claims by the Sierra Club and other plaintiffs that the City should be assessed violations for exceeding permit effluent limits for the pesticide chlordane, Deputy Director of Health Laurence Lau executed a declaration acknowledging that the published water quality standard for chlordane, 0.000016 µg/L, was erroneous and the correct standard should be 0.00016 µg/L. **Mr. Lau affirmed that the Department of Health intended to rectify this error. See Attachment 1.**
- **March 5, 2008:** Dr. Eric Takamura wrote to Mr. Lau asking DOH to correct the typographical error and explained that,

**[i]t would also ensure a fair evaluation of our 301(h) waiver application...if we could inform the EPA that your Department intends to not only correct the typographical error discussed above but also intends to revise its water quality standards to more accurately reflect standards appropriate for**

**the protection of public health and the environment, as currently reflected in the updated 2002 National Recommended Water Quality Criteria.**

(Emphasis added). Dr. Takamura noted that the EPA's tentative decision to deny a renewed 301(h) variance for the Sand Island Wastewater Treatment Plant was based in significant part on the assertion that the City did not satisfy the water quality standards for the pesticides chlordane and dieldrin, and stated, "We believe that the City is being penalized, not only for violating a chlordane standard that is erroneous by a factor of 10, but also chlordane and dieldrin standards that no longer reflect current scientific knowledge." Dr. Takamura also asked DOH to act on its proposed revisions to the enterococcus water quality standards, which have been pending since 2005, to address ambiguities in the current standards that were noted in the EPA's tentative decision. See Attachment 2.

- **April 21, 2008:** I wrote to you asking for your support for the City's reapplication for 301(h) waivers for the Sand Island and Honouliuli treatment plants, and for a response to Dr. Takamura's March 5, 2008 letter:

The requested amendments [to the State's water quality standards] are non-controversial, and are in all cases consistent with what DOH has fairly acknowledged it intends, and needs, to do. This objective information could then be fairly considered by the Court and EPA, and may allow our residents to avoid, or may at least mitigate, the burden of undue penalties based on monitoring results that are consistent with corrected and appropriate water quality standards, reflective of current information and new federal guidelines. **The amendments are of urgent and critical importance to the City, because these erroneous and outdated water quality standards are the basis of litigation against the City, and of the EPA's tentative decision to deny the City's reapplication for its 301(h) waivers.** (Emphasis added).

See Attachment 3.

- **May 19, 2008:** You declined to take a position on the 301(h) applications, and stated that the Department of Health is proceeding on proposed changes to at least two of the standards. See Attachment 4.
- **May 20, 2008:** State Deputy Director Larry Lau writes a letter to the City that DOH is pursuing revision to its bacterial indicator standards, and will correct the typographical error and adopt the federal standard for enterococcus. See Attachment 5.

- **September 18, 2008:** With no apparent progress being made by DOH, the City petitioned DOH to amend the water quality standards for chlordane and dieldrin to conform to the 2002 National Recommended Water Quality Criteria. See Attachment 6.
- **October 17, 2008:** DOH granted the City's petition, "to the extent of committing to begin the review and rule amendment process for all toxic pollutant criteria, **including chlordane and dieldrin, to meet the 2006 National Recommended Water Quality Criteria.**" See Attachment 7.

In spite of the City's repeated requests and DOH's agreement, DOH has yet to amend the State's water quality standards, and the EPA's Final Decisions are based on projected exceedances of the State's existing water quality standards. As stated in the final decision for Sand Island:

HDOH (Lau, October 15, 2007) recently stated that the State water quality standard for fish consumption for chlordane (0.000016 µg/L) is a typographical error in the HAR 11-54-4(b)(3). This statement asserts that the correct standard should be 0.00016 µg/L and that HDOH intends to rectify this error. **However, HDOH did not submit comments on the TDD [Tentative Decision Document], nor has the standard been changed...Until such an amendment is formally adopted by the State and approved by EPA, the value currently contained in the HAR 11-54 applies. EPA is required to assess attainment with the existing standard.** (Emphasis added).

The Final Decisions were accompanied by the EPA's response to comments it had received to the tentative decisions. In response to the City's comments, the EPA stated:

The Hawaii water quality standard protective of fish consumption for the carcinogenic pesticide chlordane is 0.000016 µg/L.

...

**Although, in October 2007, HDOH stated their intent to amend the fish consumption water quality standard for chlordane, they have not yet conducted the formal process to amend the Hawaii water quality standards....Until an alternative criterion is approved, 0.000016 µg/L remains the water quality standard for**

**fish consumption for chlordane and is the appropriate value for the 301(h) evaluation. (Emphasis added).**

The EPA also stated, in response to the City's comment that HDOH has not revised its water quality standard for chlordane and dieldrin since the 1990's, and that the current water quality standards are derived from outdated 1980 EPA ambient water quality criteria:

It is not appropriate for EPA to assess the effluent concentrations of chlordane and dieldrin against criteria that may or may not be adopted in the future. In the tentative decision for the Sand Island discharge, EPA assessed the effluent concentrations of chlordane and dieldrin against Hawaii water quality standards contained in HAR 11-54-4(b)(3).

The EPA explicitly points out in several places throughout its response to comments that HDOH did not submit any comments to its tentative decision.

It is at best a disservice to the residents of the City and County of Honolulu that the State has allowed decisions of this magnitude to rest on DOH inaction.

Pursuant to Section 303 of the Clean Water Act and 40 C.F.R. 131.20(a), DOH is required to review its water quality standards at least once every three (3) years and, if appropriate to revise or adopt new standards. Not only are the updates overdue, but the State had ample notice beginning more than one year ago that appropriate water quality standards were of utmost importance to the City, and that the Final Decisions and potential penalties in litigation were at stake. Now, at this time when Hawaii's residents are facing unprecedented financial turmoil and uncertainty, Honolulu is confronted with a \$1.2 billion mandate that may have been averted if DOH had performed its legal duty to timely review and update its water quality standards. Regardless of your position on the City's 301(h) waivers, the State nonetheless has a responsibility to ensure that the EPA decisions, and any Court decisions, be made with the full benefit of the State's position and intentions regarding its water quality standards.

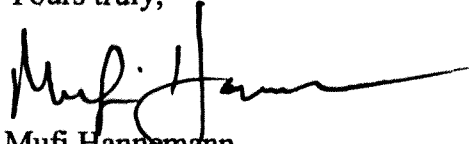
The City plans to appeal the Final Decisions, and remains hopeful that prompt action by the State may still be helpful in mitigating the potentially severe and unjustified consequences of the Final Decisions and pending litigation. I ask that you take immediate action to update the State's water quality standards in accordance with DOH's expressed commitment,

The Honorable Linda Lingle  
January 14, 2009  
Page 5

including preparing draft rule amendments and rationales which may be considered by the Environmental Appeals Board and the Courts.

Thank you for your immediate attention to this matter.

Yours truly,

A handwritten signature in black ink, appearing to read "Mufi Hannemann", with a long horizontal flourish extending to the right.

Mufi Hannemann  
Mayor

cc: The Honorable Daniel K. Inouye  
The Honorable Daniel K. Akaka  
The Honorable Neil Abercrombie  
The Honorable Mazie K. Hirono  
Kathleen S.Y. Ho, Attorney General's Office  
Ted Bohlen, Attorney General's Office  
Chiyome L. Fukino, Department of Health  
Laurence K. Lau, Department of Health

Attachments





**DECLARATION OF LAURENCE K. LAU**

I, Laurence K. Lau, declare as follows:

1. I am the Deputy Director of Health, for the State of Hawaii Department of Health. I have been informed of the following facts and believe them to be true, and would testify thereto if called as a witness.

2. Attached hereto as Exhibit "A" is a true and correct copy of the Rationale for the Proposed Revisions to the Department of Health Administrative Rules, Title 11, Chapter 54, Water Quality Standards (the "WQS Rationale"). As described in the WQS Rationale, the State of Hawaii Water Quality Standards for toxic pollutants, as set forth in Hawaii Administrative Rule §11-54-04 ("WQS"), were derived from the U.S. Environmental Protection Agency ("EPA") 1986 and 1987 Water Quality Criteria (the "EPA Criteria").

3. In particular, the WQS for fish consumption for chlordane were derived from the EPA Criteria based on one excess cancer case in a million people, also stated as carcinogenicity of  $10^{-6}$  risk.

4. The WQS fish consumption standards were also approximately 3.1 times more stringent than the EPA Criteria, because the average daily consumption of fish locally was estimated to be approximately 3.1 times higher than the average underlying the EPA Criteria.

5. The EPA fish consumption criterion for chlordane, based on carcinogenicity of  $10^{-6}$  risk was 0.48 ng/l (“nanogram/liter”). 1/3 of that value is 0.16 ng/l or 0.00016 ug/l (“microgram/liter”).

6. Correctly applying the methodology that was used to derive the WQS for all other pollutants, the WQS, § 11-54-04(b)(3), HAR for fish consumption for chlordane should be 0.00016 ug/l, rather than 0.000016 ug/l as listed in HAR §11-54-04(b)(3).

7. The WQS for chlordane set forth in HAR §11-54-04(b)(3), of 0.000016 micrograms per liter, is a typographical error. The correct standard should be 0.00016 micrograms per liter.

8. EPA staff who worked on the original Hawaii WQS has confirmed the error.

9. The Department of Health intends to rectify this error.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on October 15, 2007, in Honolulu, Hawaii.

By



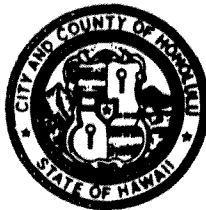
Laurence K. Lau  
Deputy Director of Health  
Department of Health, State of Hawaii



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

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DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.  
SECOND DEPUTY DIRECTOR

IN REPLY REFER TO:  
DIR 07.53

March 5, 2008

VIA HAND DELIVERY

Laurence K. Lau, Esq.  
Deputy Director  
Department of Health  
1250 Punchbowl Street, Third Floor  
Honolulu, Hawaii 96813

Dear Mr. Lau,

Let me begin by thanking you sincerely for the declaration you provided in October, 2007, acknowledging the typographical error in the State's water quality standards ("WQS") for chlordane fish consumption, set forth at §11-54-4(b)(3) of the Hawaii Administrative Rules. A copy of your declaration is enclosed, for your convenient reference. Unfortunately, the federal courts and the Environmental Protection Agency ("EPA") have both made explicitly clear that they will hold the City to the numerical standards set forth in the WQS, regardless of whether they are erroneous or outdated, until they are amended by your Department. You stated in your declaration that "the Department intends to rectify this error." The purpose of this letter is to urge you to please take immediate action to do so, in order to prevent inappropriate and drastic punitive consequences to the City's residents.

The WQS are of vital importance to the City, and are of critical significance at this time. First, the City is defending a lawsuit brought by the Sierra Club and other organizations. The surviving claims seek to impose penalties upon the City for, *inter alia*, violating the annual average effluent limits for chlordane and dieldrin established in the NPDES permit for the Sand Island Wastewater Treatment Plant ("SIWWTP"). As you know, the permit's effluent limits for chlordane are based on the erroneous WQS, and are ten times more stringent than intended. Nonetheless, in spite of your October 2007 declaration, the Court has indicated that it will hold the City to this erroneous limit.

Second, the EPA's tentative decision to deny our request for a renewed 301(h) waiver for the SIWWTP was based in significant part on the assertion that the City did not satisfy the WQS for chlordane and dieldrin.

Laurence K. Lau, Esq.

Page 2

March 5, 2008

In November, 2007, based in part on your declaration, we asked the EPA to grant a minor modification of the permit to correct the error in the chlordane annual average effluent limit. In its recent response, however, the EPA refused, claiming that an amendment to the WQS would first be necessary. See enclosed letter from Douglas Eberhardt dated February 11, 2008.

As you can see, this typographical error has had, and continues to have, grave implications for the City. However, if your Department acts promptly, we will be able to minimize further harm. We would be able to mitigate, or even avoid, the assessment of violations and penalties in the *Sierra Club* litigation resulting from the erroneous chlordane limit.

It would also ensure a fair evaluation of our 301(h) waiver application regarding the SIWWTP if we could inform the EPA that your Department intends to not only correct the typographical error discussed above but also intends to revise its water quality standards to more accurately reflect standards appropriate for the protection of public health and the environment, as currently reflected in the updated 2002 National Recommended Water Quality Criteria. We believe that the City is being penalized, not only for violating a chlordane standard that is erroneous by a factor of 10, but also chlordane and dieldrin standards that no longer reflect current scientific knowledge.

Finally, we ask that you please take action on your Department's proposed revisions to the enterococcus water quality standards, which have been pending since April, 2005, as described below.

1. Raise the water quality criterion for enterococcus from 7 cfu/100 ml to 35 cfu/100 ml, to apply to surface waters from the shoreline to the state's three-mile regulatory limit, and to a depth of 100 feet. As noted in the Executive Summary of the Proposed Amendments to the Hawaii Administrative Rules Chapter 11-54, Water Quality Standards, dated April 11, 2005:

Adopting the federal standard will allow better comparability with data collected from other states, and also make it easier to obtain accurate bacterial counts. Note that there is no credible scientific evidence that adopting the federal enterococcus criterion of 35 CFU per 100 ml water increases risk to public health, and that there is no measured level of risk to public health derived from data that applies below the federal criterion of 35 CFU per 100 ml, established on the basis of earlier research on the Mainland U.S. This amendment proposal is supported by EPA.

Your Department has also noted:

7 CFU/100 mL may have been appropriate back when established, but the DOH now thinks that additional and newer factors justify the change. The DOH will likely be able to use more rapid testing if it changes. All research and development for rapid detection of indicator bacteria is focused on the 35 level. No other state or territory is interested in developing rapid tests for the 7 CFU/100 mL level. The DOH wants a better way to distinguish natural conditions from sewage contamination. In many Hawaii coastal areas, ambient levels representing natural conditions exceed the 7 CFU/100 mL.

The DOH wants more consistent state standards and to reduce potential confusion over what protects health...No other state has lowered their standard below 35 CFU/100mL.

Hawaii State Dept. of Health Frequently Asked Questions: Water Warnings and Advisories.

2. Establish a single sample maximum of 100 cfu/100 ml within a proposed 500m recreational boundary, and a single sample maximum of 501 CFU/100 ml at distances greater than 500m from shore.

Formal adoption of your Department's proposed revisions to these enterococcus standards would address ambiguity in the current standards, which was noted in the EPA's tentative decision, and would be extremely important to the City's ongoing monitoring and compliance efforts.

Please let us know what action your Department intends to take in the near future to correct the chlordanes WQS. Please also let us know whether your Department intends to propose an amendment to the WQS to adopt the National Recommended Water Quality Criteria, particularly as it applies to chlordanes and dieldrin. Finally, please let us know what action your Department will be taking to adopt the April 2005 proposed revisions to the geometric mean and single grab sample limits for enterococcus in ocean waters. We trust that these are matters that your Department intends to pursue, and it is essential that we present this information to the EPA in order to ensure a correct decision on the City's 301(h) waiver application, and to avoid the imposition of any undue penalties and burdens on the City's residents.

As the litigation is proceeding and our response to the EPA's tentative decision is due on March 31, 2008, we would greatly appreciate a response by March 15, 2008. In the interests of fairness to the City's residents, we look forward to, and greatly appreciate, your Department's cooperation in this matter.

Laurence K. Lau, Esq.  
Page 4  
March 5, 2008

If you wish to discuss this further, I can be reached at 768-3486.

Very truly yours,

A handwritten signature in black ink that reads "Eric S. Takamura". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Eric S. Takamura, PhD, P.E.  
Director

EST:KAK:mw

Encs.

05-04697/13550

cc: Kathleen S.Y. Ho  
Edward G. Bohlen





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

February 11, 2008

Dr. Eric Takamura  
Director, Department of Environmental Services  
City and County of Honolulu  
1000 Uluohia Street, Suite 308  
Kapolei, Hawaii 96707

Re: Request for Minor Modification of Sand Island NPDES Permit

Dear Dr. Takamura:

I am writing in response to your November 26, 2007 letter requesting a minor modification of the chlordane effluent limitation contained in the National Pollutant Discharge Elimination System (NPDES) permit for the Sand Island Wastewater Treatment Plant (Sand Island WWTP), permit number HI0020117. We have reviewed your request and concluded that it is not appropriate to modify the Sand Island WWTP permit at this time.

The current permit contains average annual effluent limits of 0.0076  $\mu\text{g/l}$  for chlordane concentration and 0.0052 lbs/day for chlordane mass. These effluent limits are based on the State's current water quality standard protecting human health for fish consumption for chlordane. The current State water quality standard for fish consumption for chlordane contained in the Hawaii Administrative Rules (HAR), Chapter 11-54-4, water quality standards is 0.000016  $\mu\text{g/l}$ . This value was presented to the public and then adopted by the Hawaii Department of Health (HDOH) on November 20, 1989 and approved by EPA for Clean Water Act purposes on May 9, 1990. This value equates to a  $10^{-7}$  lifetime excess cancer risk level.

In your letter, you indicate that there is a typographical error present in the State of Hawaii's water quality standards and explain that an incorrect value in the State water quality standards was applied when determining the permit effluent limits for chlordane. As you point out, HDOH's rationale for developing their human health-based water quality standards for carcinogenic pollutants was based on a  $10^{-6}$  lifetime excess cancer risk level, and at a  $10^{-6}$  cancer risk level, the Hawaii water quality standard for fish consumption for chlordane would equate to 0.00016  $\mu\text{g/l}$ .

Changing the present water quality standard for chlordane requires a formal amendment to HAR Chapter 11-54-4. A formal amendment includes public participation, adoption by the State, and final approval by EPA under Clean Water Act section 303(c). In the past, when HDOH's review process detected typographical errors in their water quality standards, the errors were corrected using the formal amendment process. For example, other inadvertent typographical errors were corrected when Chapter 11-54 was amended by HDOH

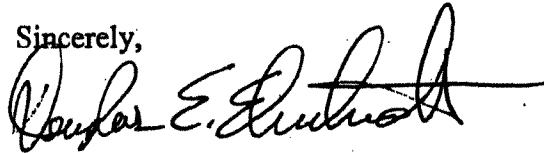
on August 31, 2004. Those amendments were approved by EPA on October 28, 2004. While we acknowledge the statement presented by Laurence Lau, Hawaii Department of Health Deputy Director, concerning this typographical error, HDOH has not yet amended the chlordane water quality standard in accordance with this process. Until the process to amend HAR Chapter 11-54-4 is conducted by the State and formally approved by EPA, EPA is not able to consider the requested change to the Sand Island WWTP permit requirements.

You have noted EPA's identification of 0.00016 µg/l as the Hawaii water quality standard for chlordane on page 56 of the March 27, 2007 tentative decision for the Honouliuli Wastewater Treatment Plant. This was a typographical error that will be corrected in the final Honouliuli decision document. The Honouliuli WWTP tentative decision correctly identified the existing water quality standard in Table 18 of the document. The current water quality standard for chlordane, 0.000016 µg/l, was printed in the December 7, 2007 tentative decision for the Sand Island WWTP.

Finally, as discussed in our response dated January 14, 2008, to another request to modify the Sand Island permit, the permit has expired and it is not appropriate to modify an expired permit.

If you would like to discuss this, please contact me by telephone (415-972-3420) or e-mail ([eberhardt.doug@epa.gov](mailto:eberhardt.doug@epa.gov)).

Sincerely,



Douglas E. Eberhardt  
Chief, NPDES Permits Office

cc: Laurence Lau, HDOH  
Alec Wong, HDOH  
Kelvin Sunada, HDOH

**DECLARATION OF LAURENCE K. LAU**

I, Laurence K. Lau, declare as follows:

1. I am the Deputy Director of Health, for the State of Hawaii Department of Health. I have been informed of the following facts and believe them to be true, and would testify thereto if called as a witness.
2. Attached hereto as Exhibit "A" is a true and correct copy of the Rationale for the Proposed Revisions to the Department of Health Administrative Rules, Title 11, Chapter 54, Water Quality Standards (the "WQS Rationale"). As described in the WQS Rationale, the State of Hawaii Water Quality Standards for toxic pollutants, as set forth in Hawaii Administrative Rule §11-54-04 ("WQS"), were derived from the U.S. Environmental Protection Agency ("EPA") 1986 and 1987 Water Quality Criteria (the "EPA Criteria").
3. In particular, the WQS for fish consumption for chlordane were derived from the EPA Criteria based on one excess cancer case in a million people, also stated as carcinogenicity of  $10^{-6}$  risk.
4. The WQS fish consumption standards were also approximately 3.1 times more stringent than the EPA Criteria, because the average daily consumption of fish locally was estimated to be approximately 3.1 times higher than the average underlying the EPA Criteria.

5. The EPA fish consumption criterion for chlordane, based on carcinogenicity of  $10^{-6}$  risk was 0.48 ng/l (“nanogram/liter”). 1/3 of that value is 0.16 ng/l or 0.00016 ug/l (“microgram/liter”).

6. Correctly applying the methodology that was used to derive the WQS for all other pollutants, the WQS, § 11-54-04(b)(3), HAR for fish consumption for chlordane should be 0.00016 ug/l, rather than 0.000016 ug/l as listed in HAR §11-54-04(b)(3).

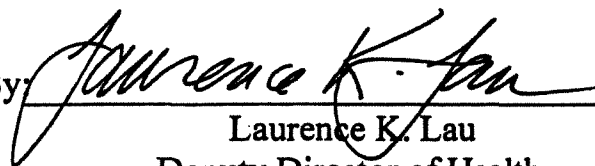
7. The WQS for chlordane set forth in HAR §11-54-04(b)(3), of 0.000016 micrograms per liter, is a typographical error. The correct standard should be 0.00016 micrograms per liter.

8. EPA staff who worked on the original Hawaii WQS has confirmed the error.

9. The Department of Health intends to rectify this error.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on October 15, 2007, in Honolulu, Hawaii.

By



Laurence K. Lau  
Deputy Director of Health  
Department of Health, State of Hawaii



OFFICE OF THE MAYOR  
CITY AND COUNTY OF HONOLULU

530 SOUTH KING STREET, \* HONOLULU, HAWAII 96813  
PHONE: (808) 523-4141 \* FAX: (808) 527-5552 \* INTERNET: [www.honolulu.gov](http://www.honolulu.gov)



MUFI HANNEMANN  
MAYOR

April 21, 2008

The Honorable Linda Lingle  
Governor of Hawaii  
Executive Chambers  
State Capitol  
Honolulu, Hawaii 96813

Dear Governor Lingle:

I am writing to respectfully request your support for the City's reapplication for variances under Section 301(h) of the Clean Water Act for the Sand Island and Honouliuli Wastewater Treatment Plants ("301(h) waivers"), or at a minimum, that you allow your State Department of Health ("DOH") to take a position with respect to these waivers. In the past, prior to your administration, DOH has consistently supported our waivers. As you know, the impact of the loss of these waivers would be severe on the residents of Honolulu, during what looks to be a troubled economic period.

We are not asking for favors. The local scientific and engineering communities have resoundingly spoken and written in support of the 301(h) waivers. Just last month, EPA's regional administrator for Region IX, Wayne Nastri, listened to a group of more than 60 speakers at EPA's March 12, 2008 public hearing, virtually all of whom urged EPA to renew the 301(h) waiver for the Sand Island Treatment Plant. Among the speakers were scientists, researchers and wastewater engineers, with decades of experience and expertise in evaluating our marine environment, all of whom *unanimously* spoke in support an extension of the waiver. They included individuals who specifically studied the impact of the Sand Island discharge, and individuals who assisted in developing the standards and information upon which EPA purports to rely. They stated repeatedly that EPA's tentative decision was erroneous, and that secondary treatment is unnecessary and unjustified. They have also been very effective in explaining to City residents why secondary treatment is not better for us, and they have taken the same position in support of the 301(h) waiver for the Honouliuli Treatment Plant. Enclosed are some of their statements published in our local papers.

The Honorable Linda Lingle  
April 21, 2008  
Page 2

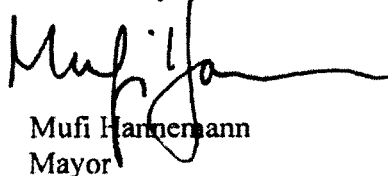
In addition, I am requesting your assistance in obtaining a response to the March 5, 2008 letter from Dr. Eric Takamura, Director of Environmental Services, to Laurence Lau, your Deputy Director for the DOH. The letter asked DOH to correct and update certain aspects of its water quality standards, and its plans for doing so. The requested amendments are non-controversial, and are in all cases consistent with what DOH has acknowledged it intends, and needs, to do. This objective information could then be fairly considered by the Court and EPA, and may allow our residents to avoid, or may at least mitigate, the burden of undue penalties based on monitoring results that are consistent with corrected and appropriate water quality standards, reflective of current information and new federal guidelines. The amendments are of urgent and critical importance to the City, because these erroneous and outdated water quality standards ("WQS") are the basis of litigation against the City, and of the EPA's tentative decision to deny the City's reapplication for its 301(h) waivers.

First, the City asked DOH to correct the typographical, 10-fold error in its fish consumption standard for chlordane. DOH affirmed in October 2007 that it would rectify this error. Second, we asked DOH to update its water quality standards, which it is obligated to do every three years, and which is now overdue. Until DOH does so, the City is being held to permit limits that were derived from EPA ambient water quality criteria that are nearly 30 years-old. We specifically asked DOH whether it intends to amend the WQS in accordance with the updated National Recommended Water Quality Criteria promulgated by EPA ("National Criteria"), given that these recommended National Criteria are based on a more appropriate methodology, updated toxicity data, and more accurate assumptions. Third, the City asked DOH to act on its proposed 2005 amendments to the WQS for enterococcus in recreational marine waters. To date, we have not received any response from DOH.

We welcome your and/or DOH's support of the City's 301(h) waivers, and look forward to receiving a response to Dr. Takamura's letter, and for prompt action on the non-controversial matters discussed therein. Dr. Takamura is available to discuss any concerns or questions Mr. Lau or his staff may have.

With warm regards and aloha,

Yours truly,



Mufi Hannemann  
Mayor

The Honorable Linda Lingle  
April 21, 2008  
Page 3

cc: Dr. Chiyome Leinaala Fukino, Director, Department of Health  
Mr. Laurence K. Lau, Deputy Director, Department of Health  
Dr. Eric S. Takamura, Director, Department of Environmental Services

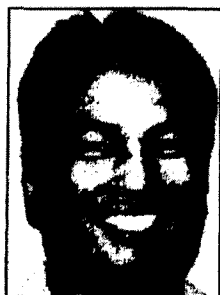
Enclosures



# Star Bulletin

mobile edition

Vol. 13, Issue 71 - Tuesday, March 11, 2008



## Gathering Place

John H. Katahira

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## EPA offers Honolulu a lose-lose proposition

The Hawaii Water Environment Association is Hawaii's leading organization recognized for preserving and enhancing our water environment. Most of our 480 members are experienced wastewater professionals: scientists, planners, engineers, laboratory technicians, equipment representatives and wastewater treatment plant, pump station and collections system operators. Our nonprofit, volunteer-based organization has supported a healthy water environment for more than 45 years.

For more than 20 years, we have observed proven-safe primary treatment at Sand Island Wastewater Treatment Plant with no measurable effects on human or marine life, or degradation of recreational waters.

Now, the U.S. Environmental Protection Agency has issued a tentative decision that will require the City and County of Honolulu to upgrade that plant to full secondary treatment. HWEA opposes this huge expense because it will not improve our recreational water quality and will harm the environment in other ways.

Twenty years of research and data collection show no scientific evidence that demonstrates the need for more advanced treatment. Hawaii's scientific wastewater community believes secondary treatment will not improve our water environment. In fact, science suggests that

EPA's tentative decision will increase production of greenhouse gases (widely believed to be a major contributor to global warming) and increased solids generation (which will contribute to our landfill challenges).

EPA's tentative decision will result in higher operations and maintenance costs, increased energy costs and an estimated \$800 million capital improvement cost (plus debt service) ... all of which will result in higher sewer bills. And let's not forget about the tentative decision EPA made for the Honouliuli Wastewater Treatment Plant last year. That tentative decision, which also is based on poor science, could cost our taxpayers another \$400 million in capital costs.

In the end, it's not about the money. It's about the preservation and enrichment of our environment: land, air and water. We need to make good environmental decisions, and the EPA has this one wrong.

Scientifically speaking, EPA wants the city to upgrade the facility to full secondary treatment when the process will not and cannot address the specific issues cited in their tentative decision: chlordane, dieldrin and ammonia. It's the equivalent to having open-heart surgery when all you have is a splinter in your finger.

Our mayor is committed to improving the city's aging wastewater collection system in order to reduce raw wastewater spills, as evidenced in the widely publicized Ala Wai Canal incident. This is where the city needs to focus its effort and resources. Improvements to our collection system will have a stronger impact on maintaining a healthy environment and protecting public health, not to mention sustaining Hawaii's leading economic industry – tourism. Raw wastewater spills almost always result in beach closures and jeopardize the health and safety of our residents, visitors and marine habitat.

EPA's tentative decision will harm our environment and will cost taxpayers – a true lose-lose proposition.

---

John H. Katahira is a professional civil engineer and the immediate past president of the Hawaii Water Environment Association.



Posted on: Tuesday, March 11, 2008

COMMENTARY

## Sewage treatment waiver backed by science

By Roy K. Abe

While the much-publicized mass transit debate continues, we must not ignore the ongoing battle over our sewage treatment system.

In one corner is the U.S. Environmental Protection Agency, which along with well-intentioned environmental groups, feels that secondary treatment is required for the city's Sand Island and Honouliuli wastewater treatment plants. In the other corner is the City and County of Honolulu, which along with local water quality professionals, believes this is wasteful and unnecessary.

With sewage spills making the headlines, few appreciate significant wastewater system improvements of the past 35 years. In fact, the public often associates those spills with the treatment plants, when the real problem is the collection system.

In 1972, 62 million gallons per day of untreated sewage was being discharged in 38 feet of water just 3,700 feet off Sand Island. By today's standards, this would essentially be a 62 million gallon sewage spill daily. There was a constant thick gray-brown surface plume and thick sludge deposits on the ocean floor. The sewage usually drifted toward 'Ewa Beach and sometimes to Ala Moana Beach. There were also numerous wastewater discharges into streams and Pearl Harbor.

Despite this, local residents and tourists still swam, surfed and fished in the coastal waters without much concern or serious outbreaks of disease. Local residents ate the ogo seaweed that grew abundantly in 'Ewa due to the wastewater nutrients.

It was not until the mid-1970s and early 1980s that most nearshore sewage discharges were eliminated for Leeward O'ahu. This resulted from construction of the Sand Island and Honouliuli primary treatment facilities and ocean outfalls. The two outfall pipes extended more than 1.5 miles into water more than 200 feet deep. Primary treatment removed floatable and settleable solids and the deep ocean outfalls dispersed effluent to allow natural degradation of remaining soluble organic constituents. Thanks to our early sewer system planners, the city has two energy-efficient primary treatment systems that cost-effectively eliminate adverse public health and marine environment impacts. They had the foresight to

eliminate most treated sewage discharges from our streams, bays and harbors.

The city primary treatment system is not in violation of water pollution regulations. In 1977, EPA implemented the 301(h) waiver program to allow primary treatment for ocean discharges, where oxygen depletion and excessive nutrients are not a problem (as it is in rivers and lakes). Along with reduced energy usage, primary treatment promotes sustainability through sequestration of carbon compounds in the ocean in lieu of releasing greenhouse gases into the atmosphere.

After all these years of permitting Honolulu with a waiver for these plants, and all these years of monitoring that shows no measurable environmental impacts, EPA inexplicably wants the city to spend nearly \$1 billion to go to secondary treatment.

The city's secondary waivers are supported by a diverse group that includes water quality specialists, wastewater engineers, marine biologists, microbiologists and health officials. The full unwavering support of the scientific and engineering community is rare and impressive.

EPA's tentative denial of the waivers despite the overwhelming supporting evidence indicates that EPA would like to put an end to the waiver program. EPA spent more than 10 years reviewing the city's waiver reapplication, which points to EPA's lack of resources and commitment. The waiver program is costly as EPA's consultants must conduct extensive technical reviews. Threats of lawsuits from environmental groups do not help. Denial of the waivers would reduce EPA's costs by shifting regulatory responsibility to the state Department of Health.

Environmental groups continue to support their normally logical mantra that more treatment is better. In the past, they have helped to secure funding for critical sewer line projects by calling attention to sewage spill problems. On the city's secondary waiver issue, however, they are off-base and not well informed. They are essentially promoting a mechanized treatment process that spews greenhouse gases.

Projected future \$300-per-month sewer fees to pay for secondary treatment will have tremendous financial impacts. It is senseless to create financial hardships and social problems by wasting hard-earned dollars on upgrades that provide no measurable public health and water quality benefits.

The general public, as well as lawmakers, community groups and business organizations, need to support the secondary treatment waivers. The Hawaii Water Environment Association Web site ([www.hwea.org](http://www.hwea.org)) includes a white paper discussing the waiver issue from a scientific viewpoint, and information on EPA's public hearing tomorrow on the Sand Island waiver.

Do not let politics affect your opinion. The secondary waiver is backed by sound science.

*Roy K. Abe is a consulting civil engineer with 27 years of experience in sanitary engineering. He wrote this commentary for The Advertiser.*

**Back**

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EXECUTIVE CHAMBERS  
HONOLULU

LINDA LINGLE  
GOVERNOR

May 19, 2008

The Honorable Mufi Hannemann  
Mayor of Honolulu  
City and County of Honolulu  
Honolulu Hale  
530 S. King Street  
Honolulu, Hawaii 96813

Dear Mayor Hannemann,

I have received your letter of April 21, 2008 requesting support for the City's 301(h) waiver application to U.S. Environmental Protection Agency (EPA) for the Sand Island and Honouliuli Wastewater Treatment Plants and changes to the state's water quality standards.

While I recognize that the City has written and testified at length on its position for extension of the waiver and received support from many citizens, the EPA has also provided compelling argument to support the basis for their position against further waiver extensions. The state does not intend to intercede on this matter or take a position on either view and prefers to allow the formal review process to determine the final decision on both applications.

As to the state water quality standards, the Department of Health is proceeding on proposed changes to at least two of the standards to which you refer. Any changes will undergo the public review process required by state administrative procedures. We have been advised that the EPA will also have to accept and approve the changes for these revisions to be effective under the federal clean water law.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda Lingle".

LINDA LINGLE

- c. Chiyome Leinaala Fukino, M.D., Director of Health  
Laurence K. Lau, DDEH, EHA, DOH  
Dr. Eric S. Takamura, P.E., Director, Env. Svs., C&C of Hon.





LINDA LINGLE  
GOVERNOR OF HAWAII



RECEIVED

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CHIYOME L. FUKINO, M.D.  
DIRECTOR OF HEALTH

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STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P O BOX 3378  
HONOLULU, HI 96801-3378  
ENVIRONMENTAL SERVICES  
DIVISION OF  
ENVIRONMENTAL QUALITY

PLEASE PRINT NAME AND  
FILE

May 20, 2008

Dr. Eric S. Takamura, P.E.  
Director  
Department of Environmental Services  
City & County of Honolulu  
Kapolei Hale  
1000 Uluohia Street, Suite 308  
Kapolei, Hawaii 96707

Dear Dr. Eric Takamura,

Re: State Water Quality Standards for Chlordane, Dieldrin, and Enterococcus

Thank you for your letter of March 5, 2008, on these subjects. I agree that appropriate water quality standards are important.

For the bacterial indicator standards, DOH is pursuing a revision to our current standards. Under the changes we will correct the typographical error for the chlordane standard and seek to change the marine recreational waters (up to 300 meters from shore) geometric mean for enterococcus from 7 to 35 colony forming units per 100 ml.

Procedure wise rule amendments are required to go through many steps and typically take a number of months. An important part of this process is obtaining public comment and input in addition to receiving the Small Business Regulatory Review Board review. The Environmental Protection Agency must also review and approve changes to state water quality standards if they are to be observed under the federal Clean Water Act.

Yours truly,

Handwritten signature of Laurence K. Lau in black ink.  
Laurence K. Lau  
Deputy Director for Environmental Health

c: The Honorable Linda Lingle, Governor  
The Honorable Mufi Hannemann, Mayor  
Chiyome Leinaala Fukino, M.D., Director of Health



DEPARTMENT OF ENVIRONMENTAL SERVICES  
**CITY AND COUNTY OF HONOLULU**  
1000 ULUOHIA STREET, SUITE 308 • KAPOLEI, HAWAII 96707  
PHONE: (808) 768-3486 • FAX: (808) 768-3487 • Website: <http://envhonolulu.org>

**FILE COPY**

MUFI HANNEMANN  
Mayor



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

KENNETH A. SHIMIZU  
Deputy Director

ROSS S. TANIMOTO, P.E.  
Deputy Director

September 18, 2008

EMC 08-202

Chiyome L. Fukino, M.D.  
Director of Health  
State Department of Health  
Environmental Management Division  
1250 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Fukino:

Subject: Petition for Rule Amendment of Hawaii Administrative  
Rule 11-54-4(b)(3) to Update Chlordane and Dieldrin Water  
Quality Standards for Fish Consumption

In accordance with Hawaii Administrative Rule (HAR) 11-1-51, the City and County of Honolulu, Department of Environmental Services hereby petitions the State Department of Health ("DOH") to amend HAR 11-54-4(b)(3) to amend the water quality standards for fish consumption for chlordane to 0.00081 µg/l and for dieldrin to 0.000054 µg/l based on the National Recommended Criteria ("National Criteria") promulgated by the Environmental Protection Agency ("EPA"), given that these recommended National Criteria are based on a more appropriate methodology and updated toxicity data.

The 1990 water quality standard for fish consumption for chlordane and for dieldrin listed in HAR 11-54-4(b)(3) are derived from outdated 1980 EPA ambient water quality criteria documents: *Ambient Water Quality Criteria for Chlordane* (1980 AWQC; EPA, October 1980). *Ambient Water Quality Criteria for Aldrin/Dieldrin* (1980 AWQC; EPA, December 1980).

Since the adoption of the current water quality standard for chlordane and dieldrin, the 1980 AWQC has been superseded based on significant federal regulatory changes that provide a more reliable protective concentration of chlordane and dieldrin

Chiyome L. Fukino, M.D.  
September 18, 2008  
Page Two

via fish consumption, however, DOH has not revised these standards. DOH is required, pursuant to Section 303 of the Clean Water and 40 Code of Federal Regulations 131.20(a), to review its water quality standards at least once every three (3) years and, if appropriate revise or adopt new standards. The review of the water quality standards is now overdue.

In 1997, EPA released its *Toxicological Review of Chlordane (Technical)* (EPA, December 1997). EPA's review contained results of several newer toxicological studies. In addition to updates in toxicity data, in 2002 EPA updated some of the fundamental assumptions used for computing fish consumption criteria. This was done in accordance with the *Federal Register* announcement on November 3, 2000 (Volume 65, Number 214), entitled *Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health*. Based on these scientific improvements in toxicity and exposure estimation, EPA released updated AWQC in *National Recommended Water Quality Criteria: 2002* (2002 AWQC; EPA Office of Water, November 2002). For chlordane and dieldrin, these 2002 AWQC continue to be in effect (*National Recommended Water Quality Criteria* [2006 AWQC; EPA Office of Water, 2006]). The protective concentrations are set at 0.00081 µg/l and 0.00054 µg/l respectively.

If you have any questions, please call me at 768-3486.

Sincerely,



Eric S. Takamura, Ph.D., P.E.  
Director

For Petitioner City and County of Honolulu  
Department of Environmental Services

EST/RT:kn

EST/RT



LINDA LINGLE  
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96801-3378  
October 17, 2008

In reply, please refer to:  
File:

Eric S. Takamura, Ph.D., P.E., Director  
Department of Environmental Services  
City and County of Honolulu  
1000 Uluohia Street, Suite 308  
Kapolei, HI 96707

Dear Dr. Takamura:

Subject: City Petition for Amendment of Hawaii Administrative Rule 11-54-4(b)(3) to Update Chlordane and Dieldrin Water Quality Standards for Fish Consumption

The Department of Health received your September 18, 2008 petition to change our water quality standards, which were last amended in 2004.

We are currently processing amendments to correct the typographical error in the chlordane standard, change the marine recreational waters (up to 300 meters from shore) geometric mean for enterococcus from 7 to 35 cfu per 100 ml, and correct a technical error. These limited amendments were noted in Mr. Laurence Lau's May 20, 2008, response to your March 5, 2008, letter to him about amending water quality standards.

We grant your Petition for Rule Amendment to update the chlordane and dieldrin water quality standards to those listed in the *National Recommended Water Quality Criteria* [EPA Office of Water, November 2006], to the extent of committing to begin the review and rule amendment process for all toxic pollutant criteria, including chlordane and dieldrin, to meet the 2006 National Recommended Water Quality Criteria.

We remind you that most rule amendments are subject to small business regulatory review, all amendments are subject to the formal public hearing process, and water quality rule amendments are subject to EPA review. Given our resources, we are unable to commit to a timetable now and will communicate with you again later.

If you would like to discuss this further, please contact Laurence Lau, Deputy Director for Environmental Health at 586-4424.

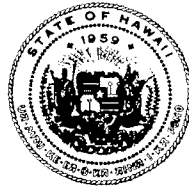
Sincerely,

A handwritten signature in black ink, appearing to read "Chiyome L. Fukino".

Chiyome L. Fukino, M.D.  
Director of Health

cc: Laurence Lau, DDEH  
EPO  
EMD, CWB

LINDA LINGLE  
GOVERNOR OF HAWAII



CHIYOME LEINAALA FUKINO, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
File:

**SENATE COMMITTEE ON HEALTH**  
**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT**  
**AND**  
**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION**

**Informational Briefing on State Water Quality Standards and City and County of  
Honolulu Treatment Facilities as Sand Island and Honouliuli**

**Testimony of Laurence K. Lau**  
**Deputy Director for Environmental Health**

**January 26, 2009**  
**2:45 p.m.**

1 Thank you for allowing us to testify on this matter. At issue are the City and County of  
2 Honolulu's (City) applications for Clean Water Act 301(h) variances from secondary treatment  
3 requirements for the Sand Island and Honouliuli Wastewater Treatment Plants (plants), the  
4 Environmental Protection Agency (EPA) decisions on those applications, and certain state water quality  
5 standards.

6 First, we ask that the issues be examined in context. We note that the EPA decisions and  
7 supporting materials, as well as the City's applications, are quite lengthy, and should be read in full.  
8 The EPA decisions, plus written responses to extensive City and public comments, run into hundreds of  
9 pages.

10 Second, we question whether a difference in water quality standards would have changed the  
11 decisions by the EPA denying the City's applications.



1 The City plants would still have exceeded the chlordane standard even if the typographical error  
 2 had been corrected, although not as often. Furthermore, if the DOH updated the water quality standard  
 3 to be comparable to the EPA 2006 criteria for chlordane, the discharges from these two plants would  
 4 still have exceeded the state standard, though less often. The following table summarizes our  
 5 understanding of the chlordane situation.

	Chlordane	Exceeded at Honouliuli**	Exceeded at Sand Island***
Current DOH WQS*	0.000016 ug/l	5 of 6	118 of 118 mos.
Current DOH WQS, Correctly typed *	0.00016 ug/l	3 of 6	95 of 118 mos.
2006 EPA guidance	0.00081 ug/l	0 of 6	0 of 118 mos.
Projected DOH WQS = 2006 EPA ÷ 3.1*	0.000261 ug/l	1 of 6	Unclear (log graph on p. 51)

6 \* For current DOH WQS, EPA standards were adjusted by a factor of about 3.1 to account for higher  
 7 fish consumption in Hawaii. The same factor presumably would be applied to future standards.  
 8 \*\* Honouliuli Final Decision, pp. 60-62, 62-64, 66. Assumes retroactive use 2006 standards.  
 9 \*\*\* Sand Island Final Decision, pp. 48-50, 51-53, 54. Assumes retroactive use 2006 standards.  
 10

11 The City plants would still have exceeded the dieldrin standard even if DOH standard was  
 12 modified to follow 2006 EPA criteria; the 2006 EPA standard as likely to be applied is actually  
 13 numerically lower (stricter) than current DOH standard. The following table summarizes our  
 14 understanding of the chlordane situation.

	Dieldrin	Exceeded at Honouliuli**	Exceeded at Sand Island***
Current DOH WQS*	0.000025	5 of 6	118 of 118
2006 EPA guidance	0.000054	2 of 6	108-109 of 118
Projected DOH WQS = 2006 EPA ÷ 3.1*	0.0000174	6 of 6	118 of 118

15 \* For current DOH WQS, EPA standards were adjusted by a factor of about 3.1 to account for higher  
 16 fish consumption in Hawaii. The same factor presumably would be applied to future standards.  
 17 \*\* Honouliuli Final Decision, pp. 60-62, 64-66. Assumes retroactive use 2006 standards.  
 18 \*\*\* Sand Island Final Decision, pp. 48-50, 52-54. Assumes retroactive use 2006 standards.  
 19

1 The bacteria standards used to evaluate Honouliuli's discharges in waters away from the coast  
2 were based on EPA standards adopted in 2004, not DOH standards. EPA found that the Sand Island  
3 plant met bacteria standards when effluent was disinfected.

4 The EPA found both plants exceeding water quality standards for ammonia nitrogen and whole  
5 effluent toxicity.

6 The Star-Bulletin on January 19, 2009, reported an EPA representative as saying a change in the  
7 water quality standards would not have altered EPA's decision.

8  
9 The DOH did not and is not taking a position on the merits of the applications or decisions, and  
10 we simply ask for a fair review of the matter.

11  
12 Third, we agree that the Department of Health (DOH) water quality standards (WQS) should be  
13 updated and have been proceeding with revisions in a manner that complies with state and federal legal  
14 requirements. Our first set of revisions addresses the coastal waters bacteria standards (not off-shore  
15 waters where the EPA standard now applies) and the chlordane typographical error. The second set of  
16 revisions addresses all DOH toxic pollutant standards in light of the 2006 EPA criteria. In changing our  
17 water quality standards, which are formal rules, DOH must comply with the state administrative  
18 procedures law, Chapter 91, Hawaii Revised Statutes (HRS), including a public review process; small  
19 business regulatory review; and EPA statutes and regulations, 33 U.S.C. sec. 1251 et seq., 40 C.F.R.  
20 Parts 130 and 131, which include EPA review. 40 CFR sec. 131.20 has procedures for States to follow  
21 in updating Water Quality Standards, including public hearings. Various substantive requirements are  
22 listed in 40 CFR Parts 130 and 131. The technical nature of these rules also require due diligence in  
23 drafting.

24

1

2           Fourth, if the Legislature thinks that changes needs to be made faster than can be done through  
3 the state rule-making process, then it may want to examine whether it can change water quality  
4 standards by statute. Any changes will still have to meet federal requirements mentioned above. If the  
5 legislature takes this path, DOH would want the statute to allow DOH to amend the standards in the  
6 future through normal rule-making, in case later scientific developments show a need for further change.

7

8           Thank you for the opportunity to testify.

# Highlights of this Presentation

- Historical perspective of the Water Quality Program for Oahu (WQPO, 1972)
  - Scientific concepts and parameters for the water quality program for Oahu 1970.
  - The environmental context from the 1960s and 1970s.
- The conflict between WQPO and EPA.
- What it means to the environment locally.

## Personal experience with issues on the time.

- Developing the WQPO, as team member, Sunn Low Tom & Hara, Inc, along with members from Engineering Science, Inc., and Dillingham Corp. 1970-1973
- Lobbying for 301h waiver as President of HWPCA. Muskie committee, Congress, 1974.
- Implementing federal environmental programs, as Deputy Director, Environmental Programs, Department of Health, 1975-1980.

# 1970 as the frame of reference

- Statehood 1959
- Economic and construction boom 1960s.
- By late 1960s on Oahu, there were:
  - 36 individual sewage treatment plants discharging in inland streams and nearshore waters and
  - 54 mgd raw sewage discharge off Sand Island.
- Concern was on environmental impact of future growth.
- Federal and state legislation on the environment.

## Prior to 1970, design followed mainland standards.

- Design of sewage treatment and disposal systems followed the then “10 States Standards.” (The mainland states in the upper Mississippi River tributary).
- All were secondary treatment plants.
- Even with treatment, problems and concerns surfaced, for example, Kaneohe Bay.
- There was more going on in water quality than met the eye.

# Legislative initiatives in the 1970s

- There was a national debate on the issues of the environment vs the economy and what it will take to protect the environment.
- The outcome was the flood of legislation on the environment at the federal and state level in the 1970s.
- It had successes in controlling pollution but they were ineffective in many ways.
- Some 20 years later in 1990, EPA's Science Advisory Board (SAB) referred to Federal legislation and programs as being fragmented and ineffective for the future.
- SAB emphasized that the environment is an "integrated whole" and required an integrated approach.



# Shifting paradigms in the 1960s and 70s.

- There was a lone voice in the wilderness advocating saving the planet.
- It turned out that he was not alone.
- Barry Commoner (1971) stated in simple terms his ideas on the environment as the laws of ecology.
  - Everything is interconnected.
  - There is no such thing as a free lunch.
  - Everything must go somewhere.
  - Nature knows best.
- In so many ways, this is the basis for the WQPO.

# The “Blue Ribbon Committee”

- The City and County of Honolulu put together a committee in 1969, who recommended the development of the WQPO to address the concerns of the future.
- Members of the committee included:
  - John Parkhurst, Manager and Chief Engineer Los Angeles County Sanitation Districts
  - Dr. Richard K. C. Lee, Executive Director of Research Corp, UH
  - Dr. Erman Pearson, Professor of Sanitary Engineering, University of California, Berkeley.
  - Dr. John Shupe, Dean, College of Engineering, UH.
  - Dr. Robert Hiatt, Counselor for Scientific Affairs, U. S. Embassy, Tokyo
  - Mr. Francis Aona, Chief, Division of Sewers, CCH

# The Guiding Principles for the Water Quality Program for Oahu

- Consider the environment holistically including all emissions from point and nonpoint sources.
- Discharge wastewater where it does the least harm to the environment or where it might do some good, as in water reclamation.
- Avoid intrusion in the sensitive and critical ecosystems
- Look to nature for sustainable operation.
- Apply appropriate technology.
- Develop and implement the most cost-effective engineering alternative.

# Water quality management strategy recommended by WQPO (Feb '72)

- **Eliminate all discharges from inland and nearshore waters of Oahu:**
  - Divert discharges to the deep ocean regime.
    - away from sensitive ecosystems,
    - away from recreational waters,
    - away from direct public contact.
- **Build Regional systems with appropriate treatment technology for ocean outfall disposal:**
  - Sand Island
  - Honouliuli
  - Kailua Kaneohe
  - Waianae
- **Reclaim water for reuse with appropriate treatment technology.**
  - Agricultural/landscape irrigation (sugar cane)
  - Honouliuli regional system

# In the meantime, Congress passed the Federal Water Pollution Act Amendments of 1972

- At that time, it was heralded as one of the most comprehensive and complex legislation to come out of Congress.
- President Nixon vetoed the bill saying it was inflationary.
- Congress over-rode the veto by a substantial margin.
- That was a reflection of the mood of the country toward pollution control.

## The Federal Act of 1972 embodied three major policies.

- **Finality.** It called for an all out, do or die, effort to combat water pollution.
- **Enforceability.** It called for compliance with effluent limits and it was illegal to discharge without a permit.
- **Uniformity.** It called for uniform application of technology, i. e. secondary treatment, for publically owned facilities, across the country.

## It was contrary to WQPO recommendation.

- The requirement for uniform application of technology for secondary treatment was contrary to recommendation.
- It was based on policy, not science.
- It will not enhance water quality but increase the cost of disposal.
- Instead, it was likely to cause more harm than good to the environment.

## The City and professional organizations objected and lobbied Congress to change the law.

- Senator Muskie held hearings for amendment in Honolulu, March, 1974.
- Congress responded favorably and enacted section 301(h) into law in 1977.
- The objective was to allow implementation of the strategy developed and recommended for Oahu.



# More about secondary treatment technology...

- It tries to copy nature.
- It is not perfect.
- It is fundamentally a function of space, time, and energy.
- It attempts to accelerate the rate of biochemical reactions:
  - by addition of energy,
  - the smaller the space of reaction vessels, the greater the energy input required.
- It incurs added expense and consumption of resources.
- It produces other pollutants internally and externally in the production of energy (green house gases).
- Secondary treatment is not the answer.

# Conclusion: What it means to deny the 301h waiver.

- The current EPA decision to deny the 301h waiver will do more harm than good.
  - It will force the construction and operation of secondary treatment facilities.
  - It will do nothing to enhance water quality in our receiving waters.
  - It will exert a significant energy demand with corresponding production of greenhouse gases, carbon dioxide in particular, in the treatment processes and in the power generating facilities that are on fossil fuel.
- Essentially, denial will force the City and County of Honolulu to spend \$1 billion dollars or so to build a greenhouse gas manufacturing plant contrary to national directives on controlling greenhouse gas emissions.
- EPA's decision for denial is totally unacceptable.

January 26, 2009

Testimony by Hans Krock regarding the recent EPA ruling on the City and County of Honolulu request for waivers of the secondary treatment requirement for the Sand Island and Honouliuli treatment plants.

My name is Hans Krock - I am an Emeritus Professor of Ocean and Resources Engineering at UH Manoa. (However, UH Manoa is not responsible for anything I write or say.) I am a part of a voluntary (unpaid) scientific and professional advisory group to the C & C of Honolulu regarding the validity of the request of waivers and the response by EPA.

Relevant aspects of my background are:

- A Ph.D. in Environmental Engineering with minors in Chemistry and Chemical Engineering from University of California, Berkeley. I developed very sensitive bioassay techniques to measure both toxicity and biostimulation in the natural environment.
- Research on primary, secondary, and tertiary treatment processes including sludge treatment and the effect of salinity.
- Extensive measurements in Hawaiian waters of water quality parameters and the effects of both primary and secondary discharges.
- Extensive measurements and evaluation of mixing and transport in embayments and open coastal waters, including Eulerian and Lagrangian plume dynamics.
- The establishment of kinetic constants describing the phytoplankton growth rate

response to the addition of nutrients to real world tropical Pacific waters.

- Measurement and evaluation of the internal wave field in Hawaiian waters and its effect on horizontal currents and on density profile dynamics.
- Measurements of water quality parameters above and below the thermocline in Hawaiian waters.
- Measurement and evaluation of gas exchange dynamics into and out of seawater with emphasis on carbon dioxide including its effect on pH and on biological processes.
- The establishment of most of the water quality standards for Hawaii, especially those described by log-normal distributions.
- Extensive research and development leading to the establishment of Ocean Thermal Energy Conversion (OTEC) system. These technologies are applicable to the installation of relatively inexpensive extensions to the Honouliuli and Sand Island outfalls.

For today's hearing I have been asked to comment specifically on the EPA findings regarding the nutrient ammonia and the toxicants dieldrin and chlordane.

The EPA found that the State of Hawaii geometric mean ammonia standard was exceeded only adjacent to the diffusers. This finding is not relevant to support a decision to require secondary treatment because of the following factors:

- The water quality standards (including those for ammonia) are written for the upper layer of the ocean above the influence of the waters in and below the thermocline. The internal wave structure frequently brings these deep waters above the depth of the diffuser and significantly changes water quality parameters (including nutrient concentrations). If the State of Hawaii wants to regulate the water quality below the thermocline they will have to expand the water quality standards.
- The statistical form of the water quality standards are properly evaluated over both time and space. The application used by EPA to evaluate the effect of nutrients at a fixed point is not correct since it does not take into account the actual growth dynamics over space. The validity of this comment is borne out by the observation that there is no increase in chlorophyll-a related to the outfalls.
- It has been conclusively shown that in the real tropical ocean the relevant nutrient parameters with respect to the growth response of phytoplankton are total nitrogen (TN) and total phosphorus (TP) and not the individual components (such as ammonia or nitrate). Consequently Hawaii should revise its water quality standards to reflect this development.
- At the depth of the diffuser light is generally limiting and not nutrient concentration hence the nutrient concentration is irrelevant.

- If secondary treatment were implemented then ammonia content of the discharge would actually increase because of the supernatant return from the anaerobic sludge processing units.
- Because of anthropogenic global warming due to the emission of greenhouse effect gases (primarily carbon dioxide) there has been a significant reduction in the primary production of the tropical Pacific. This is due to greater stratification which makes it more difficult for the nutrient rich deep water to reach the photic zone. Secondary treatment would exacerbate this problem.

Concerning dieldrin and chlordane:

These pesticides are found in the soil and ground water of Oahu and enter the ocean primarily via erosion and surface runoff. Control of these pesticides with respect to the wastewater system is best done by inflow and infiltration control. Since bacteria have had more than two decades to try to break down these pesticides in the ground without effect, a few hours of secondary treatment will be irrelevant.

The greatest protection to the environment and to potential human exposure of the Honouliuli and Sand Island discharges would be to extend the outfalls to a depth of about 600 feet to below the top of the thermocline even with the large internal wave amplitude. This solution would also be much less costly and use significantly less scarce resources.

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