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May 8, 1989
RP:0105

Mr. Chew Lun Lau
Environmental Engineer
Department of Public Works
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Lau:

Draft Water Quality Management (WQM) Plan City and County of Honolulu

This document forms the basis of a comprehensive program for the City and County of Honolulu's Water Quality Management Plan, in accordance with Section 208 of the Federal Water Pollution Control Act. The purpose of the program is to implement procedures in order to achieve national, state and county goals of preservation, restoration and maintenance of water quality.

Due to constraints of resources and competing responsibilities, we will comment only on Chapters 1, 14, 19, and 20, which were reviewed with the assistance of Roy Takekawa, Environmental Health and Safety; Richard Bowen, Agricultural Economics; Kem Lowry, Urban and Regional Planning; Doak Cox, former director of the Environmental Center; and C. Anna Ulaszewski, Environmental Center. Our reviewers also looked at Chapters 2, 3, 9, 15, and 18, and, except for minor errors of grammar or syntax, these sections seemed reasonably comprehensive, albeit occasionally redundant.

Chapter 1: What is the 208 Plan and Why it was Developed

While the intent of this chapter is to define the 208 Plan clearly, it actually fails to do so. The chapter defines the purpose, goals, scope and characteristics of the Plan; however, the closest it comes to defining a 208 Plan is this statement on page 1-2: "The specific requirements for the development and contents of these plans are contained in Section 208 of the Act, which is why they are called '208' plans."

Chapter 14: Residual Waste Disposal

General

There seems to be no recognition of the fact that, in general, fluids injected underground in Hawaii will eventually reach either surface or coastal waters. The dissolved substances in injected wastewater will have the same effects on marine biota as dissolved substances in wastewater discharged at the shoreline or offshore.

Background (page 14-1)

In principle, it is clearly the intent that injection into an actual or potential underground source of drinking water (USDW) should be prohibited. However, there are several problems with the discrimination between those zones in which injection is permitted and those in which it is prohibited.

1. The zones in which injection is permitted are referred to as "exempt", meaning that they are exempt from prohibitions against injection. However, the zones in which injection is prohibited are referred to as USDW's, the prohibition is not explicitly stated, and hence what the "exempt zones are exempted from is not explicitly stated.
2. In paragraph 5, page 14-3, there are several inconsistencies in the treatment of "zones" as singular or plural. For example, the intended antecedent of the pronoun "it" [singular] in sentences 3 and 4 may be "an exempt zone". However, sentence 2 relates to "exempted portions [plural] of the aquifer" [singular]; and sentence 1 relates to "USDW" and exempted aquifers [plural].

If the "it" refers to an exempt zone or complex of "exempt" zones, the two sentences together indicate that the entire geologic column seaward of the UIC line is exempt. However, it seems that this is valid wherever the UIC is appropriately drawn, and the restriction of validity to a volcanic aquifer implied by sentence 4 is not pertinent.

3. By implication, three dimensional descriptions may be necessary in delineating appropriate boundaries between USDW's and "exempt" zones. However, paragraph 3, page 14-3, refers to "the UIC line" as separating USDW from exempted aquifers. A line on a map may represent a vertical boundary on the surface but not a horizontal or sloping boundary below surface.
4. Although three dimensional aspects of the control of underground injection are implicit, and national Class I injection wells are defined (page 14-4) as those injecting "below the lowest formation of an USDW", there is no recognition of possible lower boundaries to USDW. Under certain circumstances it might be appropriate to permit injection of certain fluids below a Herzberg lens, even one which constitutes an

USDW. Perhaps the proposed amendments will address this issue in defining additional subclasses of wells.

Classification and Registration of Injection Wells (page 14-4)

What constitutes a pollutant in an injected water depends on where the injection is to be made. Air conditioning return flow is a non-polluting fluid (under the definition of Subclass B well) only if the water is returned to the same aquifer from which it was drawn (or to one whose water has a similar quality). The qualities of aquaculture wastewater and surface drainage water are such that they rarely can be considered non-polluting, although the definition of Subclass B wells would include wells which inject such water.

State Solid and Hazardous Waste Disposal (page 14-15)

Control Policies and Priority Considerations

The interim State policy regarding to hazardous waste disposal requires hazardous waste to be shipped to out-of-state, EPA-permitted disposal facilities. However, this document does not propose alternative disposal methods, such as incineration or ocean disposal/storage, in the event the waste cannot be shipped.

Chapter 19: Financial and Economic Impacts

We would like to make one major recommendation, which relates to the two sections titled "Economic Impact Assessment" (pages 19-7 and 19-23). The economic impacts discussed are short-term in nature. Long-term impacts need to be considered and addressed. We suggest that sub-sections entitled "Long-Term Impacts" and "Short-Term Impacts" be created under Section A.3 and a reference to long-term impacts should be made in Section B.2; however, the discussion need not be repeated.

Assessment of long-term impacts may necessitate a qualitative approach, since such impacts often are difficult to quantify. For example, in the short-term, water pollution control projects may require large outlays of capital; however, such expenditures should be offset by long-term economic gains. Hawaii's economic base industries are sensitive to environmental changes, and capital outlays which prevent degradation of State waters will have a favorable long-term impact on the State's economy.

There is a minor problem with the Summary on page 19-10, paragraph 4. According to this paragraph, "one direct construction job could be generated for each \$83,000 worth of construction in place." It is unclear whether the "one direct job" is included in the 2.5 jobs "created for each new construction job". Our reviewers have suggested that a total of 2.5 jobs will be generated; a better way of expressing this is: "for each new construction job directly created, 1.5 additional jobs will be created elsewhere in the economy."

It is important to determine how many of these new jobs will be filled by persons presently employed in other industries. A shift in employment may seriously affect those industries' staffing capabilities.

Also, Sections A.2 and B.1 (pages 19-2 & 11), Financial Impact Assessment, would be better described by changing the title to Fiscal Impact Assessment, since fiscal relates to public monies, which are the topic of these sections.

Chapter 20: Social Impact Assessment

[Only two sections were reviewed: Statewide Assessment, 208 Impact: Housing Condition (Section A.5), and City and County of Honolulu Assessment, 208 Impacts: Housing Conditions (Section B.5).]

Our reviewers find the following sections ambiguous and conflicting:

Section A.5

According to page 20-13, paragraph 2), "In general, maintaining the water quality standards will probably lead to scattered and localized increases in housing and development costs...." "These cost have been and will be passed on to homeowners and taxpayers".

Page 20-13, paragraph 4, states: "Extensive requirement of municipal sewerage hookups [for "lower-income rural housing"] will raise the cost of housing and raise the sophistication of housing development and construction in areas. This will perhaps exaggerate the current tendency of the Hawaiian housing market to fail to meet the housing needs of lower-income groups as well as the middle-income 'gap group', although possible...."

We have concluded from these two paragraphs that maintaining water quality standards will increase housing costs and the homeowners and taxpayers will pay for the costs.

Section B.5

According to Section B.5 (page 20-17, paragraph 4), "There are no indications that the sewage program is causing higher housing costs on Oahu, since developers have always been responsible for providing sewerage facilities...."

As is, this statement invalidates the statements made in Section A.5.

In discussing the costs of maintaining water quality standards, one important point is lost. As mentioned previously, there are both long-term and short-term impacts which must be considered. While the individual homeowner pays for the development costs of their wastewater system and directly benefits from it, it is the community that benefits from it in the

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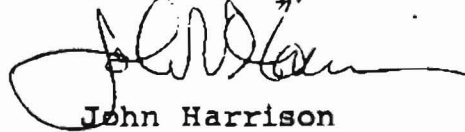
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long-term. It is appropriate that a cost/benefits analysis be included in this section.

Thank you for the opportunity to review this management plan. Our reviewers concur that it is informative document.

Yours truly,

A handwritten signature in dark ink, appearing to read 'John Harrison', written over a horizontal line.

John Harrison
Environmental Coordinator

cc: OEQC
Environmental Planning Office,
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