September 12, 2007

Aloha All Commenters,

The Hawaii State Department of Health (HIDOH) would like to thank you for your submittal of comments on the Draft 2006 STATE OF HAWAII WATER QUALITY MONITORING AND ASSESSMENT REPORT: Integrated Report To The U.S. Environmental Protection Agency and The U.S. Congress Pursuant To Sections §303(D) and §305(B), Clean Water Act (P.L. 97-117)

Your comments are an important part of the public process, which will report to the US Congress on the status our State waters in relation to specific requirements of the Clean Water Act. HIDOH has taken your comments, combined them with other comments received, prepared a response to comments document, and modified our final report accordingly. These components are then part of the public record, and contained in a final permanent file. The report and the supporting documents will be posted on our website as soon as the documents are finalized and submitted to the United States Environmental Protection Agency (USEPA).

The USEPA will then evaluate the report and approve or disapprove or partially approve our findings. We will post the USEPA's letter to our website as soon as it is available. Again we would like to thank you for your participation in evaluating this draft report.

Mahalo nui loa,

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Response to Comments – 2006 State of Hawaii Water Quality Monitoring and Assessment Report

September 12, 2007

The Department of Health received 19 comments from a broad range of interested parties. These comments were compiled in this document in the order in which our office received them. Several commenters voiced similar thoughts. These comments were consolidated into the general comments category for ease of reading.

General Comments:

Many comments were supportive of our programs and stated their full support for full funding to expand sampling efforts. Thank you for your support for more resources and funding. We welcome your enthusiasm and hope you will participate in the process to assess our waters. Grassroots efforts by volunteer groups that have the technical capacity to help us sample are greatly appreciated. Please contact our office if you would like to help in this regard. We also would appreciate your public participation in the rule making process by providing input and comments when the next round of Water Quality Standards are proposed for revision. Please keep checking our website to view the status of new projects.

Some comments challenged the underlying water quality standards (WQS) and the assessment decision criteria. Other comments challenged the total maximum daily load (TMDL) process and projects. While DOH addresses some of these comments and will bear them in mind when it approaches the next round of WQS review and as it proceeds with TMDLs, DOH is not now changing the WQS standards, assessment decision criteria, or TMDLs as part of the present actual assessment of waters.

This report is a required assessment of the States waters by applying the Water Quality Standards to data collected over the past 6 years.

The original draft was entitled “2006 Draft Integrated Report of Assessed Waters in Hawaii.” The new title is “2006 State of Hawaii Water Quality Monitoring and Assessment Report.”

Commenter 1: Jo Ginger and Steve Schroeder, Kihei, Maui, email dated Jan. 17, 2007.

Comment 1.1 *"Too many of our test sites in Maui County are shown to be in level 5 category. We need full funding to correct this water quality deterioration…full funding is requested so that we may meet our legal obligation to provide quality water to Maui's residents."*

Response: The Water Quality Monitoring and Assessment Report is used for documenting conditions of all waters, and listing those that are considered to be impaired under State standards. However, it is not a direct funding document. An important and often overlooked part of maintaining environmental health is volunteer groups, such as the one you belong to. Efforts on your part via citizen sampling efforts are very valuable, and can often fill in gaps in data that may exist when proper quality assurance is utilized. We encourage you to continue to participate in activities that protect our Hawaii.

Comment 1.2 *"It is shocking to us as residents of Maui County, that we have virtually no monitoring and reporting of our groundwater quality. There appear to be no standards developed. We support full funding to establish and develop monitoring standards and subsequent gathering and reporting of data."*

Response: In order to assure that drinking water remains safe for human consumption, the Maui Department of Water Supply, private water system owners, and the Department of Health periodically monitor groundwater sources as well as surface water sources for a number of chemical parameters, as required by Federal and State drinking water requirements. Information on the quality of groundwater sources used as drinking water are available annually (revised in July 1 each year) through your public water system. Contact your public water system to request a copy of the "Water Quality Report" or "Consumer Confidence Report" for your water system. This report is required annually and must be provided to consumers.

While there are no standards developed specifically for groundwater quality, Hawaii utilizes drinking water standards when testing groundwater for drinking water purposes. Standards (guidelines) for groundwater quality also exist through various environmental protection programs (UST/LUST, State Superfund, Pesticides, etc), which must evaluate the quality of groundwater when determining remediation of potential contaminating activities. These standards and guidelines, along with other information on new and emerging contaminants and identification of potential sources of contamination will provide the basis for the Groundwater Protection Program to develop and implement a comprehensive groundwater quality monitoring plan and program to assess the quality of groundwater resources in the State. Such a monitoring program will be very costly and consequently may not be fully funded. However, we appreciate your support to fully fund such a program.

Comment 1.3 *"We need to develop more monitoring strategies and data management and make the data available to the public in a timely fashion and accessible via internet."*

Response: DOH concurs with your comment, as these items are a high priority for us to implement.

Commenter 2: Patricia Covici, Kihei, Maui, email dated Jan. 17, 2007

Comment 2.1 *"There are days when I have been appalled by the sludge, fecal matter and oil slicks I have seen."*

Response: An important and often overlooked part of maintaining environmental health is volunteer groups, such as the one you belong to. Efforts on your part are very valuable, and can often fill in gaps in data that may exist when proper quality assurance is utilized. We encourage you to continue to participate in activities that protect our Hawai'i. We rely heavily on individuals to be the eyes and ears of our department. Problem areas or offenders may go unnoticed by us unless the public alerts us to these situations. We all play a role in keeping our islands clean and beautiful.

Comment 2.2 *"Many boats still dump their waste into the waters. There is no current law that prohibits this. Three miles in not enough as the currents bring the sludge into the beached of Kihei and Wailea."*

Response: Although most people are conscientious and law-abiding, there exists segments of the population that are not. Efforts are constantly being made to catch these problems, but it is often an uphill battle.

Comment 2.3 *"Page 26 of the integrated report of assessed waters under clean water act 303{d} and 305{b} that has a table of results for Maui waters states that no microbial testing was done. I strongly suggest that testing be started on a regular basis if this is in fact the case."*

Response: Microbiological testing has been, and is performed across Maui at various locations several times a week. The statement that you referred to only applies to the 6 waters that are mentioned in the table that have other conventional pollutant data available.

Commenter 3: Vicki Schulte, Haiku, Maui, email data Jan. 17, 2007

Comment 3.1 *"I am concerned about storm runoff into the ocean, most particularly silt runoff as well as agricultural chemicals. I would like to see those chronically affected areas identified and assessed after wet weather events. I want to see pollution prevention and controls in place and support full funding for these activities."*

Response: We share your concern about storm runoff, and much effort is aimed at catching these problem areas as they are found and in finding ways to prevent them. Best Management Practices (BMPs) are stressed for applicable projects, and are required for permitted projects. A large source of assistance actually originates from the general public, in the form of individuals alerting DOH of problem areas. This type of assistance is greatly appreciated and the public is encouraged to continue these grass roots efforts. Sampling (coastal) is done year-round, several times a week, including wet-weather.

Comment 3.2 *"I support full funding for complete monitoring, data collection, data reporting and subsequent corrective action to ensure clean water quality for Maui's residents and future."*

Response: The Water Quality Monitoring and Assessment Report documents the condition of all State waters, and lists those that are impaired under State standards. This information can be used to support funding requests for monitoring, assessment and corrective action. It is not however, a direct source of funding. The sampling of the waters of Maui as well as the other islands does have to be prioritized based on available resources.

Comment 3.3 *"There are no water quality standards for our groundwater. This is the source of our drinking water. I am outraged by this. Your report states that 81% of our aquifers are highly vulnerable to contamination. We need standards to protect the quality of the water and monitoring to determine if the standards are being met. I request full funding to achieve these goals."*

Response: While there are no standards developed specifically for groundwater quality, Hawaii applies drinking water standards when testing groundwater and surface water sources for drinking water purposes. These standards must be met for all new and existing water sources.

Standards (guidelines) for groundwater quality also exist through various environmental protection programs (UST/LUST, State Superfund, Pesticides, etc.) which must evaluate the quality of groundwater when determining remediation of potential contaminating activities.

The statement in the report that 81% of our aquifers are highly vulnerable to contamination is based on solely on the criteria defined in the "Aquifer Identification and Classification for Kauai, Oahu, Maui, Molokai, Lanai, and Hawaii: Groundwater Protection Strategy for Hawaii", by John Mink and L. Stephen Lau. The criteria used to define "vulnerability to contamination" is whether the aquifer is "confined or unconfined" and based on the authors familiarity with environmental conditions. Vulnerability as defined here does not take into account location of potential contaminants, depth to the groundwater, or other environmental and contaminant factors.

In order to assure that drinking water continues to be safe, groundwater sources of drinking water are periodically tested for a number of chemical parameters by the Maui Department of Water Supply, private public water system owners, and the Department of Health, as required by Federal and State drinking water requirements. Information on the quality of groundwater used as drinking water sources, that provide water to the water systems that serves your area, are available annually (every July 1) through your public water system. Contact your public water system to request a copy of the "Water Quality Report" for your water system. This report is required annually and must be provided to consumers.

In addition, the Groundwater Protection Program is developing a comprehensive groundwater quality monitoring plan and program to assess the quality of groundwater resources in the State. Please keep in mind that such a monitoring program may be very costly and may not be fully funded. However, we appreciate your support to fully fund such a program.

Comment 3.4 "*We wish there was a laboratory on Maui that we could take water samples for bacteriological testing and reporting."*

Response: There is a State Laboratory on Maui, however samples are limited to State agencies. There may be private labs available, however charges may apply. Please see Response 12.4 for information about private laboratories.

Commenter 4: Maury King, Kihei, Maui, email dated Jan. 17, 2007

Comment 4.1 *"I support formal confirmation of designated uses for water"*

Response: Formal confirmation of the attainment of designated uses for water is inhibited by the lack of explicit relationships between water quality criteria attainment and designated use attainment in the State Water Quality Standards and existing state policy. In response to a similar comment from EPA (comment 9.3), we added a logical framework for making waterbody attainment decisions (for both water quality criteria and designated uses) for the 2006 water quality monitoring and assessment reporting cycle to the final report (p. 28).

Future amendment of the State Water Quality Standards, as well as future revision of water quality monitoring and assessment methodologies and decision criteria, could provide clearer explanation of the relationships between water quality criteria attainment and designated use attainment. Water Quality Standards are reviewed and revised every three years, while water quality monitoring and assessment methodologies and decision criteria are reviewed and revised every two years. Please contact our office to be directly notified about the schedule for review and revision processes. Please also see responses to comments 9.3, 11.3, 15.16, and 19.2**.**

Comment 4.2 *"I request that we increase monitoring of all beaches, marine waters and offshore waters and that we fully fund this monitoring so that it will be complete for all areas of Maui County."*

Response: The numbers of samples for coastal monitoring have been increasing for the past several years, and it is our hope that this trend will continue. Offshore sampling will hopefully resume this calendar year. Please continue your efforts in participating in environmental groups. It is an invaluable source of assistance that aids in protecting Hawaii's waters.

Commenter 5: Brooke Porter, Lahaina, Maui, email dated Jan. 17, 2007

Comment 5.1 *"Please realize that there needs to be a better system in place for water quality testing, specifically bacteriological, to protect ocean users and ensure the health of the ocean around Maui.*

Enterococcus is a serious concern for me as I am a frequent ocean user. Most of the coastal areas where I surf are not shown as tested areas for this bacteria. Additionally, I have been involved in the Blue Water Task Force projects wherein we test for this specific bacteria. Results have shown that many times we are surfing in severely contaminated waters."

Response: The microbiological testing has a set of permanent, or core, sampling sites, and a rotating set that changes every six months. Both sets vary in location, but in general cover the island coastline. It may be possible that there are sampling stations in the areas that you surf (see list of sampling areas on pages 24-27 of the report), however it may not have met the minimum number, or date requirements of this report. Efforts are being made to increase the coverage of sampling, and numbers of samples have increased each of the past several years. Please continue your efforts in participating in environmental groups. It is an invaluable source of assistance that aids in protecting Hawaii's waters.

Commenter 6: Alicia Mallo, Lahaina, Maui, email dated Jan. 17, 2007

Comment 6.1 *"I am deeply concerned about the state of offshore reefs. The lack of monitoring in these areas concerns me. I feel there need to be funds allocated to test waters offshore including the entire marine sanctuary. These offshore areas within the 100 fathom mark off of Maui are highly protected but there is no testing to ensure that we are meeting the highest standards as set for these waters"*

Response: It is hoped that offshore monitoring will resume on a regular basis this calendar year.

Comment 6.2 *"Agricultural runoff in the near coastal zones is also of high priority to me. I request full funding for monitoring in areas of known nearby agricultural zones and full data collection and reporting."*

Response: Runoff continues to be a major concern for DOH, and much effort is put into minimizing this type of pollution and in finding ways to prevent them. Best Management Practices (BMPs) are stressed for applicable projects, and are required for permitted projects. A large source of assistance in preventing runoff actually originates from the general public, in the form of individuals alerting DOH of problem areas. This type of assistance is greatly appreciated and the public is encouraged to continue these grass roots efforts.

Comment 6.3 *"In reference to the Maui Stream Waters table, it seems that most of the areas still have insufficient data for us to ensure Maui's residents of clean water. I support full funding for monitoring, data collection and reporting along with full corrective actions as needed to ensure our future clean water supply."*

Response: The 303(d)/305(b) report documents the condition of all State waters, and lists those that are impaired under State standards. It is not however, a direct source of funding. The waters of Maui as well as the other islands do have to be prioritized based on available resources.

Comment 6.4 *"Your report indicated that there is insufficient data to make a proper assessment of the Honokohau streams which is the water I drink. Coming from an urban and agricultural area of California where I could drink tap water that was clean, pure and tasted good, it was appalling to me after moving to Maui, a tropical paradise, to find that my water for drinking was contaminated, and yet it is supplied by the COUNTY OF MAUI. I itch after every shower!"*

Response: The Honokohau streams are currently not being used as drinking water sources by the County of Maui Department of Water Supply. Drinking water for the Honokohau provided by County's public water system is currently supplied by wells in Kapalua and must meet Federal and State drinking water standards.

Information regarding the quality of water being supplied to you by your public water system may be obtained by contacting your public water supplier and request a "Water Quality Report". This report is required annually and must be provided to consumers.

Commenter 7: Lucienne de Naie, Haiku, Maui, email dated Jan. 17, 2007

Comment 7.1 *"I am concerned about impacts to the quality of many of our marine waters due to runoffs of nitrates and other contaminants from non point source pollution, especially along the West Maui and South Maui coastlines. I hope that this report will result in increased funding so that these sites can be regularly monitored and neighboring*

landowners can be brought into compliance, so as not to continue to discharge these pollutants"

Response: Runoff and its contents (such as nitrates, etc.) continue to be a major concern for DOH, and much effort is put into minimizing this type of pollution. Best Management Practices (BMPs) are stressed for applicable projects, and are required for permitted projects. A large source of assistance in preventing runoff actually originates from the general public, in the form of individuals alerting DOH of problem areas. This type of assistance is greatly appreciated and the public is encouraged to continue these grass roots efforts.

The Water Quality Monitoring and Assessment Report documents the condition of all State waters, and lists those that are impaired under State standards. This information can be used to support funding requests for monitoring, assessment and corrective action. However, changes in the extent of water quality impairments and monitoring and assessment needs from one reporting cycle to the next do not guarantee similar changes in funding.

Comment 7.2 *"I am concerned about 7 houses that have been recently constructed immediately North of Puu olai in Maui which are dependent upon septic tanks systems for their sewage needs. This area has some of the most friable soils on the whole Island of Maui and the houses overlook an ancient fishpond and wetlands which could be impacted by their leach fields. The wetlands area has a green growth on it since the houses have been constructed. There should be monitoring done at this site to make sure that nutrients are not entering the groundwater table and impacting the wetland processes. I noted in your above listed report that waters just off this area adjacent to Puu ola'i (Oneuli Beach) already have some impairment problems listed."*

Response: Thank you for notifying us about this particular area. Public assistance is an invaluable asset in maintaining Hawaii's environmental health. Your information will be sent to the Clean Water Branch representative on Maui for investigation.

Comment 7.3 *"I hear constant citizen complaints about water quality at Baldwin beach park just outside Paia in Maui. Surfers and swimmers are subject to staph infections and the area where Kailua gulch meets the sea has flooded with muddy waters several times in 2006 closing the whole beach park. This area should be given more of a priority in terms of efforts to create natural riparian restoration in Kailua gulch that can help minimize the floods and allow storm waters to be absorbed and filtered mauka of the coastal dunes. This is a very popular area with visitors and residents that needs to have the healthiest possible conditions."*

Response: Thank you for your concern. We will pass this information on to our Polluted Runoff Control program. They may be able to find a group interested in working on a natural riparian restoration project.

Comment 7.4 *"I support statewide groundwater quality standards being put in place to protect not only our drinking water, but also aquatic life in our streams and oceans. Groundwater interacts at all levels of our water supply. As a user of well water from the Honopou aquifer, I would be willing to submit water samples to be used as part of the State data collection and testing program if one were established.*

Response: In order to assure that drinking water quality remains safe, all groundwater sources of drinking water are periodically monitored for a number of chemical parameters by the Maui Department of Water, private water system owners, and the Department of Health, as required by Federal and State drinking water requirements.

Information on the quality of groundwater used as drinking water sources, that provide water to the water systems that serves your area, are available annually (every July 1) through your public water system. Contact your public water system to request a copy of the "Water Quality Report" for your water system. This report is required annually and must be provided to consumers.

While there are no standards developed specifically for groundwater quality, Hawaii utilizes applies drinking water standards when testing groundwater and surface water sources for drinking water purposes. As you might expect these standards are set to make water safe for human consumption. New sources of water are not allowed to serve public water systems without demonstrating that they serve water meeting safe drinking water standards or are required to use effective treatment technology prior to their approval.

Standards (guidelines) for groundwater quality also exist through various environmental protection programs (UST/LUST, State Superfund, Pesticides, etc.) which must evaluate the quality of groundwater when determining remediation of potential contaminating activities. These standards and guidelines, along with other information on new and emerging contaminants and identification of potential sources of contamination will provide the basis for the Groundwater Protection Program to develop and implement a comprehensive groundwater quality monitoring plan and program to assess the quality of groundwater resources in the State. Please keep in mind that such a monitoring program may be costly and may not be fully funded.

Also, thank you for your offer to submit water samples as a user of well water from the Honopou aquifer. The State must follow EPA-approved quality assurance (QA) and quality control (QC) procedures that are based on scientific protocols for sampling and testing drinking water to assure that the test results meet EPA standards. Since funding does not allow us to collect samples from every water well, groundwater monitoring program criteria regarding locations for collecting samples, testing parameters, and other factors will be evaluated in the selection of wells that will actually be sampled. If your well meets these criteria, we could welcome your participation in an appropriate groundwater monitoring program. If there are direct connection between the Honopou aquifer and downgradient surface waters, it may be useful to test your will within the

context of a surface water monitoring program that seeks to identify and quantify groundwater sources of pollutants.

Comment 7.5 *"There is a great need for the State and County to partner and commission testing of groundwater for multiple contaminants in the Central Maui aquifers (Waikapu, Kahului, Paia, Kamaole) since all of these are being proposed for municipal water sources in the future."*

Response: The State Department of Health (DOH) works with Maui County Water Supply Department to monitor, test, and treat all public drinking water sources to ensure that drinking water meets the EPA and the State's drinking water standards.

Additionally, there are several mechanisms in place to review proposed future water sources. First, through the Department of Land and Natural Resources - Commission on Water Resources Management (CWRM) proposed new wells must undergo an application and review process. Secondly, the Department of Health - Safe Drinking Water Branch requires that all new drinking water sources serving public water systems must undergo a review and approval process (including preliminary water quality testing) prior to allowing the water to be used for drinking/human consumption.

Finally, through its Source Water Assessment and Protection and the Groundwater Protection Program, the DOH conducts source water assessments and is developing a comprehensive groundwater quality monitoring plan and program to assess and protection the quality of groundwater resources in the State.

Commenter 8: Michael Howden, Member, Maui County Board of Water Supply, email dated Jan. 17, 2007

Comment 8.1 *"…I can see that there are numerous injection wells either on or close to the ocean. All these injection wells need to be monitored for potential pollution both of our near shore waters and also of our connected aquifers."*

Response: DOH is looking at new ocean monitoring sites selected near injection wells and at better coordination with the monitoring of onsite disposal systems and their interaction with surface waters.

Comment 8.2 *"So much water is taken illegally and without adequate compensation to the public interest from throughout the East Maui Watershed, to the detriment of the natural ecologies of these streams, as well as to cultural uses such as taro growing. What is left in these streams cannot support taro cultivation and is indeed a health concern as inadequate stream flow supports disease mechanisms such as leptosporosis and giardia. All these water resources need to be monitored to insure adequate instream flows. This is imperative especially with Na Wai Eha, where large corporate owners have not cooperated in supporting the public interest."*

Response: Insuring adequate quantities of water for supporting natural ecologies, taro cultivation and protecting humans from water-related diseases is primarily the responsibility of the State of Hawaii Commission on Water Resource Management (CWRM). The Department of Health has a strong interest in water quantities. Instream flows for many streams in East Maui and Na Wai Eha (DOH) are currently the focus of various CWRM administrative proceedings. One East Maui waterbody (Ohia Stream) and Na Wai Eha are currently listed as impaired waters by the DOH. Although none of the listed impairments are explicitly connected with non-attainment of existing cultural uses, related designated uses (including protection of native breeding stock, recreation, aesthetic enjoyment, domestic water supplies, and agricultural water supply), or with protection from disease mechanisms such as leptospirosis and giardia, various water quality criteria (including temperature, conductivity, salinity, dissolved oxygen, pH, turbidity, TSS, nitrogen, phosphorous, enterococci, and toxicity) are implicitly connected with these use attainments and health protections. One of Na Wai Eha, Iao stream, is listed as a medium priority for the development of turbidity and trash TMDLs. While there are no current plans to monitor or assess any of these streams for the attainment of existing cultural uses, related designated uses, and public health risk from specific disease mechanisms such as leptospirosis and giardia, the TMDL process and other DOH water pollution control and water quality management programs can provide mechanisms for planning and conducting these kinds of monitoring and assessment activities.

Comment 8.3 *"Groundwater is the most important resource for the community at large; it is also the most neglected and subject to continuous pollution/impairment, especially from the large agricultural corporations such as HC&S and MLP. Known carcinogenic chemicals are freely used directly over our connected aquifers, to the detriment of the public at large. All wells, whether public or privately owned, need to be accurately monitored both for pollutants and to gauge sustainable withdrawal."*

Response: To ensure that water continues to be safe for human consumption, groundwater sources of drinking water (for public water systems) are periodically monitored for a number of parameters by the Maui Department of Water Supply, private public water suppliers, and the Department of Health, as required by Federal and State drinking water requirements. Individual wells owners are responsible for water quality testing of their wells.

Since it is not possible to sample all wells for all possible pollutants, the DOH-SDWB will use drinking water standards and groundwater remediation guidelines, along with information on new and emerging contaminants, identification of potential sources of contamination, and other factors to provide the basis for prioritizing monitoring efforts as we development and implementation of a comprehensive groundwater quality monitoring plan and program to assess the quality of groundwater resources in the State. Please keep in mind that such a comprehensive monitoring program may be very costly and may not be fully funded. Therefore the DOH-SDWB must have a mechanism in place to prioritize its non-regulatory monitoring activities.

The State Department of Natural Resources (DLNR) - Commission on Water Resources Management (CWRM) is the agency that is responsible for managing water quantity withdrawals and monitoring groundwater table levels in aquifers to ensure sustainable withdrawal. Individual private wells are subject to certain construction and reporting requirements.

Comment 8.4 ***"****There is so much information to be gathered that is necessary for the public interest, especially for the equitable distribution and care of our water resources. The government's participation and support of such monitoring would be greatly appreciated by our island residents."*

Response: The State DOH monitors all public drinking water sources for contaminants regulated by the Safe Drinking Water Act. See response above to Comment 7.4

The State Department of Natural Resources (DLNR), Commission on Water Resource Management (CWRM), as well as county water supply departments monitor the pumping rates and freshwater levels in drinking water aquifers to monitor a sustainable withdrawal. Individual private wells are subject to certain construction and reporting requirements, but water quality testing is typically the owner's responsibility.

Commenter 9: Janet Hashimoto, Chief, Monitoring and Assessment Office, Region IX, U.S. Environmental Protection Agency, email dated Jan. 18, 2007

Comment 9.1 *"It should be consistently noted that the time frame for establishing TMDLs is 8 to 13 years for the date of the original listing. Although the TMDL activities of DOH are negotiated each year, EPA policy is to complete TMDLs within 13 years of the original listing. EPA suggests the removal of the sentence in Part 2, page 6"[T]his schedule is negotiated on a continuing basis and is influence by…," and replace with the same presented in Part 1, page 8, "[T]he time frame for establishing TMDLs should be 8 to 13 years fro the date of the original listing.".*"

Response: For the purposes of this document, the DOH prefers to emphasize federal requirements (Clean Water Act and Code of Federal Regulations) rather than EPA policy. To maintain internal consistency in the final report, we removed the three sentences presented in Chapter I, page 7, beginning with "Computation of Total Maximum Daily Loads..." and replaced them with the language presented in Chapter II, page 3, 6 and 7.

Comment 9.2 *"Also, the DOH TMDL development plans described in Part 2, page 20 need to be reviewed and updated."*

Response: The TMDL development plans were reviewed and updated, and are now described in Chapter II, page 27.

Comment 9.3 *The Assessment Decision Table in Part 4 does not appear to show a consistent logic in applying multi-category designation to all waterbodies. …EPA suggests that DOH reevaluate, provide a consistent logic for category designation, provide specific clarification and justifications for any deviation from the logic, and revise the table and pertinent text accordingly.*

Response: We added a description of the logical framework for multi-category designation to the final report (p. I-28); and reviewed the Assessment Decision Table in Chapter IV for consistency with this framework;

Logical framework for making waterbody attainment decisions (Rules of Logic):

1. Neither the State Water Quality Standards nor existing state policy explain the relationship between water quality criteria attainment and designated use attainment.
2. Attainment of one or more water quality criterion (including all narrative and numeric criterion) does not establish attainment of one or more designated uses (with exceptions, see below)
3. Non-attainment of a single water quality impairment criterion (including all narrative and numeric criterion) establishes a water quality impairment.
4. Categorization designations (waterbody attainment decisions) have the following meanings, and are applied to all waterbodies according to these Rules of Logic (1.-5.) and the 2004 Priority Ranking and Listing/Delisting Criteria for Hawaii State Surface Waters:

Category 5 - one or more designated use non-attainments or water quality impairments.
Category 4 - one or more designated use non-attainments or water quality impairments, but a TMDL is not needed.
Category 3 - insufficient data for determining designated use attainment and water quality impairment.
Category 2 - one or more designated use attainments
Category 1 - all designated uses attained

5. Limited Designated use attainment is established as follows:
Recreational use - attainment of enterococci criteria (exception to 2. above)
Native aquatic stream life use - results of HSBP
Any use - results of Use Attainability Analysis

So in effect, when we break down the inland waterbodies into their classifications, we are left with two main uses, Class 1 and Class 2. The class 1 is further divided into Class 1a and 1b. The bolded uses are the only ones for which an attainment decision is readily available based on the application of the rules of logic above.

General Class 1 uses:

1. **recreational purposes - attainment of enterococci criteria (exception to 2. above)**
2. **support and propagation of aquatic life - Subsistence fishing use - results of tissue toxicity testing (and human health risk assessment if warranted) or results of HSBP (including designated reference sites)**
3. agricultural and industrial water supplies – undefined parameter combination
4. shipping, and navigation - undefined parameter combination

Class 1.a

1. scientific and educational purposes- undefined parameter combination
2. **protection of native breeding stock - results of bioassessment (including designated reference sites)**
3. baseline references from which human caused changed can be measured - undefined parameter combination
4. **compatible recreation - attainment of enterococci criteria (exception to 2. above)**
5. aesthetic enjoyment - undefined parameter combination
6. other nondegrading uses which are compatible with the protection of the ecosystems associated with waters of this class - undefined parameter combination

Class 1.b

1. domestic waters supplies – undefined parameter combination
2. food processing – undefined parameter combination,
3. **protection of native breeding stock - results of HSBP (including designated reference sites)**
4. **the support and propagation of aquatic life - results of HSBP (including designated reference sites) and/or results of tissue toxicity testing (and human health risk assessment if warranted)**
5. baseline references from which human-caused changes can be measured, - undefined parameter combination
6. scientific and educational purposes - undefined parameter combination
7. **compatible recreation - attainment of enterococci criteria (exception to 2. above)**
8. aesthetic enjoyment- undefined parameter combination

Class 2 uses

1. protection and propagation of fish, shellfish, and wildlife- undefined parameter combination
2. **recreation in and on these waters - attainment of enterococci criteria (exception to 2. above)**

Comment 9.4 *"We also noted that "Table 7: List of Changes to 2004 Listed Coastal Waters" was not included in your Public Notice."*

Response: We have included the missing table 7 in our final submission of the report.

Commenter 10: Carl Berg, Hanalei Watershed Hui, Hanalei, Kauai, email dated Jan. 16, 2007

Comment 10.1 *"[Part 1] Pg 10 and pg 15. There does not appear to be sufficient evidence to establish Clostridium standards and material cited as footnote #4 is not in a scientific peer-reviewed journal. Therefore the use of Clostridium as even as a secondary indicator is of suspect value."*

Response: EPA allows the DOH to use clostridium perfringens as a secondary indicator/tracer for protecting public health and welfare. We do not intend to pursue establishing a Clostridium standard for Hawaii. However, both the DOH and C&C of Honolulu find value in the use of Clostridium perfringens as a secondary indicator/tracer. Currently Enterococcus has been shown to be an unreliable indicator (BEACH Conference 2006). Several sewage spills on Oahu in 2006 show that Enterococcus is ineffective during any rain event. Since no single indicator looks very promising for the next 2 to 3 years, we need to have a "tool box" approach to make decisions. (There was an "Experts" meeting in March 2007, convened by EPA for the purposes of reviewing and finding new indicators and to respond to the NRDC lawsuit). Until, EPA develops new indicator standards, DOH will continue to use Clostridium perfringens as a secondary indicator in a "tool box" approach.

Comment 10.2 *"Were the secondary checks in question for the Hydrolab multiprobe only? Then what relevance does that have to either turbidity measurements taken with another machine, or with the Enterococcus values determine by the DOH laboratory. You are getting rid of much valuable data. In addition, the review does not include the extensive data sets collected by HWH under the Target Watershed Initiative program. This includes valuable nutrient and turbidity data, as well as Enterococcus data. The rejection of these data severely jeopardizes the accuracy of the determinations for streams estuaries in Hanalei Watershed."*

Response: Please understand that the Hydrolab and nutrient data will not be completely tossed out; only not used for this reporting cycle. The use of the Hach turbidity, Hydrolab and nutrient data along with the microbiological data for the report was discussed at length, and it was decided that for this report the Hydrolab and nutrient data would not be used. These data would be reevaluated for the next cycle, and there is a possibility that it may be used for the next report. There were missing calibrations, secondary checks, and secondary check violations for the Hydrolab. After discussion, both the microbiological and Hach turbidity data have been included in the assessment. The tables now reflect the additional data.

Comment 10.3 *"Note that Hanalei Bay and the North Shore of Kauai are part of the National Marine Sanctuary. This should be specifically noted in its classification."*

Response: The marine Waterbody Demarcation Map for Kauai now shows the boundaries of the Hawaiian Islands Humpback Whale National Marine Sanctuary and

indicates its relationship with Class AA open coastal waters and embayments (p. III-19).

Comment 10.4 *"Hanalei Bay at Waioli Beach Park turbidity values are available in DOH data collected by HWH."*

Response: See Comment 10.2.

Comment 10.5 *"Decision code NC= should be Ac=Attained"*

Response: This has been corrected.

Comment 10.6 *" Waioli Stream rows for wet and dry should be next to each other. I question if enough sampling was done and over enough of the stream to make this determination. Was HWH data used?"*

Response: This has been corrected. No HWH data was submitted for the freshwater portion of Waioli Stream and the 2004 assessment decisions for the stream remain unchanged. (p. IV-2). Data was submitted for the bridge site and the mouth portions of the estuary, but the 2004 assessment decisions for the Waioli Stream Estuary remain unchanged. (p. IV-6).

Comment 10.7 *"Pg. 45-48 the order in which these sites are listed seems haphazard, rather than with respect to geographical location. Many are misclassified coastal codes. I made correction mainly for the Hanalei area.*

- *Hanalei Bay Landing #156 and #93 should be combined. Check salinity. This is estuarine.*
- *Hanalei Bay Pavilion 158 & 92 should be combined. DOH has turbidity data from HWH collections and its own weekly collections. Check salinity. Estuarine?*
- *Hanalei Bay Mooring #157. Estuarine? HWH data does not support N*
- *Hanalei Bay at Pinetrees #159 = Waioli Beach #91. Estuarine? Where is DOH turbidity data?*
- *Hanalei Bay upstream from Dolphin #160 is Estuary, not bay, about 2 miles up-river.*
- *Waioli Stream Estuary #163 is estuary, not Bay. HWH submitted lots of data on bacteria, turbidity, and nutrients. All far exceed state standards.*
- *Hanalei Bay Weke Rd. #161 you have years of data for bacteria collected by both DOH and HWH. Also exceeds for nutrients and turbidity.*
- *Hanalei River HI385259 is where? What stations? Why not use all of the nutrient data?*
- *Pg. 46. Kalihiwai Bay should be next to Anini. DOH has data on turbidity. Should be estuary, not open coastal.*
- *Waimea, Lucy Wright Beach Co. Park is Estuary. DOH data is available.*
- *Pg. 47. Waikoko should be back in Hanalei Bay. HWH provided data on turbidity, nutrients, and bacteria. One of the most polluted places.*

- *Pg. 48. Waipa Stream Estuary should be back in Hanalei Bay. HWH provided data on turbidity, nutrients, and bacteria. One of the most polluted places."*

Response: Data was checked for the sites mentioned, and changes made where applicable as shown in the table below. Please refer to Table 7 – Change Table and Chapter IV for details.

Location	**Waterbody Type**	**Notes**
Hanalei Bay Landing #156	B	These two areas were combined into one unit (HIW00093). Geographically this is a marine waterbody, not an inland waterbody (not an estuary).
Hanalei Bay Landing #93	B	
Hanalei Bay Pavilion #158	B	These two areas were combined into one unit (HIW00092). Both DOH and HWH turbidity data have been included in the final assessment. The assessment result for turbidity changed from "?" (unknown) to "N" (not attained). Geographically this is a marine waterbody, not an inland waterbody (not an estuary).
Hanalei Bay Pavilion #92	B	
Hanalei Bay Mooring #157	B	HWH microbiological data for this site was not readily available and/or not found, but may be resubmitted and reconsidered for the next monitoring and assessment cycle. Geographically this is a marine waterbody, not an inland waterbody (not an estuary).
Hanalei Bay at Pinetrees #159	B	These two areas were combined into one unit (HIW00091). Both DOH and HWH microbiological and turbidity data have been included in the final assessments. The assessment result for enterococci (microbiological) changed from "N" (not attained) to "A" (attained). The assessment result for turbidity changed from "?" (unknown) to "N" (not attained). Geographically this is a marine waterbody, not an inland waterbody (not an estuary).
Waioli Beach #91	B	
Hanalei Bay upstream from Dolphin #160	E	HIW00160 has been designated as an estuary.
Waioli Stream Estuary #163	E	HIW00163 has been designated as an estuary. HWH data for this site was not readily available and/or not found, but may be resubmitted and reconsidered for the next monitoring and assessment cycle. Regardless, HWH nutrient data would not be used for current assessment decisions (see response to Comment 10.2), and the current assessment decision for turbidity ("N", not attained) would be unaffected by additional HWH data if those data "far exceed state standards."

Location	Waterbody Type	Notes
Hanalei Bay Weke Rd. #161	E	These two areas were combined into one unit (HI385259) that has been designated as an estuary. Both DOH and HWH microbiological and turbidity data have been included in the final assessments. The assessment results for enterococci (microbiological) changed from "?" (unknown) at Weke Rd. and "N" (not attained) at Hanalei River to "N" (not attained) at HI385259. The assessment result for turbidity remained unchanged. HWH nutrient data was not readily available and/or not found for this area, but may be resubmitted and reconsidered for the next monitoring and assessment cycle. Regardless, HWH nutrient data would not be used for current assessment decisions (see response to Comment 10.2).
Hanalei River HI385259	E	
Pg. 46. Kalihiwai Bay	C	The waterbodies remain arranged alphabetically, rather than geographically, for ease of organization and reading. DOH turbidity data have been included in the final assessments. The assessment result for turbidity remained unchanged. Geographically this is a marine waterbody, not an inland waterbody (not an estuary).
Waimea, Lucy Wright Beach Co. Park	C	Lucy Wright Beach Co. Park was renamed Waimea Bay Beach (Near River station). Geographically this is a marine waterbody, not an inland waterbody (not an estuary). DOH microbiological data have been included in the final assessments. The assessment result for enterococci changed from "N" (not attained) to "A" (attained) due to the inclusion of clostridium data in the microbiological assessment.
Pg. 47. Waikoko	E	The waterbodies remain arranged alphabetically, rather than geographically, for ease of organization and reading. HWH data for these sites was not readily available and/or not found, but may be resubmitted and reconsidered for the next monitoring and assessment cycle. Regardless, HWH nutrient data would not be used for current assessment decisions (see response to Comment 10.2), and the current assessment decisions for turbidity ("N", not attained) would be unaffected by additional HWH data if those data confirm each of these two places as "One of the most polluted places."
Pg. 48. Waipa Stream Estuary	E	

Commenter 11: Thomas Young (Member, Hilo Bay Watershed Advisory Group Steering Committee and Member, Hamakua Soil and Water Conservation District), Les Takayama (Chair, Waiakea Soil and Water Conservation District) and Lesley Hill (Chair, Hamakua Soil and Water Conservation District), email dated Jan. 16, 2007

Comment 11.1 *"As a member of the Hilo Bay Watershed Advisory Group (HBWAG) Steering Committee, I have been authorized by the group to* ***formally request an additional two weeks to allow us adequate time to provide you with our comments on the current Draft 2006 Integrated Report of Assessed Waters in Hawaii Prepared Under Clean Water Act §303(d) and §305(b)*** *-- via a fully coordinated commenting letter which will be coming to you from our HBWAG Spokesperson."*

Response: We regret that your request for an extension of the public comment deadline could not be granted due the pressing nature of our obligation to submit the final report to EPA.

Comment 11.2 "*Inappropriate Listing - I believe that the decision to list the Alenaio and Waiakea Streams during the 2004 listing cycle was inappropriate and should be corrected by de-listing these streams at the present time."*

Response: The decision to list Alenaio and Waiakea streams was issued by EPA on March 02, 2002. Since that time, the data required to revisit this decision (as established in the Listing and Delisting Criteria for Hawaii State Surface Waters in 2002, 2004, and 2006) has not been readily available, and therefore the streams cannot be delisted.

Comment 11.3 *"The Alenaio and Waiakea streams are ephemeral streams along their full reaches. Because of the lack of water flow or any permanent or semi-permanent aquatic habitat in these ephemeral streams and after discussions with biological experts familiar with these specific areas, we question the existing uses of the streams (using the regulatory definition of that term). I would like clarification on the declared existing use and the designated use, if there are any."*

Response: Water does flow in ephemeral streams and can sustain occasional, semi-permanent, and permanent aquatic habitat (including hyporheic ecosystems) and riparian, floodplain, and other terrestrial habitat that supports the protection and propagation of fish, shellfish, and wildlife and/or supports recreation in and on the streams. We would like to obtain contact information for "the biological experts familiar with these specific areas" so that we may consult with them.

"Existing uses" means those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards (HAR §11-54-1). Although various "existing uses" of Hawaii streams have existed and been declared by various parties over the last 31 years, DOH has not comprehensively surveyed this history to determine the scope of these uses and the previous extent of their official acknowledgement by DOH.

Designated uses of all Hawaii streams (including "Intermittent Streams" as defined in HAR §11-54-1) are declared by HAR §11-54–3(b)(1)(A), §11-54–3(b)(1)(B), and §11-54–3(b)(2) and vary with stream class (1.a., 1.b., and 2.). Alenaio and Waiakea are class 2 streams, in which "The uses to be protected [designated uses] ... are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters" [HAR §11-54–3(b)(2)]. Given that "The objective of class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation," we assume that such uses are usually compatible with class 2 designated uses. We request any information validating or invalidating the existence of such uses in Alenaio and Waiakea streams. Among such uses, stream characteristics suggest that shipping and navigation are not "existing uses" of these streams, while all the others may exist.

Although we're not sure about the context of public comments and questions about the "appropriateness" of the declared uses (appropriate with regard to what, or for what purpose?), in the most fundamental context determining the appropriateness of these uses would require us to determine the appropriateness of their enabling legislation, which would be a matter for consideration by the United States Congress and the DOH water quality standards review process.

Given the broad declaration of designated uses in the State water quality standards, it is easier to determine if an "existing use" is a designated use than vice-versa. For example, support of traditional and customary native Hawaiian beliefs, values, and practices, along with many of the other "reasonable and beneficial uses" and instream uses protected under the State Water Code (Hawaii Revised Statutes Chapter 174C), are existing uses of streams (including Alenaio and Waiakea) that are generally compatible with their designated uses.

Comment 11.4 *"A Use Attainability Analysis should be conducted - Due to these factors, I respectfully request that the DOH conduct a Use Attainability Analysis to ensure that the actual uses can be attained."*

Response: We question the need for and benefit of conducting a Use Attainability Analysis (UAA) to ensure that actual uses can be attained, since an "existing use" (if this is the intended meaning of "actual use") is by definition attained (no UAA necessary). When requesting that DOH consider removing or revising designated uses for state waters, please identify the particular uses to be removed or the specific revisions to be considered. Even if DOH removed or revised designated uses for streams (including "Intermittent Streams" as defined in HAR §11-54-1), they would still be state waters and would still be regulated by the pertinent water quality criteria, anti-degradation policy, and water quality certification requirements established by the State Water Quality Standards (HAR §11-54) and by NPDES permit requirements (HAR §11-55). Also, the pollutant loads that they carry to receiving waters (in this case, downstream estuaries and Hilo Bay) would still be subject to TMDL load allocations [Clean Water Act §303(d)]. Unless there is significant socioeconomic harm that could potentially be softened or reversed by removing or revising designated uses,

or significant ecosystem, water pollution control, or water quality benefits that would result, conducting a UAA is a low-priority or unnecessary task that would inappropriately drain our limited environmental health program resources.

The State regulatory framework includes broad definitions of designated uses that are not, in general, specifically attached to particular water quality criteria and/or attainment assessment methodologies. We encourage public participation in the water quality standards review and revision process to help us make this framework more understandable and more useful for water pollution control and water quality management.

Comment 11.5 "*Sampling Questioned* - *I am very concerned that due to the infrequency of rainfall during the study period, the USGS study was unable to accumulate baseline data. … In addition, the data quality for the Waiakea Stream was compromised by a major stream construction project that was conducted during the sampling study, at the mid-point on the stream between the USGS recording stations. … Therefore I believe that the data collected at the lower USGS site has limited, if any, value and should not be used in establishing or modifying any model that will be used for the remaining one hundred and thirty two TMDLs to be done in Hawaii."*

Response: The water level and streamflow data accumulated by USGS provides a continuous baseline of actual conditions for the entire period during which the instruments were deployed in each stream. As intended, the sediment and nutrient concentration data accumulated by USGS provides a baseline of water quality conditions across a range of streamflow conditions. Due to the infrequency of rainfall during the study period, instrument deployment was extended beyond the original contract period. This allowed us to sample the number and range of stormflow events originally intended for the project.

The value of the data collected is evaluated in the forthcoming USGS open file report "Suspended-Sediment and Nutrient Loads for Waiakea and Alenaio Streams, Hawaii, 2003 to 2006" and in the forthcoming DOH TMDL proposal. The data can be used for what it is – measurements of suspended sediment and nutrient concentrations at a single point in Waiakea Stream that were influenced at certain times by upstream construction activities. This does not limit the data's utility for describing actual water quality conditions and identifying the causes of those conditions. The data can still be used for modeling watershed response to land disturbance and rainfall, and thus can still be used for developing Waiakea Stream TMDLs and for informing the establishment and modification of models that will be used for remaining TMDLs.

Comment 11.6 *"Future Cost Issues – I am very concerned that our limited public resources will be spent on costly projects that are meaningless and, if implemented, prove to be futile."*

Response: We are also concerned with the best use of public funds. Please submit your recommendations and supporting rationale for specific waterbody/pollutant combinations that should be prioritized for TMDL development.

Comment 11.7 *"Based on the inputs and concerns I have expressed above, I respectfully request that these two streams be de-listed and not considered for TMDL activity."*

Response: The data required to de-list these streams (as established in the Listing and Delisting Criteria for Hawaii State Surface Waters in 2002, 2004, and 2006) is not readily available, therefore the streams cannot be delisted. The cutoff date for data that will be used for 2008 listing and de-listing decisions is November 01, 2007.

DOH must submit Alenaio and Waiakea TMDLs for EPA approval in order to fulfill current federal grant workplan commitments. Essentially, TMDLs are plans to achieve water quality standards. Thus as long as these streams cause or contribute to the non-attainment of existing uses, designated uses, water quality criteria, and/or the State's antidegradation policy in any state waters, they will remain in consideration for TMDL activity.

Commenter 12: Ann Fielding, Makawao, Maui, email dated Jan. 17, 2007

Comment 12.1 *"I am concerned about storm runoff into the ocean, most particularly silt runoff as well as agricultural chemicals. I would like to see those chronically affected areas identified and assessed after wet weather events. I want to see pollution prevention and controls in place and support full funding for these activities."*

Response: The sampling is performed year-round; so wet-weather events are captured as well as dry events.

Comment 12.2 *"I would like to see the streams meeting all categories of attainment…I support full funding for complete monitoring, data collection, data reporting and subsequent corrective actions to ensure clean water quality for Maui's residents and future."*

Response: The Water Quality Monitoring and Assessment Report documents the condition of all State waters, and lists those that are impaired under State standards. This information can be used to support funding requests for monitoring, assessment, and corrective action, it is not however, a direct source of funding. The sampling of the waters of Maui as well as the other islands does have to be prioritized based on available resources.

Comment 12.3 *" There are no water quality standards for our groundwater. This is the source of our drinking water. I am outraged by this. Your report states that 81% of our aquifers are highly vulnerable to contamination. We need standards to protect the quality of the water and monitoring to determine if the standards are being met. I request full funding to achieve these goals."*

Response: While there are no standards developed specifically for groundwater quality, Hawaii utilizes drinking water standards when testing groundwater used for drinking

water purposes. Standards (guidelines) for groundwater quality also exist through various environmental protection programs (UST/LUST, State Superfund, Pesticides, etc.), which must evaluate the quality of groundwater when determining remediation of potential contaminating activities.

The statement in the report that 81% of our aquifers are highly vulnerable to contamination is based on solely on the criteria defined in the "Aquifer Identification and Classification for Kauai, Oahu, Maui, Molokai, Lanai, and Hawaii: Groundwater Protection Strategy for Hawaii", by John Mink and L. Stephen Lau. The criteria used to define "vulnerability to contamination" are whether the aquifer is "confined or unconfined" and based on the authors' familiarity with environmental conditions. Vulnerability as defined here does not take into account location of potential contaminants, depth to the groundwater, or other environmental and contaminant factors.
To ensure that water continues to be safe for human consumption, groundwater sources of drinking water (for public water systems) are periodically monitored for a number of parameters by the Maui Department of Water Supply, private water suppliers, and the Department of Health, as required by Federal and State drinking water requirements. Information on the quality of groundwater used as drinking water sources, that provide water to the water systems that serves your area, are available annually (every July 1) through your public water system. Contact your public water system to request a copy of the "Water Quality Report" for your water system. This report is required annually and must be provided to consumers.

Finally, the Groundwater Protection Program is developing and implementing a groundwater monitoring strategy to provide more information about the condition of the State's groundwater. This system will need first to establish a list of parameters that are indicative of groundwater quality, identify a number of analytical methods suitable for measuring these parameters, and develop a method for prioritization by which to approach the extremely large task of measuring groundwater quality statewide.

Comment 12.4 *"I would like to see a laboratory on Maui where the public could take water samples for bacteriological testing and reporting."*

Response: Commercial and public service laboratories are generally used for private/individual water quality testing. Laboratories are located primarily on O`ahu unless a neighbor island branch office is available. Commercial and public service laboratories include:

AECOS INC.
45-939 Kamehameha Hwy, Suite 104
Honolulu, HI 96744
Phone: 808-234-7770
Email: aecos@aecos.com

Food Quality Labs (FQ Labs)
3375 Koapaka St., Suite G314
Honolulu, HI 96819
Phone: 808-447-3797
Email: fql@fqlab.com

Oceanic Analytical Laboratory Inc.
99-193 Aiea Hts. Dr., Suite 121
Aiea, HI 96701
Phone: 808-486-5227
Email: info@oceanic-labs.com

University of Hawai`i-Manoa
College of Tropical Agriculture and Human Resources (CTAHR)
Agricultural Diagnostic Service Center (ADSC)
1910 East West Rd., Sherman Lab 134
Honolulu, HI 96822
Phone: 808-956-6706
Email: adsc@ctahr.hawaii.edu

Note: The Department of Health does not recommend or endorse any water quality testing laboratory.

Commenter 13: Janet Ashman, Environmental Specialist, Hawaii Agriculture Research Center, Maui, email dated Jan. 19, 2007

Comment 13.1 *"The use of photographs to assess water quality is scientifically unsound and unacceptable. As noted in the document itself, this practice is inappropriate and should not be used to support listings."*

Response: Photographs are frequently used in enforcement actions to support determinations that violations of State water quality standards and/or permit conditions have occurred. Photographs are also an important part of the DOH weight of evidence approach to assessing the attainment of water quality standards. However, photographs used in the past as part of the State's assessment methodology were given unreasonable weight in a previous federal court review of EPA's approval of the State's assessment decisions. As a result, the State revised its assessment methodology to clarify the limited role and weight of photographic evidence in assessment decisions. DOH does not assess water quality exclusively by photographic evidence, however the use of photographs in a weight of evidence approach to water quality assessment is scientifically sound, acceptable, and appropriate.

Comment 13.2 "State Water Quality Standards cannot be met even under natural conditions. Natural levels of turbidity regularly exceed our state water quality standards set for turbidity. Other states account for their background levels as part of the standards

setting process and there is no sound justification for Hawaii to ignore our own conditions. Instead, our standards seem to have been set using drinking water standards. This is an impossibly high standard that is unnecessary and unrealistic."

Response: There are many instances where natural conditions including turbidity are meeting the WQS, please refer to Chapter IV – Assessment table. Hawaii also accounts for background levels as part of the standards setting process, as documented in the technical rationales and other administrative records supporting the ongoing promulgation of these standards. We are not aware of any evidence in these records that our standards were set using drinking water standards. In fact, surface water standards are sometimes stricter than drinking water standards because of the smaller size of aquatic receptor organisms (e.g. fish v. humans) and their greater health risk from exposure to given pollutant concentrations throughout their lifecycle.

This Integrated Report evaluates existing data from the last 6 years against the standards and makes a yes/no statement regarding whether that Standard is exceeded. The new Integrated Report format gives more detail into WQS attained/not attained, as compared to the 2004 Listing format and is intended to show if the designated uses are being attained. There are many instances where natural conditions are meeting the WQS, please refer to Chapter IV - Assessment table. The issue of a amending WQS for any parameter is considered during the rule review cycle for the WQS, generally held every 3 years. We acknowledge your past comments and interest in participating in the workgroup for rulemaking. To continue this dialogue, please contact our office, or keep checking our website. Once a change is recommended for the WQS, the rationale document and public hearing meetings are included.

Comment 13.3 *"Scientifically questionable habitat and biotic assessment protocol still being used. We continue to object to the use of the Hawaii Stream Bioassessment Protocol to assess stream health within the regulatory context. This protocol has been rejected as not scientifically rigorous and has no place in impairment determinations."*

Response: DOH uses the Hawaii Stream Bioassessment Protocol (HSBP) to **help** evaluate the attainment of designated and existing native and other aquatic life uses protected by the Clean Water Act and the Water Quality Standards (WQS). The HSBP is not a water quality criterion per se. The new reporting structure specifically targets determining whether designated and existing uses are attained. The use of HSBP did not result in any listing of streams this year, however it did put several streams into Category 2 (some uses attained). DOH uses a weight-of-evidence in listing/delisting decisions, and the HSBP is another line of evidence.

Bioassessment methodology is well recognized and accepted throughout the country and is incorporated with Biocriteria in many states. Bioassessments are a tool to help measure habitat/biological conditions and serve three functions: 1) screening or initial assessment of conditions; 2) characterization of impairment and diagnosis; and 3) trend monitoring to document improvements or further degradation over time (see EPA 2002b).

Federal law allows (and encourages) the use of bioassessment for many CWA purposes: Aquatic Life Use Attainment [CWA section 305(b)]; Nonpoint Source Pollution Management (CWA section 319); TMDLs [CWA section 303(d)]; and NPDES permits (CWA section 402). The CWA has a national objective "to restore and maintain the chemical, physical and biological integrity of the Nation's waters" See CWA section 101(a).

The Hawaii Stream Bioassessment Protocol is the only written manual for assessment that contains a complete set of field procedures applicable to Hawaii's unique stream ecology and is part of our Quality Management Plan and Quality Assurance Program Plan. The only other available field protocol for stream assessments is the one developed by USGS for its National Water-Quality Assessment (NAQWA) studies in the United States, which focused primarily on the composition of stream sediments, water and fish at sites in Hawaii along Manoa, Waikele and Waihee Streams, and on groundwater quality at a number of sites on Oahu. DOH is aware of other assessment methodologies in Hawaii, but none offer a complete Quality Assurance protocol.

DOH combines water quality data with measurement of habitat and aquatic community parameters as part of our screening process for streams with respect to pollution sources. We are carrying out a technical ranking exercise, not a detailed study of each stream, which would provide ancillary information for our uses but not replace the ranking process for TMDL and project implementation use.

DOH uses the HSBP to evaluate the attainment of designated and existing aquatic life uses protected by the Clean Water Act and the Water Quality Standards (WQS). Currently, DOH uses a scoring system contained within the metrics of the protocols for evaluating the narrative criteria in H.A.R. section 11-54-04(a), which is applicable to all narrative descriptions obtained from fieldwork. This index of biotic integrity (IBI) quantifies the designated uses of aquatic life and native aquatic life. In this manner, the HSBP serves our needs.

The process by which we evaluate any potential new protocols is: a) review the methodology and its effectiveness in answering relevant questions; b) review the accompanying QA/QC plan; c) then apply the protocol and evaluate results against the narrative WQS criteria. If the proposed protocol is to be applied by DOH staff, we would need to incorporate it into the DOH Quality Management Plan, which is approved by EPA. HSBP has been accepted as an evaluation tool in our QMP.

The "level of scientific validity" is established for DOH by the use of carefully described methodologies and QA/QC procedures. Because science proceeds in a point-counterpoint manner, controversy over methodologies will always exist. Although there is argument over whether a metrics-based approach (HSBP) is appropriate for Hawaii's streams, we have not been able to adequately evaluate other approaches because of a lack of field manuals and QA/QC plans. In other words, we have too little information to evaluate data quality and relevance of these other approaches to DOH

water quality management needs. We are able to use the HSBP for water pollution/land use impact evaluations; these elements are missing from other approaches applied to the State's streams. The HSBP meets our program needs of determining whether a waterbody is meeting the designated or existing uses as defined.

Comment 13.4 *"Listing of dry gulches with prioritization for TMDL development*
We fail to see the point of spending hundreds of thousands of dollars to try to determine whether a dry (undiverted) gulch that has no water in it except during heavy rainfalls and cannot support aquatic life, is impaired and requires TMDLs. Common sense must be applied to these determinations and expenditures of public resources.

Hawaii has limited resources and should use them to list truly impaired waterbodies so that TMDLs can be developed and implemented speedily for those waters that are in fact unhealthy."

Response: Dry gulches that flow in response to heavy rainfall can carry heavy pollutant loads into coastal waters. They are also state waters ("Intermittent Streams" as defined in HAR §11-54-1) regardless of their ability to support aquatic life, and are regulated by the pertinent designated uses, water quality criteria, anti-degradation policy, and water quality certification requirements established by the State Water Quality Standards (HAR §11-54) and by NPDES permit requirements (HAR §11-55).

Because the pollutant loads they carry to downstream receiving waters can be a considerable source of receiving water impairment, these dry gulches are therefore subject to TMDL load allocations [Clean Water Act §303(d)]. Essentially, TMDLs are plans to achieve water quality standards. Thus as long as dry gulches cause or contribute to the non-attainment of existing uses, designated uses, water quality criteria, and/or the State's antidegradation policy in any state waters, they will remain in consideration for TMDL development and implementation. This comment is also addressed in responses to comments 11.4., 11.6., and 11.7.

Commenter 14: Sheldon Braidman, Kihei, Maui, email dated Jan. 19, 2007

Comment 14.1 *Marine and Estuaries: "Please note that there a better system is required and put into service for water quality testing, specifically bacteriological, to protect ocean users and ensure the health of the ocean around Maui County."*

Response: The bacteria enterococcus is an indicator bacterium is intended to signal the presence of human sewage but enterococcus itself most likely will not make you sick. It is suppose to indicate the presence of other harmful bacteria or viruses closely associated with human sewage. The problem with enterococcus is that it reproduces in the environment and its presence does not always mean that there is human fecal contamination. We know that when it rains and the streams flow into coastal waters, the enterococcus counts go up. We see this statewide. To help us detect human fecal influences, we used supplemental indicator bacteria called Clostridium perfringens.

When we find high indicator counts, we investigate to find out why. If we know of a sewage spill, we have the beach posted without waiting for test results.

Comment 14.2 *"I and many of my friends are members of the Maui Canoe Club and the Kihei Canoe Club. We are frequent ocean users. Combined club membership is approximately 350 people. Many of the coastal areas that we paddle in are not shown as tested areas for this bacteria known as Enterococcus. This is a serious concern."*

Response: If you let us know where your canoe club regularly practices, we may be able to add that site on our monitoring list.

Comment 14.3 *"It is my understanding that the Blue Water Task force projects where test for this specific bacteria were made, have shown that many times we are canoeing in contaminated waters."*

Response: See Comment 14.1.

Commenter 15: Robin Knox, Boardmember, Maui Tomorrow, email dated Jan. 19, 2007

Comment 15.1 *"We support the expansion of the geographic area of assessment units to include the larger waterbody area that the sampling station represents."*

Response: Thank you for your comment. DOH will continue to refine the assessment unit description process to achieve a higher level of confidence in the use attainment decision exercise.

Comment 15.2 *"We request that the report include the location of beach monitoring stations used in the assessment, preferably by mapping. We question whether 13 beach monitoring stations are sufficient for the entire island of Maui given the extensive shoreline, proximity of sewage sources to coastal areas, and large number of recreational users."*

Response: There are actually more than the 13 sites listed. In total, there are currently 57 sites around Maui, although only a portion of these is sampled at any given time. The numbers vary, but are usually around 18 sites. Sites are rotated every 6 months, with coverage around the island. The number of samples and sites across the island has been increasing each year, and it is hoped that this coverage will continue.

Comment 15.2a "*We request that the monitoring strategy include locations where wet weather events cause elevated bacterial levels, and that sampling events include wet weather conditions. The monitoring strategy should coordinate shoreline monitoring with monitoring of contaminated runoff including streams that may be conveying bacteria to the shoreline."*

Response: Sampling is performed year-round. It is known that the streams have high entero content, especially during periods of heavy rainfall and runoff. Areas of input into the coastal waters will have high counts, so sites are usually located away from these inputs. This enables a better picture of what the conditions of the beach is rather than what the stream is putting into the beach.

Comment 15.2b *"We request that the state post the bacterial data for recreational waters on the internet in a prominent and timely fashion so that the public may be informed of most current bacterial data."*

Response: We will try to add additional stations in the future. Ideally, an additional staff member would be very helpful on Maui. Currently, we have only one staff member on Maui whose duties also include that of several other programs (Wastewater, Solid Wastes, and sometimes Clean Air). Our bacterial data is on the Clean Water Branch (CWB) website http://emdweb.doh.hawaii.gov/CleanWaterBranch/WaterQualityData and also on the Maui Chapter, Surfrider Foundation website http://www.surfrider.org/maui/enterodata.htm. We are in the process of improving the CWB website and will try to get the data up in a timely fashion.

Comment 15.2c *"We request that the monitoring program include bacteriological monitoring of open coastal waters, especially within the Hawaiian Islands Humpback Whale National Marine Sanctuary."*

Response: We will consider bacteria monitoring on open coastal waters in the near future, pending staff and funding allocations. Since whales are mammals, they may also have the indicator bacteria, enterococcus in their gut. We know that seals have enterococcus in their gut. We will find out if whales have enterococcus are similar.

Comment 15.2d *"The report indicates that shoreline and offshore chemical monitoring has been curtailed due to limitations of available resources. We request that the DOH plan for full funding of this monitoring. The report indicates that not all marine waters have been assessed, and of those assessed, most are considered impaired by the levels of nutrients present. The continued monitoring and assessment of water chemistry is essential to protection of the fragile coastal ecosystems, including coral reefs. The monitoring data will be key to prioritization of the legally mandated Total Maximum Daily Load (TMDL) studies for the 219 coastal segments on the 2006 303(d) list."*

Response: We are currently monitoring shoreline areas for nutrients and turbidity and are planning to start up offshore nutrient sampling again. We temporarily restricted offshore monitoring in favor of monitoring all streams in the State due to the lawsuit by Earth Justice against EPA.

The Water Quality Monitoring and Assessment Report documents the condition of all State waters, and lists those that are impaired under State standards. This information can be used to support funding requests for monitoring, assessment, and corrective

action. The waters of Maui as well as the other islands do have to be prioritized based on available resources.

Comment 15.2e *"We request that the monitoring program include testing not only for conventional and non-conventional pollutants, but also for toxic pollutants (heavy metals, organic chemicals, herbicides, pesticides). Every chemical for which there is a marine water quality standard should be monitored."*

Response: Running tests for every toxic pollutant in the EPA standards is very expensive and beyond the budget of the program and DOH Laboratory**.** The Water Quality Monitoring and Assessment Report documents the condition of all State waters, and lists those that are impaired under State standards. The waters of Maui as well as the other islands do have to be prioritized based on available resources.

Comment 15.3a *"We request clarification of the methodology for attainment decisions for the Enterococcus standard. The report in Section C.1. (page 15 of 29) discusses the use of Clostridium perfringens as a secondary indicator of the presence of sewage. It is not clear whether the attainment decisions were made solely on the basis of the legal standard (Enterococcus) or were based on the use of the secondary indicator, C. perfringens. We strongly object to an attainment methodology that is based on anything other than the promulgated standard. C. perfringens should not be used as a criterion because it has not been subject to the rulemaking process and required public review. We request that all waters exceeding Enterococcus criteria be listed as non-attainment status without regard to the levels of C. perfringens present."*

Response: At the 2006 Beaches Environmental Assessment and Coastal Health Act (BEACH) Conference, studies have shown that Enterococcus reproduces in the biofilm (slime) of pipes and drainage canals and is not a good indicator bacterium for human fecal contamination. That is why the DOH uses Clostridium as a secondary indicator. For general information about BEACH see http://www.epa.gov/waterscience/beaches/, and the 2006-conference information can be found at http://www.tetratech-ffx.com/beach_conf2006 as well as direct information about the 2006 BEACH Conference study on Entero in biofilms http://www.tetratech-ffx.com/beach_conf2006/pdf/sessionIX/ferguson.pdf.

Dr. Roger Fujioka of the UH, Water Resources Research Center has been saying this for twenty years and is now being proven right. Natural Resource Defense Council (NRDC) recently sued EPA for not protecting the public recreational water users and EPA was supposed to come up with new methods/protocols by October 2005, which they did not. Please see http://docs.nrdc.org/water/wat_07032301A.pdf for more information. Current methods are over 20 years old.

DOH participated in an EPA conference call of States in response to the lawsuit. DOH also attended the Stakeholders Workshop in December 2006, in Washington DC to further its recommendations and nominate experts to the March 26-31, 2007 Experts Workshop in Warrington, Virginia to draw up new methods/protocols. The experts invited to the workshop were tasked to come up with new methods/protocols. Dr.

Roger Fujioka was invited to participate. Any changes to the recreational standards will need to go through public review process.

Comment 15.3b *"It is our understanding that the state is considering changing the current recreational bacteriological standards, specifically raising the criteria value from 7 cfu/100 ml to 33 cfu/100 ml. We request that DOH provide a written rationale that explains basis of current criteria and the basis of proposed criteria. We request public access via internet to data or reports that underlie the rationale. Because this is a complex issue of great concern to the public, we request an advance notice of rulemaking. We request that informational meetings be held on Maui prior to rulemaking in order to inform the public about the proposed change and the science and regulatory rationale supporting the change."*

Response: We will provide a rationale for the proposed changes and public notice all documents. We acknowledge your request for informational meetings and we include the neighbor islands in all public meetings. The issue of amending WQS for any parameter is considered during the rule review cycle for the WQS, generally held every 3 years. If the public is interested in participating in the workgroup for rulemaking, please contact our office, or keep checking our website. Once a change is recommended for the WQS, the rationale document and public hearing meetings are included.

Comment 15. 4 "*We strongly support the Department in its efforts to collaborate with other state and federal agencies, private consulting firms, and volunteer monitoring programs. We believe such collaboration on monitoring will result in the most efficient use of taxpayer dollars. We urge the state to conduct outreach to county governments in order to strengthen the implementation of the water quality management program through county decision-making and permitting (such as Special Management Area permits). We urge the DOH to provide specific guidance regarding the design of water quality monitoring programs that are supportive of and compliment the state monitoring program."*

Response: DOH agrees that collaboration is the most efficient means for quality results. These kinds of outreach and guidance efforts are in progress across all Department water quality programs. Both CWB and EPO staff are available for outreach activities on a time and resource available basis. DOH welcomes any data that can meet the rigorous EPA requirements. If groups are interested, please contact our offices.

Comment 15.5 "*We request that the marine assessment report include documentation of public participation, in particular of the data submitted by parties other than DOH."*

Response: This section fulfills this request

Comment 15.6 "*We request that the marine waters assessment include a summary table of changes similar to that provided in Table 3 of the stream assessment report."*

Response: The table is now included.

Comment 15.7 "*We request that the marine waters assessment report include a table and mapping that that clarifies waterbody types, decision unit boundaries and applicable criteria for each waterbody (see Table 2 of the streams assessment report for example).*"

Response: Maps and illustrations are very helpful tools. The Marine Waterbody Demarcation Maps show the approximate boundaries between some embayments and all open coastal waters and oceanic waters (three waterbody types) and the boundaries between Class A and Class AA marine waters (two waterbody classes). (p. I-19 to I-23). The State of Hawaii Administrative Rules Chapter 11-54 are available on the EPO website at: http://www.hawaii.gov/health//about/rules/11-54.pdf . These rules are the principal authority for clarifying waterbody types and applicable criteria. Decision unit boundaries define segments within a single waterbody type that are segregated from the entire extent of this single waterbody type for monitoring and assessment purposes.

Comment 15.8 "*The report indicates that all streams assessed were placed into Category 3 (insufficient data to make a use support determination). We urge the DOH to plan for full funding for this program. We request monitoring of listed streams be increased to gather sufficient data for assessment. In addition we request that the monitoring program be expanded to include streams that were not included at all in the assessment due to lack of data.*"

Response: The Water Quality Monitoring and Assessment Report documents the condition of all State waters, and lists those that are impaired under State standards. This information can be used to support funding requests for monitoring, assessment, and corrective action. However, changes in the extent of water quality impairments and monitoring and assessment needs from one reporting cycle to the next do not guarantee similar changes in funding. The waters of Maui as well as the other islands do have to be prioritized based on available resources.

Comment 15.9 "*We urge DOH to continue efforts to establish a comprehensive waterbody inventory. An inventory of the resources to be protected and proper classification of waterbody type and applicable standards is critical to protection of the quality of water resources.*"

Response: DOH is currently seeking fiscal resources to accomplish this task for our water management purposes. In the meantime, the Department of Land and Natural resources in nearing publication of an Atlas of Hawaii Watersheds.

Comment 15.10 "*We strongly support the efforts of DOH to provide further definition of hydrologic units, waterbody types, and criteria for other waterbody types in addition to the streams*"

Response: WQS revision is a significant task that requires substantial resources to be allocated for data collection and interpretation. DOH is currently gathering information

for the next round of revisions; we would appreciate any direct contribution to the revision process. Please keep in contact with our office for notice of the next formal process to begin.

Comment 15.11 *"The report indicates that groundwater quality standards have not been established for the state. We request that DOH make the establishment of groundwater quality standards the highest level of priority. It is clear that on Maui, the Safe Drinking Water Act alone is not adequate to protect the quality of our groundwater resources. We request development of criteria for use as source of drinking water supply, and for aquatic life protection of the freshwater and marine ecosystems which may ultimately be impacted by groundwater flows."*

Response: While there are no standards developed specifically for groundwater quality, Hawaii utilizes drinking water standards when testing groundwater used for drinking water purposes. These standards and other drinking water requirements constitute the criteria for groundwater use as sources of drinking water.

Standards (guidelines) for groundwater quality also exist through various environmental protection programs (UST/LUST, State Superfund, Pesticides, etc.), which must evaluate the quality of groundwater when determining remediation of potential contaminating activities.

Comment 15.12 *"The groundwater assessment identifies areas of existing groundwater contamination; great potential for additional contamination to occur, and classifies 213 Maui aquifers as" highly vulnerable to contamination". The current assessment data appears to have come exclusively from testing of finished (treated) public water supply wells. This monitoring is simply not adequate for assessment of the quality of the groundwater resource. We request that DOH place the highest priority the establishment of an ambient groundwater monitoring network that includes not only aquifers that may be potentially used for drinking water, but also monitors areas with high potential for contamination of any aquifer. In particular, monitoring of groundwater quality under agricultural lands is needed. A review of the limited, available data indicate that this is the primary threat to Maui's drinking water supply, as well as an exposure route for fertilizers, pesticides and herbicides to reach groundwater that eventually discharge to ocean waters and may impact sensitive marine systems."*

Response: The statement regarding the classification of aquifers as "highly vulnerable to contamination" is based solely on the non-confinement criterion defined in the "Aquifer Identification and Classification for Maui: Groundwater Protection Strategy for Hawaii", by John Mink and L. Stephen Lau. The criteria used to define "vulnerability to contamination" is whether the aquifer is "confined or unconfined" and based on the authors familiarity with environmental conditions. Vulnerability as defined here does not take into account location of potential contaminants, depth to the groundwater, or other environmental and contaminant factors.

The current assessment data is primarily, but not exclusively from testing of public water supply wells. Due to the high quality of the groundwater, most wells used to provide drinking water are simply disinfected prior to the water being provided to the public and therefore reflect the actual quality of the groundwater aquifer below. Some of the wells do indeed require treatment for the removal of chemicals which demonstrate the ability of certain chemicals to contaminate our aquifers.

We agree that it is inadequate to use drinking water data to assess the quality of the groundwater resource. Public drinking water wells represent approximately 450 of what has been estimated at over 3,000 wells statewide. In addition, we agree that an ambient groundwater monitoring network should be established in order to further this assessment. For this reason, and with EPA's concurrence, the Department of Health has initiated the development of a groundwater monitoring plan which would significantly expand our knowledge of the current quality of groundwater throughout the State.

In order to ensure that drinking water is safe, groundwater sources of drinking water are periodically monitored for a number of chemical parameters by the Maui Department of Water Supply, public water systems, and the Department of Health, as required by Federal and State drinking water requirements. Due to the fact that it is not possible to sample all wells for all possible pollutants, some form of prioritization will be necessary. The DOH-SDWB will use drinking water standards and groundwater remediation guidelines, along with information on new and emerging contaminants, identification of potential sources of contamination, and other factors to provide the basis for prioritizing monitoring efforts as we develop and implement a comprehensive groundwater quality monitoring plan and program to assess the quality of groundwater resources in the State. This comprehensive groundwater quality monitoring plan will include ambient water quality monitoring. Please keep in mind that such a comprehensive monitoring program may be very costly and may not be fully funded. Therefore the DOH-SDWB must have a mechanism in place to prioritize its non-regulatory monitoring activities.

Comment 15.13a ***"****The report indicates that the Comprehensive State Groundwater Protection Program is under review by EPA. The assessment report documents 29 different state programs or activities designed to protect our groundwater resources. Despite numerous programs and the involvement of three state agencies, groundwater quality on Maui is not being protected."*

Response: The Environmental Protection Agency (EPA) has completed its review of the Groundwater Protection Program Strategy/Plan and has concluded that it does not fully incorporate comments from other agencies and does not analyze or propose how these agencies will work with the DOH to protect groundwater. As such, EPA has concurred with our proposal to move from strategy development to generating groundwater quality data to aid in better planning and decision making. The re-direction of the Groundwater Protection Program will move towards the development and implementation of a groundwater/drinking water quality monitoring program.

While there are no standards developed specifically for groundwater quality, Hawaii utilizes drinking water standards when testing groundwater for drinking water purposes. Standards (guidelines) for groundwater quality also exist through various environmental protection programs (UST/LUST, State Superfund, Pesticides, etc.) which must evaluate the quality of groundwater when determining remediation of potential contaminating activities. These standards and guidelines, along with other information on new and emerging contaminants and identification of potential sources of contamination will provide the basis for the Groundwater Protection Program to develop and implement a comprehensive groundwater quality monitoring plan and program to assess the quality of groundwater resources in the State. Please keep in mind that such a monitoring program may be very costly and may not be fully funded. The Hawaii Groundwater Protection Program currently operates on an annual budget of less than $300,000 of Federal grant monies and no State funding.

Upon completion of the State Comprehensive Groundwater/ Drinking Water Quality Monitoring Program, the DOH-SDWB will provide for informational meetings to present the monitoring plan.

Comment 15.13b *"The Maui County Council was recently compelled by public outrage to legally ban the use of the Homokuapo wells for human consumption due to contamination with agricultural chemicals. This is a dismal indictment of the state's efforts to protect groundwater quality."*

Response: Maui County drilled the Hamakuapoko wells in 1992 and shut them down because the groundwater was contaminated with agricultural pesticides which included DBCP (1,2dibromo-3-chloropropane), EDB (ethylene dibromide), and TCP (1,2,3trichloropropane) which were allowed for use when applied for use long ago.

Maui County and the Honolulu Board of Water Supply employ granulated activated carbon (GAC) systems to remove pesticides from well water. The carbon in the GAC system absorbs the contaminants from the water, and once absorbed, the chemicals are not easily released. Treated groundwater must meet federal and state drinking water standards which are described in the response above to Lucienne de Naie. The well water can be treated to meet all federal and state drinking water standards. The county made a policy choice to ban the use of the wells, which is its prerogative.

Comment 15.13b *"We request that DOH hold informational meetings on Maui to present the plan to the public prior to the public comment period."*

Response: Public informational meetings are an important part of the review process for the Comprehensive State Groundwater Protection Program Plan. Informational meetings on the Plan will be scheduled accordingly.

Comment 15.*14* *"We request that DOH include priority ranking for TMDLS for all waterbodies included on the 2006 303(d) list. We request that the schedule for completing those TMDLS be developed."*

Response: Priority rankings for TMDLs for all waterbodies included on the 2006 303(d) list appear in Table 8. of the final report. We did not receive any public comments regarding priority rankings for specific waterbodies. Therefore we retained the ranking rationale described in our December 18, 2006 letter, whereby high priority for Total Maximum Daily Loads (TMDLs) development is assigned only to those waterbody/pollutant combinations for which TMDL development is currently in progress.

The schedule for completing those high priority TMDLs is explained on p. 27 of the final report.

Comment 15.15 *"We request that future assessment reports include a section that provides information on the data underlying the assessment. We request that Meta data for data sets used in assessment be included. At a minimum the meta data should include contact information regarding owner of data and where data resides, database software or access needed, geographic area covered, parameters covered, and period of record.*

We request that future assessment reports Include period of record, frequency of monitoring, and summary statistics for data used in the assessment to include: Minimum value, maximum value, mean or geometric mean, number of data points; coefficient of variability, and standard deviation.

We request that DOH move quickly to make environmental data more available to the public via internet, preferably as a searchable database."

Response: DOH recognizes the importance of data management and will continue to explore ways to provide more metadata and summary statistics in the report without making the report too large in overall size. For streams, a data summary table has been included on pg. 21. DOH has determined that a traveling window of 6 years is a representative temporal period. If you would like to see the data grouped for statistical purposes, please contact our offices and we can make the data available to you. DOH is also working on a real-time public access database to allow interested parties to evaluate the data via the Internet. There is currently no timeline available for this project.

Comment 15.16 *"We request that the state revise the state water quality standards to include specific designated uses. This will make the applicability of criteria to a given waterbody clear and unambiguous. We request that the designated uses include use of surface water for drinking water supply. We also request that human health criteria for toxic pollutants be developed for surface waters designated for use as a drinking water supply."*

Response: DOH started the requested revision process by adding a logical framework for making waterbody attainment decisions (for both water quality criteria and designated uses) for the 2006 water quality monitoring and assessment reporting cycle to the final report (p. II-28). Future amendment of the State Water Quality Standards, as well as future revision of water quality monitoring and assessment methodologies and decision criteria, provides the mechanisms for continuing this process. Your comments will be considered as part of the next WQS review, and we invite you to participate.

This comment is also addressed in responses to comments 4.1., 9.3., 11.3., and 19.2.

Commenter 16: Sharyn J. Matin, President, West Maui Preservation Association, email dated Jan. 19, 2007

Comments are the same as those submitted by Commenter 15, Robin Knox of Maui Tomorrow. Please see those responses.

Commenter 17: Sean O'Keefe, Director, Environmental Affairs, Alexander & Baldwin, Inc. Maui, email dated Jan. 19, 2007

Comment 17.1 ***"****Most notably, detailed information regarding the analytical data used to make listing decisions is not included in the draft report, as it was for the 2004 303(d) report (see "Results" section, pages 15 through 23, and Appendix C of the Final 2004 List of Impaired Waters in Hawaii Prepared Under Clean Water Act §303(d)).*"

Response: The format for the assessment report has changed. Although these tables were not required by the guidance documents provided by EPA, we have added Data Summary Tables (Tables 3 and 4) for streams similar to those that were part of the 2004 List. Please see the response to Comment 15.5.

Comment 17.2 *"Other errors or inconsistencies which inhibit meaningful evaluation include the use of the decision code "Ac" throughout the Assessment Decision Table in Part 4 of the report with no definition of this code provided, and apparent inconsistencies between the Assessment Decision Table in Part 4 and Table 3, Detailed Summary of Changes in Part 2 with regard to the 2004 303(d) list. We strongly recommend that the Department revise the report to provide more detailed information regarding listing decisions, and to address errors and inconsistencies, prior to closing the opportunity for public comment."*

Response: DOH corrected the definitions at the beginning of Decision Table and the linkages between the Streams Changes Table (formerly Table 3, now Table 6) and the Chapter IV - Decision Table. We also proofed for errors and inconsistencies. The information and level of detail provided in this report is consistent with the guidance

provide by the EPA. In the future, please refer to any guidance (provided by EPA in odd numbered years) for information of what is expected in the Integrated Report.

Comment 17.3 *"Although the Department noticed the availability of the draft report and provided for a nominal 30 day public participation period, we believe that the opportunity for public comment on the draft report has been inadequate, particularly given the complexity of the document and the major changes entailed by the integration of the requirements of §303(d) and §305(b) into one report. The publication of the notice of availability just days before the Christmas holidays effectively reduced the time available for stakeholders to review and assess the report. Moreover, the Hawaii Continuing Planning Process (DOH; May 1991), which is supposed to guide the water quality planning process, provides for a public comment period of at least 45 days. We therefore strongly believe, and hereby request, that the public comment period should be extended to provide adequate time for interested stakeholders to complete a comprehensive review and evaluation of the report."*

Response: We regret that the public comment period could not be extended due to the pressing nature of our obligation to submit the final report to EPA. We will provide a longer comment period for the next report.

Comment 17.4 *"A&B strongly urges a review of past listing decisions based on visual assessments and delisting of streams for which listing is not supported by other, more reliable water quality data."*

Response: DOH reviews legacy visual listings as soon as there is enough data available. This report is a review of past listing decisions. It is constantly under review. As we acquire more data, we utilize the listing criteria to evaluate the data against the standards. Many visual 'legacy' listings of the past have been confirmed by numeric exceedances of one or more water quality criteria. However, one stream this year will be entirely delisted from the legacy visual listing of turbidity based on newly acquired numeric data.

Comment 17.5 *"Under Hawaii's water quality standards, waters cannot be determined to be impaired for turbidity based solely upon a visual assessment if the visual observation fails to account for the provisions of HAR Section 11-54-4(c). Under this section of the water quality standards, the narrative water quality standard relating to "soil particles resulting from erosion on land" (typically a major contributor to observed turbidity) is deemed met when the land on which the erosion is occurring is being managed in accordance with soil conservation practices or when the discharge is receiving the best degree of treatment or control and the impact on the water body is deemed to be "acceptable". That is, a visual observation of turbidity is not a violation of water quality standards unless it can be shown that the requirements of §11-54-4(c) are not being complied with. To our knowledge, the visual assessments evaluated and considered by EPA contained no information that would allow a determination as to whether the requirements of this section were being met at the time of the assessment. Visual*

assessments that do not consider §11-54-4(c) should not be used as the basis for listing streams as impaired for turbidity."

Response: Visual assessment of turbidity has been used by DOH as a basis for enforcement of the "objectionable turbidity" water quality standards, HAR 11-54-4(a)(3), independently of the narrative water quality criterion relating to "soil particles resulting from ..." Moreover, meeting the requirements of HAR Section 11-54-4(c) merely provides a potentially responsible party with relief from enforcement action under HAR Section 11-54-4(a)(6). It doesn't relieve the DOH of its federally mandated duties to list impaired receiving waters that do not attain the water quality standards and to establish and implement plans for future attainment of those standards. Thus it is during the post-assessment stages of polluted runoff control planning that watershed-specific information about land management, conservation program pursuit, discharge treatment and control, and acceptability of impact to receiving waters becomes most relevant. However, much of this information is only available to the DOH when it is voluntarily submitted by the landowner or land operator. We would appreciate any assistance that can be provided in obtaining this information for current watershed planning areas.

No new determinations of impairment based solely upon a visual assessment were added to the 2006 List of Impaired Waters. At present, legacy visual assessments of turbidity impairment can only be delisted according to the current Listing and Delisting Criteria for Hawaii State Surface Water. In 2006, delistings based on the measured attainment of numeric turbidity and/or TSS criteria include Ukumehame Stream on Maui.

Comment 17.6 *"As in the past, we have serious concerns regarding listing criteria for waters under the 2004 (& 2006) Priority Ranking and Listing/Delisting Criteria for Hawaii State Surface Waters. In some cases, the existing listing criteria allow listing of waters which do not actually exceed water quality standards and should be revised. Specific concerns include:*

Comment 17.6a *"Listing for impairment by conventional pollutants can be based on as few as five water quality samples. A&B believes that data sets of this size do not provide a statistically valid basis for comparison with the water quality standards as they may be widely skewed by the inclusion of one or more samples collected during or soon after large storms. While a minimum sample size of five is consistent with a 1998 recommendation by EPA, EPA's recommendation was based not on whether such a small sample size would provide reliable data, but rather on the limited data then available for analysis and a concern that "use of a larger minimum sample size would result in exclusion of streams from consideration for listing". This is simply not a statistically valid justification for evaluation, and amounts to allowing streams listed based on poor quality data for not other reason than because that is all that is available."*

Response: Although we agree with the commenter that more data is always better, the number of watersheds and financial resources to monitor throughout the state limits

DOH. Enormous personnel and laboratory resources would be required to collect the necessary data that would be required to maintain a higher level of confidence. Now, as in the 1998 listing cycle, we are limited by the amount of data available, so we will continue to follow USEPA recommendations. We will revisit the assessment criteria development process for the 2008 assessment during the summer of 2007. Please submit comments when that document is public noticed.

Comment 17.6b *"For conventional pollutants, Listing Priority 2 allows sample data collected during wet and dry seasons to be combined where there is insufficient data to evaluate the wet and dry standards separately. Water bodies can be listed if (1) the geometric mean of the data (including wet season data) exceeds the dry season standard and a majority of dry season data exceed the dry season standard or (2) the geometric mean of the data exceeds both the wet and dry standards or (3) the majority of sample values in a smaller data set (five to nine samples) exceed the geometric mean criteria by a factor of two or more. In each of these cases, water bodies could conceivably be listed without the geometric mean of the wet or dry season data exceeding the corresponding wet or dry standard – that is, without an actual exceedance of the applicable water quality standard. The wet and dry season standards are separate and distinct standards. In order to determine whether a water quality standard is exceeded, wet season data should be compared to the wet season standard, dry season data should be compared to the dry season standard, and a minimum sample size (at least ten samples) should be established for comparison to each standard.*

Response: The Listing Priority 2 criterion was established to take into account the EPA's requirement to identify waterbodies that are "threatened" and their recommendations regarding sample set size. In practice, there is no case where a waterbody would be listed without an actual exceedance of the applicable water quality standard. For example, please refer to Table 3, page 21. Papaa, Kauai is listed with 10 samples exceeding the TN and NO2-NO3 Dry Standards utilizing 8 dry and 2 wet season samples. For TN, the WQS for dry season is 0.180 mg/l and wet season is 0.250 mg/l. The upper site samples ranged from 0.043 to 0.092 mg/l (wet season sample was 0.043mg/l). The lower site samples ranged from 1.77 to 2.63 mg/l (wet season sample was 1.77 mg/l). We do not apply the 2b (between 5-9 samples) decision rule because although the geomean of the 8 samples was significantly over the twice the standard, there was no majority. The upper site samples were well within attainment. The lower site samples exceeded the standard by 10+ times. It is also significant to note that the 2 wet season samples were lower than the dry season sample values. This decision tree utilizes a yes/no process as found in Figure 1. Although in theory, a waterbody could be listed without an actual exceedance of the applicable water quality standard utilizing limited data, within the next assessment cycle, those limited data segments get targeted for more data collection. The decision is then confirmed, modified or the waterbody is de-listed. In the case of Papaa stream, it is highly likely that this stream is severely impaired between the upper sampling location and the lower site since the data seem to indicate significant addition of pollutants are being introduced to the stream.

Comment 17.6c *"For comparison with the "ten percent of the time" and "two percent of the time" criteria, DOH requires a minimum of 100 and 500 samples, respectively, for Listing Priority 1 or 50 and 250 samples, respectively, for Listing Priority 2. These standards are intended to allow for exceedances of the "geometric mean" standards for relatively short periods of time due to large rainfall events, when larger pollutant concentrations in streams are unavoidable. Appropriately, the listing criteria require significant data sets for comparison with these standards in order to ensure a reliable assessment of the data. However, if one were to evaluate whether a stream was meeting the numerical water quality standard for a total suspended solids over the six month wet season, it could reach 50 mg/L ten percent of the time and 80 mg/L for two percent of the time but would have to meet the "geometric mean not to exceed" standard for the remaining 90 percent of the time. Although some statistical variance is allowed for by use of a geometric mean, it would seem that the size of the data set used to evaluate compliance with the standard which applies ninety per cent of the time should be comparable to the size of the data set required to evaluate compliance with the "ten percent of the time" and "two percent of the time" criteria. As such, a minimum sample size considerably larger than is specified in the listing criteria would appear to be appropriate. A single anomalously high data point (such as might be collected during a large storm) may so skew the geometric mean of a small data set as to suggest impairment even where the criteria applicable to storm events (i.e., the "ten percent of the time" and "two percent of the time" criteria are never exceeded)."*

Response: DOH has historically not applied the 10% or 2% rule for water quality assessment decisions. In reality, the geomean method tempers the skewing of the data set by large anomalous data points. For interested parties, DOH has included Table 5 on page 25 that applies these rules on Priority 1 (greater that 10 season-specific) data sets. The results were quite interesting. Some streams did not have an exceedance of geomean but did have more than 2 instances of exceedance of the 10% or 2% values. However, in general, the 10% and 2% value exceedance agree with the Standard geomean exceedance method. For this assessment cycle, we did not utilize the 10% or 2% since the Listing Criteria specifically mentions the size data set required and we did not have such data sets.

Comment 17.7 *"A large number of streams included on the proposed 303(d) list are listed either solely or partly due to reported impairment by turbidity; many based on visual assessments only. … We believe strongly that a review and revision of the State WQS for turbidity is necessary in order to prevent the continued listing of streams for turbidity levels that exceed the current standard but are in fact not indicative of actual water quality impairment."*

Response: DOH **must** maintain any previously listed waterbody until enough data are obtained to apply the appropriate criteria for decision-making. While waterbodies may be listed by application of the listing criteria for priority 1 and 2, to be delisted, data must satisfy Listing Priority 1 criterion requirements.

Please note that while we agree that review of the turbidity criteria is in order, some of the existing stream turbidity criteria are validated by their measured attainment in numerous waterbodies for the current monitoring and assessment reporting cycle.

Comment 17.8 *"Some "streams" are listed as impaired even though they are ephemeral streams that are normally dry except during large storm events."*

Response: Please see response 11.3 and 11.4 for discussion on ephemeral streams.

Commenter 18 Alan Takemoto, Executive Director, Hawaii Farm Bureau, fax dated Jan 19, 2007

Comment 18.1 *"…every possible effort should be made to ensure that when the decision is made to list a waterbody, it is (a) based on water quality standards that are meaningful and scientifically supported and (b) based on appropriate and adequate sampling."*

Response: The meaningfulness of and scientific support for the water quality standards is documented in and ensured by the technical rationales and other administrative records supporting the ongoing promulgation of these standards. The appropriateness and adequacy of sampling is documented in the packages of data that are readily available for our use in making water quality assessment decisions and is ensured by the comparison of these data packages with the Listing and Delisting Criteria for Hawaii State Surface Waters. The water quality standards are reviewed and revised (as appropriate) on a three-year cycle and the water quality assessment decision criteria are reviewed and revised (as appropriate) on a two-year cycle.

This comment is also addressed in responses to comment 13.2.

Comment 18.2 *"In fact, those listing based on violations of the current turbidity standard should be removed immediately and re-evaluated at such time as an appropriate standard is in place."*

Response: This assessment report only evaluates data against the existing standards. The issue of a proper Water Quality Standards (WQS) for turbidity or any other WQ parameter should be considered during the next WQS rule review cycle.

Comment 18.3 *"…we continue to object to the listing of streams for which only "visual assessment" provides the basis for the listing. This is scientifically unsound and only serves to call into question all listing decisions made by the Department."*

Response: DOH **must** maintain any previously listed waterbody until enough data are obtained to apply the appropriate criteria for decision-making. While waterbodies may be listed by application of the listing criteria for priority 1 and 2, to be delisted, data must satisfy priority 1 criteria requirements. Review of past listing decisions based on

visual assessments is underway, as we collect more data for these streams. No streams were added to this year's list based solely on visual assessments, and some components of visual assessment listings were delisted based on their measured attainment of numeric water quality criteria.

Comment 18.4 *"HFBF respectfully requests that rather than expend Departmental energy on adding new waterbody impairment listing at every assessment, the focus should be on working with the scientific and regulated community to promulgate appropriate and meaningful standards that can be used to rationally assess the health of the State's waters. The consequences of ignoring this as a prerequisite to any listing is the inevitable eventuality that all of Hawaii's waterbodies, regardless of the scientific reality, will be considered unhealthy and impaired."*

Response: The Clean Water Act requires states to review and revise (as appropriate) their water quality standards on a three-year cycle and to make waterbody impairment decisions on a two-year cycle. Balancing these requirements in conjunction with limited State resources and shifting EPA priorities is an ongoing challenge. Please continue to provide us with scientific and regulatory information and knowledge that can help to meet these requirements, and identify any HFBF resources that might be available to help us meet these challenges.

Please note that the appropriateness and meaningfulness of some of the existing standards is validated by the measured attainment of various water quality criteria in numerous waterbodies for the current monitoring and assessment reporting cycle.

Commenter 19 June F. Harringan-Lum, Ph.D, email dated Jan 19, 2007

Comment 19.1 "*Part 1 - Marine Waters: part 1 opens with the sentence "Overall, the quality of the waters of the State is very good." However, the Report goes on to state that of a total of 534 coastal water bodies tallied (how? is this the number of watersheds delineated in the State?), 219 out of 264 coastal water bodies with adequate data have been listed for at least one pollutant. Because 219/264 = 82.9 per cent of coastal waters assessed for this Report have been listed, there can be no logical argument made that "the quality of the waters of the State is very good," especially since much of the measured pollutant load, including bacteria, derives from the adjacent watershed. If the true percent of assessed and unpolluted marine waters is 100-82.9 = 17.1%, then, using the ranking scale 0-20%="poor"; 21-40%="fair"; 41-60%="good"; 61-80%'"very good"; and 81-100% = "excellent" places Hawaii's coastal waters in the "poor" category. In other words, there needs to be a rational connection between data analysis and judgment of the results. The beginning sentence should read, "On the basis of available data, the quality of the marine waters of the State is ranked as poor".*

Response: Thank you for your comments, it will further our efforts to produce a quality document. Regarding your comment #1, the introductory paragraph has been removed.

Comment 19.2 *"I urge staff to start the process of connecting the numerical and narrative Water Quality Criteria to designated stream uses listed in HAR Chapter 11-54, Water Quality Standards."*

Response: DOH started this process by adding a logical framework for making waterbody attainment decisions (for both water quality criteria and designated uses) for the 2006 water quality monitoring and assessment reporting cycle to the final report (p. I-28). Future amendment of the State Water Quality Standards, as well as future revision of water quality monitoring and assessment methodologies and decision criteria, provides the mechanisms for continuing this process.

This comment is also addressed in responses to comments 4.1, 9.3., 11.3., and 15.16

Comment 19.3 *"Part 3 - Groundwater: Hawaii's groundwater is in generally good condition, but many potentially toxic chemicals are not included in the State and Federal drinking water standards. Protecting groundwater is a result not only of standards assessment but of keeping up with the toxic status of many new dissolved chemical contaminants and is an ongoing process. The Report should mention the dynamic nature of protecting groundwater sources of drinking water from toxins."*

Response: We agree that protecting groundwater is a result not only of monitoring existing requirements but of keeping up with the toxic status of many new dissolved chemical contaminants, and this is an ongoing process that is dynamic in nature. The state and federal governments are working on this issue.

To meet this challenge, several activities at the Federal and State level are being developed or implemented. The EPA is currently examining the status and health/environmental issues dealing with emerging environmental contaminants through the Unregulated Contaminants Monitoring Rule (UCMR2), the Contaminant Candidate List (CCL), and studies that look at the presence of endocrine disruptors, pharmaceuticals and household products in our water supplies. The DOH SDWB staff is working with the Hawai`i Department of Agriculture and the University of Hawai`i on initial projects designed to: (1) test drinking water/ groundwater quality on O`ahu (to be expanded to the other islands) for four new and emerging pesticides being used in the State; (2) test for historical pesticide contaminants (Atrazine and its breakdown compounds, Bromacil and Hexazinone) that have been previously detected in groundwater wells that are not part of the routine drinking water monitoring program; and (3) expand the Pesticide Leaching Model to also include non-pesticides. The Pesticide Leaching Model employs geographic information system (GIS) to incorporate soil hydrologic information and a pesticide property database to predict the leaching potential of a pesticide.