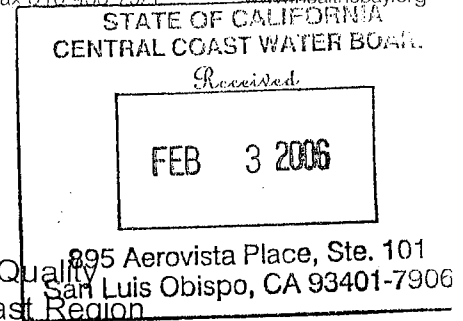


# Heal the Bay

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January 30, 2006

Director Alexis Strauss  
U.S. Environmental Protection Agency,  
Region IX, WTR-5  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Chair Jeffrey Young  
California Regional Water Quality  
Control Board, Central Coast Region  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401-7906

Re: Re-issuance of the 301(h) Waiver for the Morro Bay-Cayucos Sewage Plant

Dear Director Strauss, Chair Young, and Members of the Board,

At the request of the Natural Resources Defense Council (NRDC) I reviewed the EPA tentative decision and Regional Water Quality Control Board (Regional Board) fact sheet, as well as other relevant materials, related to the re-issuance of the Clean Water Act 301(h) waiver for the Morro Bay-Cayucos Sewage Plant (Plant). Overall, it is my opinion that the data referenced by EPA and the Regional Board are insufficient to support their conclusions that the Plant's discharge poses no potential health risk to people who use nearby waters for recreational purposes. Equally important, 2004-2005 data show that beach water quality in many instances did not meet applicable standards for fecal indicator bacteria, thus demonstrating that the area's beach water quality has not been exemplary as claimed in the documents. The pattern of water quality violations undercuts contentions that any water quality violations related to recreational use is caused only by storm water.

## BACKGROUND AND QUALIFICATIONS

In evaluating the 301(h) waiver application and materials, I applied my experience of over 15 years in the field of beach water quality monitoring and impacts on human health and the environment. I created the California Beach Report Card in 1990, which is published by Heal the Bay. The Beach Report Card provides a comprehensive analysis of California water quality statewide for over 430 beaches in an easy-to-understand format (A-F letter grades). The Beach Report Card is based on the routine monitoring of beaches conducted by local health agencies and dischargers. Water samples are analyzed for bacteria that indicate pollution from numerous sources, including fecal waste. The higher the grade a beach receives, the lower the risk of illness to ocean users.

As part of my doctoral dissertation from the University of California, Los Angeles, I co-authored a series of studies on the fate and transport of fecal indicators and viral pathogens at Santa Monica Bay beaches. Shortly thereafter, I co-authored the

epidemiology study examining the health risks of swimming in Santa Monica Bay. This study was one of the first in the nation to research these impacts and functioned to reorient public health policy on beach water quality regulations in California. I also co-authored AB 411 on beach water quality standards and monitoring and reporting requirements for California. In addition, I co-authored the Clean Beach Initiative which is providing \$78 million to clean up California's most polluted beaches. I am currently a member of the Clean Beach Task Force, which is a technical advisory body to the State Water Resources Control Board. I have attached a copy of my curriculum vitae, which fully describes my academic and professional qualifications and experience.

## EVALUATION AND ASSESSMENT

### *Evaluation of Beach Monitoring Data*

The current bacteria data from Heal the Bay's beach report card (some, but not all, of which is cited by the Regional Board) demonstrates that water quality standards for fecal indicator bacteria (FIB) were exceeded 15 percent of the time during the 2004-2005 monitoring year (April 2004 to March 2005) at Morro Bay City Beach (projection of Atascadero Road), *i.e.*, Atascadero Beach. During wet weather, 45 percent of samples exceeded beach water quality standards, and during dry weather, 7 percent of samples exceeded these same standards.

In addition, in the 2004-2005 season, Atascadero Beach received an "F" grade for wet weather and a "B" grade for dry weather. During the 2002-2003 and 2003-2004 seasons, the Atascadero Beach received straight "A's" in dry weather and "A+'s" in wet weather. Based on my experience analyzing similar data, it is my opinion that this sort of variation suggests influences beyond seasonal storm water discharge. Such influences could include the Plant's effluent.

### *Evaluation of Monitoring Design and Information Relied on by EPA and the RWQCB*

My most basic criticism of the EPA and the Regional Board's decision documents/staff reports is that they do not provide the full information needed to assure that the Plant's effluent allows for the maintenance of water quality that supports recreational uses. First, neither the tentative EPA decision document nor the Regional Board staff report adequately evaluates current bacteria data at beaches adjacent to the outfall. Second, because EPA and the Regional Board have apparently not required or reviewed the type of monitoring information that is necessary and regularly considered in these circumstances, EPA and the Regional Board cannot provide an unqualified clean "bill of health."

These omissions are particularly glaring in light of the location of the outfall: it is only one half mile offshore and less than 20 meters in depth. By contrast, outfalls for most plants in southern California are much further offshore (3 to 5 miles) and at least 60 meters in depth. For instance, the Los Angeles Joint Water Pollution Control Plant was

required to chlorinate because its plume was regularly coming to shore. Its outfall is 1.2 miles off shore and discharges at 60 meter depths. Also, Pt. Loma had to build a deep ocean outfall 4 miles offshore because of plume fate and transport issues.

With respect to the effluent from the plume, EPA and the Regional Board do not refer to monitoring information that would allow them to determine if the Plant's effluent plume comes back to shore and poses a potential health risk to the public. In particular, there is no description of any thorough, recent plume tracking study. Generally, in order to be certain that a plume does not impact the beach, a comprehensive plume study is conducted that accounts for varying conditions of season, current, swell height, and temperature. Second, it is unclear whether the salinity monitoring program provided information on plume fate and transport. Third, there is no indication that monitoring occurs under variable tidal conditions.

Fourth, most POTW and public health beach monitoring programs sample at ankle depth, a "worst case" exposure scenario chosen to protect young children. In contrast, the Plant's monitoring program is designed to collect samples as far seaward as possible—an approach that I have never heard of in monitoring recreational water quality. The surf-zone receiving water monitoring program is designed to detect low bacteria densities. High bacteria densities are most often found in ankle-deep water on a receding high tide. The FIBs are often at highest densities at the water's surface, and the highest surface-to-volume ratios in the water column occur at shallow depths (ankle-deep). Also, high FIB densities are associated with sewage effluent and contaminated runoff—both are freshwater, warm temperature sources that float to the surface, so the signature of the plumes is most apparent on the ocean's surface. The Plant's monitoring program is not designed to sample the ocean's surface, which decreases the chances that their monitoring efforts will detect the plume.

Yet another monitoring concern is the Plant's decision to conduct only vertical profiling without sea surface samples. As is generally accepted, plumes rise to the surface, and thus the worst water quality is likely to be at the diffuser and at the sea surface.

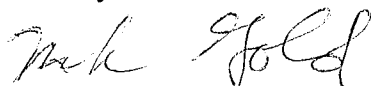
Furthermore, no data was provided on bacterial densities in mussels. As filter-feeders that are prevalent in the area, mussels should have been analyzed for fecal indicators. As Mr. Young can attest to based on his experience in Santa Barbara, mussels bioconcentrate fecal bacteria in their tissues and can often have high FIB densities even when routine monitoring programs do not detect high densities.

Equally important, the data provided did not include enterococcus, EPA's preferred fecal indicator. Enterococcus is preferred by EPA because of its proven association with gastroenteritis (nausea, fever, and diarrhea) in numerous epidemiological studies including EPA's epidemiology studies in the late seventies and early eighties and the Santa Monica Bay epidemiology study. It is unclear why this data was not provided given that under AB 411 and the California Ocean Plan, enterococcus monitoring has been required for beaches and receiving waters for well over five years. In fact, Heal

the Bay's Beach Report Card includes enterococcus data from the health department, and the enterococcus standard was exceeded frequently over the 2004-05 year. Thus, even though the draft Permit requires testing for this indicator in the future, the lack of enterococcus information in the current application is neither explained nor excused.

Given the recent poor water quality at local beaches, the incomplete data referenced by EPA and the Regional Board, and the Plant's flawed monitoring program, in my expert opinion, I recommend that EPA and the Regional Board deny the 301(h) waiver. The discharger has failed to demonstrate that its plume is not posing a health risk in receiving waters. I would be pleased to discuss my evaluation and comments I have given. Please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Mark Gold". The signature is written in dark ink and is positioned below the word "Sincerely,".

Dr. Mark Gold

**MARK GOLD, D.Env.**  
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Santa Monica, CA 90405  
h) (310) 392-7947 or w) (310) 453-0395 x119

## **EXPERIENCE**

### Executive Director at Heal the Bay (6-94 to present)

Oversee advocacy, legislative, research, and education programs for the successful environmental group. Set priorities and help create strategic plan and implementation strategies for the organization on issues, programs, communications, development, education and finance. Chief administrator for the organization. Develop and oversee annual budget of \$3.6 million. Primary spokesperson for the organization to the media, environmental agencies, elected officials and at conferences. Responsible for meeting yearly fundraising goals of \$3.6 million. Manage a staff of 43. Responsible for the acquisition of the Santa Monica Pier Aquarium (formerly the UCLA Ocean Discovery Center. Until 2004, maintained responsibilities as the organization's Science and Policy Director (see below). Principle negotiator for the organization on a wide variety of issues including the Los Angeles County's Municipal Storm Water Permit, numerous Total Maximum Daily Loads, contaminated sediment issues, and California and National Bathing Water Standards issues. Helped author state legislation including AB 411, AB 538, AB 2019, AB 1548, SB 72 and AB 1186. Chaired statewide workshop on contaminated sediments in 1997 and conference on Urban Storm Water Best Management Practices for the South-West United States in 1998.

### Professor at UCLA (11/97 – 3/98)(12/01 to 4/02)

Visiting Professor at the School of Public Health. The graduate level class focused on coastal pollution problems and their potential solutions. Course material covered the regulatory acts (the Clean Water Act, National Environmental Protection Act, the Porter-Cologne Act, California Environmental Quality Act, and the California Coastal Act), regulatory agencies associated with those Acts, and water quality problems facing California's coast from point and non-point sources, oil, and development. Taught an extension course on watershed management in 2005.

### Science and Policy Director (9/88 - 6/94)

Provided technical support for the environmental public interest group. Responsibilities included: Analyzed EIRs/EISs, discharge permit applications, consistency determinations, and local, state and federal regulations; completed field research and supervised the preparation of the organization's technical reports; managed technical and programmatic staff; wrote and presented testimony for public hearings at the State and Regional Water Boards, California Coastal Commission, City Councils, the State Legislature and in front of other agencies; technical review of all of the organization's publications, educational materials, and press releases; provided technical support to Heal the Bay and other environmental groups on source reduction, water quality treatment management strategies and technologies, watershed management strategies, water quality regulatory compliance issues, and the toxicological and ecological impacts of water pollution on humans and aquatic life; decided on and implemented issues agenda; reviewed

grants; created educational programs for the organization; served as a spokesperson for the organization to the media; co-author, comment and testify on proposed water quality and natural resources legislation; researched and wrote position papers; exchanged information and worked cooperatively with elected officials, engineers, scientists and agencies that work on coastal issues. Developed Heal the Bay's Beach Report Card.

Environmental Consultant at Engineering Science Inc. (10/86 – 3/88)

Involved in the preparation of EIRs and environmental assessments. Primarily involved in writing the biological and water quality sections. Projects included: Development at Ballona Lagoon and Ormond Beach wetlands and the L.A. city urban runoff characterization study.

**EDUCATION**

- UCLA - D. Env., Environmental Science and Engineering: June, 1994
- UCLA - M.A., Biology: June, 1986
- UCLA - B.S., Biology: June, 1984

**RESEARCH PROJECTS**

Principal Investigator on a study of the PCB and DDT contaminant levels in commercially sold white croaker. Included in the study was a cancer risk assessment, an analysis of the current regulatory framework on contaminated fish, and numerous recommendations to reduce the cancer risks to the population consuming white croaker.

Investigator on an epidemiological study of the possible adverse health effects of swimming in the urban runoff contaminated waters of Santa Monica Bay. The study was completed under the auspices of the Santa Monica Bay Restoration Project. 6-94 to 5-96. In Epidemiology 1999. Haile, R., Witte, J., Gold, M. et al.,

Coauthor of a 1998 paper in Marine Science Bulletin on developing a fish contamination monitoring program for Santa Monica Bay.

Principle investigator on a series of storm drain and surf zone pathogen studies completed under the auspices of the Santa Monica Bay Restoration Project. 6-88 to 6-92.

Co-author of a comprehensive study on the use of oxidants for drinking water treatment for the Journal of the American Water Works Association. Summer 1988.

Co-author of a comprehensive study for the State Water Resources Control Board on the sources, fate, transport, aquatic toxicity and possible biological impacts of exposures to six chlorinated organics in the environment. Fall 1987 - Spring 1988.

Co-author of a paper entitled, "Current and Prospective Quality of California's Ground Water" presented at the 16th Biennial Conference on Ground Water. Summer, 1987.

## **MEMBERSHIPS**

Member of the California Oceans Science Trust; Vice Chair of the Santa Monica Bay Restoration Commission (SMBRC), member of the SMBRC Watershed Council and Technical Advisory Committee (TAC); member of UCLA School of Public Health Hall of Fame; Durfee Fellow; member of USC Sea Grant Advisory Board; member of the City of Los Angeles Citizen's Oversight and Advisory Committee for the \$500 million bond measure - Proposition O; member of the Palos Verdes Superfund Site Technical Advisory Committee; Member of the NOAA Natural Resources Damages Technical Advisory Committee for the Palos Verdes shelf. Chair of the City of Santa Monica's Environmental Task Force; Member of the City of Malibu's Environmental Review Board; Member of the Los Angeles Regional Contaminated Sediment Management Committee and Technical Advisory Committee; Member of California's Beach Water Quality Task Force and the Clean Beaches Task Force; Member of the Advisory Board for the Environmental Media Association; Member of the Malibu Creek Watershed Advisory Committee. Prior member of the of the Environmental Protection Agency's Urban Wet Weather Federal Advisory Committee and Beach Advisory Group, the Regional Water Board's Groundwater Technical Advisory Committee and the Technical Review Committee for Surface Water;

