CALIFORNIA OCEAN PROTECTION COUNCIL

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MEMORANDUM

TO: Ocean Protection Council

FROM: Doug George, Project Manager

DATE: November 30, 2009

RE: Panel discussion on addressing toxins and marine debris

OPC staff have assembled a panel of experts to:

1) Inform the Council on the Green Chemistry Initiative and the Department of Toxic Substances Control-OPC collaborative activities
2) Highlight results of Contaminants of Emerging Concern Workshop and discuss next steps with Blue Ribbon Panel on Contaminants of Emerging Concern in Recycled Water
3) Suggest ways that the Council can support efforts on water quality issues (marine debris, pollution)

Introduction

This panel will showcase the efforts of multiple state agencies to improve water quality in California's coastal waters. Ocean and coastal water quality is one of the six broad categories for action in the 2006 OPC Strategic Plan. Some of the objectives in this category include support for the enforcement of pollution controls; development of new technologies and approaches to reduce nonpoint source pollution; improvement of water quality testing programs and warning systems; and reduction of ocean and coastal debris. The OPC has taken action on these items through supporting agency efforts, resolutions, workshops, partnerships, and projects.

The OPC seeks to understand and reduce the chemical, biological, and physical waste that gets to the ocean. In particular, the marine debris resolution (adopted in 2007) called for a plan to be developed for a phased ban on six toxic chemicals found in plastic packaging. These chemicals represent potential harm to the ocean environment through direct leaching into the water and/or transport by marine debris to far reaches of the ocean. Two studies, funded by the OPC, aim to identify gaps in knowledge and generate a more comprehensive list of chemicals of concern. The first, by Office of Environmental Health Hazard Assessment (OEHHA), will produce toxicological profiles on three chemicals (bisphenol-A (BPA), nonylphenol (NP), and di-2-ethyl hexyl phthalate (DEHP)). The second, by an academic researcher at CSU Chico, will identify all chemicals found in plastics. These studies are undergoing final reviews.

In addition to OPC actions, the California Environmental Protection Agency (CalEPA) is implementing programs to improve water quality. The Department of Toxic Substances Control (DTSC) is developing the Green Chemistry Initiative and the State Water Resources Control Board (State Water Board) is addressing contaminants of emerging concern (CECs) and establishing standards for litter in California's waterways through stormwater permits and trash total maximum daily loads (TMDLs).

Green Chemistry

CalEPA and DTSC began developing the Green Chemistry Initiative (GCI) to address a broader charge by Governor Schwarzenegger to reduce eliminate or reduce the use of toxic substances in products. In December of 2008, CalEPA released the *California Green Chemistry Initiative - Final Report*. As noted by CalEPA Secretary and OPC Council Member Linda Adams in the report, the GCI sets forth six recommendations that are aimed at accelerating California's move toward a clean, green, sustainable economy. Three of the recommendations are:

- Create an online toxics clearinghouse, an online database of chemical toxicity and hazards populated with the guidance of a Green Ribbon Science Panel to help prioritize chemicals of concern and data needs.
- Accelerate the quest for safer products, creating a systematic, science-based process to evaluate chemicals of concern and alternatives to ensure product safety and reduce or eliminate the need for chemical-by-chemical bans.
- Move toward a cradle-to-cradle economy, establishing a California Green Products Registry to develop green metrics for a range of consumer products and encourage their use by businesses.

Based on the GCI report and landmark green chemistry legislation (AB 1879, Feuer, 2008 and SB 509, Simitian, 2008), DTSC is working, in consultation with other agencies and environmental and business organizations, to develop regulations by December 31, 2010. These regulations will establish a scientifically-based decision-making framework to evaluate chemicals of concern in products sold in the state and to prompt manufacturers of those products to use less toxic alternatives. This first-of-a-kind program will lead to products that are "benign by design." This regulation will change the paradigm for how California regulates chemicals of concern in products. Because of the overlapping interests of the OPC and DTSC to improve ocean health, the two agencies began to collaborate in September 2009. The collaboration encourages exchanges of information, shared outreach activities, and coordinated science review.

Also based on the initiative, OEHHA will be implementing its portion of the landmark 2008 green chemistry legislation to develop an online toxics clearinghouse that will fill the chemical information gaps and ensure that hazard trait and toxicity data is made publicly accessible, consistent with the law. This clearinghouse will improve the ability of businesses, government and consumers to make better decisions that lead to safer choices.

Contaminants of Emerging Concern

There are a number of efforts underway to address contaminants of emerging concern in our waste stream and waterways. As a result of a request by OPC Council Members, the OPC, Ocean Science Trust, Southern California Coastal Water Research Project (SCCWRP) and several other co-sponsors, organized a workshop titled "Managing Contaminants of Emerging Concern (CECs) in California," in April 2009 in Costa Mesa. The workshop convened 50 scientists, water quality managers, and stakeholders to enhance communication and formulate a plan for integrating science into an effective CEC management strategy. The workshop was devoted to approaches and recommendations on CECs in California; state agencies that attended included the State Water Board, DTSC, Department of Public Health, State Coastal Conservancy and OEHHA. The participants concluded that the creation of a single master list of CECs to address was unlikely and instead, the logical next step is to formulate preliminary lists of priority CECs, indicator compounds, and surrogate parameters to address the investigative monitoring goals for water quality. To develop such lists of priority CECs, a Blue Ribbon Panel on Contaminants of Emerging Concern in Recycled Water (Blue Ribbon Panel) of six experts was convened to conduct a 9-month review of existing data and produce a final report in May 2010 to guide the state in addressing CECs with implications for human health. Following their final report, the panel will be charged to investigate CECs with implications for discharge to ambient waters and produce a second report in 2011. This second investigative effort is being funded by the Packard Foundation.

The State Water Board has been actively partnering since 2007 with the National Oceanic and Atmospheric Administration (NOAA) and the Southern California Coastal Water Research Project (SCCWRP) to strengthen and expand the National Mussel Watch program in California. Mussels are efficient accumulators of pollutants, and Mussel Watch takes advantage of this to give us spatial and temporal information about bioaccumulative pollutants. Mussel Watch samples naturally occurring native ("resident") mussels at various places along the coast and analyzes the tissue for a suite of chemical contaminants. This State/Federal Mussel Watch partnership successfully expanded the number of sites on the coast of California from 42 in 2007 to 67 in 2009. Information from this program will provide a baseline database to track changes as strategies are emplaced to address CECs.

Keeping Trash Out of the Ocean

One of the recommendations in the OPC Implementation Strategy to Reduce and Prevent Ocean Litter is to ensure that municipalities prevent litter from entering the storm drain system. The Regional Water Quality Control Boards (Water Boards) have two methods to address water-borne trash loads. The first is through a municipal regional stormwater permit. In October 2009, San Francisco Bay watersheds received a single permit that incorporates trash reduction. The second is to develop Total Daily Maximum Loads (TMDLs) to address various water quality concerns in specified water bodies. A landmark Trash TMDL went into effect in September 2001 for the Los Angeles River and Ballona Creek and Estuary.

The Trash TDMLs were established based on existing water quality standards that prohibit floating, suspended and settleable materials that cause nuisance or adversely affect beneficial uses. Trash TMDLs prohibit the discharge of trash (typically over a multi-year implementation phase) and require the Water Boards to issue permits that implement the trash discharge

prohibition. The TMDLs for the Los Angeles and Ballona Creek watersheds include an implementation schedule that requires 10% reduction per year for 10 years. The Los Angeles Regional Board is planning to revise the Los Angeles County municipal stormwater permit in December to incorporate the Trash TMDL requirements. The State Water Board is also considering a statewide trash policy that will be entering public review in January 2010 for possible adoption in summer 2010. These regional and statewide efforts have set goals to eliminate litter delivery to coastal and ocean waters, which would reduce chemical loads in the marine environment.

Next Steps

The OPC role to date has been to support research on chemicals and convene meetings of experts with decision makers. OPC funds are being used to fill gaps in knowledge regarding chemicals in plastic and compiling existing knowledge about the effects of suspected chemicals of concern. Continuing to support this type of research will be imperative, although current fiscal conditions prevent any near-term investments. As this research concludes, the OPC can shift to promote Green Chemistry as a vital component to improving water quality and reducing marine debris.

OPC and DTSC staff met in August 2009 to discuss how the OPC can engage with DTSC to support the goals of GCI. The leadership on water quality and marine debris the OPC has shown would provide credibility to the GCI while accomplishing the OPC objective of improving the health of the ocean environment. The results of the Chico study will inform the OPC and DTSC on potential chemicals of concern found in plastics. These chemicals may also inform preliminary lists of CECs that the Blue Ribbon Panel will produce in its second report.

Several key agencies have started working together on CECs since the April workshop. The SWRCB is coordinating these activities among DTSC, SCCWRP, and DPH. In addition, there is an opportunity for coordinated activities on CECs with federal partners such as the U.S. EPA and NOAA to optimize efforts by the state.

The OPC is in a unique position to increase the visibility of and support the many efforts to address toxins in the marine environment. The activities by DTSC on Green Chemistry, and the Water Board and NOAA on CECs should lead to consumer products that will have lessened impacts on the ocean ecosystem. By directly eliminating and reducing harmful chemicals in our waterways and in items that may become marine debris through littering, these activities will leave a legacy of a healthier ocean.

Panel Members

Representatives from the following agencies will participate in an educational panel on Green Chemistry, CECs and marine debris:

1. Maziar Movassaghi, Acting Director, Department of Toxic Substances Control
2. Dr. Margy Gassel, Scientist, Office of Environmental Health Hazard Assessment
3. Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board
4. Dr. Stephen Weisberg, Executive Director, Southern California Coastal Water Research Project

5. Dr. Jörg Drewes, Associate Professor, Colorado School of Mines and Chair of the Blue Ribbon Panel on Contaminants of Emerging Concern in Recycled Water
6. Dr. Sandra O'Neill, Research Biologist, National Oceanic and Atmospheric Administration