



**DEPARTMENT OF THE NAVY**  
COMMANDER NAVY REGION SOUTHWEST  
937 NO. HARBOR DR.  
SAN DIEGO, CALIFORNIA 92132-0058

Storm Water Panel Report  
Deadline: 8/4/06 5pm

IN REPLY REFER TO:  
5090  
Ser N45JCR.bg/0259  
July 20, 2006

Ms. Song Her  
Clerk of the Board, Executive Office  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

Subject: COMMENT LETTER STORM WATER PANEL REPORT

Dear Ms. Song Her:

On behalf of Navy installations in California, we have reviewed the storm water panel's findings and recommendations on numeric limits and offer the following comments on the report. We understand and appreciate the Panel's difficulty in determining the feasibility of developing objective numeric limits for industrial storm water runoff. We strongly agree with the Panel's general finding that supports the use of scientific methods and data to derive numeric limits. However, we believe the finding that numeric limits are feasible for "some industrial categories" is inexplicably ambiguous. We also believe that the report's limited justification, which is based on a single statement: "They control access, construction practices, product substitution to affect pollution prevention and the types of treatment systems to be used to mitigate [stormwater] runoff." is a drastic oversimplification. More importantly, the Panel's own "reservations and concerns", in particular, the inadequacy of current monitoring data sets and lack of consideration of total economic impact, overwhelmingly counters their simplified justification. Hence, we cannot support the Panel's conclusion that numeric limits are feasible for industrial storm water runoff.

Large industrial facilities such as Navy bases, can comprise thousands of acres, and have hundreds of storm water outfalls. They support a large range of commingled industrial and non-industrial activities that are as varied as any found in an urban setting including, for example: paint booths, residential housing, equipment staging areas, recreation centers, roads, and parking lots. While Navy commands have some control and influence over their tenants and contractors, similar to a city council or a mayor, they cannot dictate and control all aspects of those activities. Navy commands must weigh the time and costs of completing mission essential requirements with practices that may potentially mitigate contaminant levels in storm water.

We concur with the Panel's concerns regarding the inadequacy of storm water monitoring datasets. To go a step further, we are also concerned that there is an inadequate use of science in developing monitoring methods and datasets that promote knowledge of storm water impacts on



receiving waters. The development of numeric limits or any other compliance requirements must be based on an overall goal of ensuring attainment of beneficial uses. Therefore full consideration must be given to obtaining receiving water data that will be useful for that goal. Hence, the application of compliance requirements must be applied on a site-specific (waterbody) basis and consider the impact from each type of discharger (municipal, construction, and industrial) when formulating protective limits. These limits can only be formulated with sufficient monitoring and receiving water data.

Storm water quality variability was cited by the Panel as an issue of concern for why municipal storm water monitoring is infeasible. However, the same factors that affect municipal storm water quality equally affect industrial settings. For example, antecedent dry periods, storm event frequency and intensity, run-on, atmospheric deposition, the types of impervious surfaces at the facility, and pollutant characteristics are just some of the factors that cause observed variability from facility to facility and even from outfall to outfall at a single facility. If variability and the ability to monitor it sufficiently are considered problematic in setting numeric limits for municipalities, it must also be considered problematic for industrial facilities as well.

The Panel was correct in citing total economic impact as a reason for concern in setting numeric limits for industrial dischargers. The potential additional costs for compliance with numeric limits can have a direct affect on the overall economy by driving businesses out of California or in the case of the Navy could result in moving some ship repair/maintenance work impacting the local shipyards, their subcontractors and suppliers. The cost to the Navy for installing systems to comply with the numeric toxicity limit imposed by the SDRWQCB storm water permits in San Diego is estimated at a staggering \$312 million, and does not include operation and maintenance costs. These costs were not considered by the SDRWQCB when formulating its requirements.

The current storm water permits for San Diego Naval facilities that contain a numeric limit for toxicity are an excellent example of numerical limits placed on an industrial discharger without consideration for the science or costs associated with them. Faced with what the Navy determined was a requirement that had no scientific merit and was overly conservative for protecting beneficial uses, the Navy asked for and was granted a four-year period to provide a scientific study of the issue. The study used sound scientific methodologies to measure toxicity levels in storm water (end-of-pipe) as required in the permit, as well as in receiving waters during rain events to identify if storm water runoff was causing toxicity in the receiving water. The study results showed that toxicity measurements made on end-of-pipe storm water samples overestimated the exposure conditions in the receiving water and thereby greatly exaggerated the potential toxic impact to marine life. Thus,

this misapplication of a numeric limit on toxicity would result in the need for the Navy to capture and treat its storm water at a cost upwards of \$300 million with no demonstrated benefit on toxicity impacts in the water body of concern compared to a less stringent standard.

Not only did the Navy study show that industrial discharges could not meet the non-scientifically derived numeric limit on toxicity, but the Navy also evaluated the impacts of numeric limits if applied to urban runoff. A Navy contractor analyzed the toxicity of parking lot runoff in San Diego at 9174 Sky Park Court, which provides employee and customer parking for a private company and state government offices, and is a typical business office park that would be found in any municipality. These samples (end-of-pipe) also failed the toxicity requirement indicating that the numerical limit imposed by the SDRWQCB cannot be met by municipal dischargers unless the storm water runoff is captured and treated.

The application of the SDRWQCB numerical limit on toxicity is a perfect example of how an effluent limit can be improperly established if it is not scientifically derived and can result in tremendous costs to implement a conservative effluent limit that is not necessary to protect beneficial uses in receiving waters. The fact that the SDRWQCB staff requested assistance to evaluate the Navy study's findings, suggests that the SWRCB should have a permit review process or provide detailed guidance to ensure that sound science is applied consistently and is applicable to the water body being protected. The Navy would be willing to support the development of scientific methodologies and can provide a copy of our recent multi-year, multi-rain event, million dollar plus study.

In conclusion, the Navy believes that it is not feasible to implement numeric limits for industrial storm water discharges. The Panel's own concerns about implementing numeric limits for industrial discharges far outweighs their limited justification for concluding they are feasible. Large industries do not have better controls to mitigate storm water runoff. Clearly, there is a lack of sufficient scientific monitoring data, particularly as they relate to receiving water impacts. And clearly, there is a lack of scientific rigor and review applied to regional board permit requirements, as evidenced by the SDRWQCB application of a numeric toxicity limit with no supporting science (Enclosures 1 and 2 provide additional information on this limit). Finally, there has been little or no concern regarding the financial impacts of permit actions. We recommend that the SWRCB work towards ensuring that storm water compliance requirements are consistent and follow a scientific methodology from a perspective of protecting beneficial uses for each waterbody.

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July 20, 2006

If you have any questions concerning these comments please contact Rob Chichester, Water Program Manager, at (619) 524-6390.

Sincerely,



BRIAN S. GORDON  
Director, Compliance and  
Technical Division  
By direction

Enclosures: 1. CNRSW Letter to Mr. Tom Howard (dated May 8, 2006)  
2. CNRSW Fact Sheet on Toxicity Standards for Storm Water  
NPDES Permits (dated May 2006)

Copy to:

Mr. Dan Dunmoyer, Office of Governor Arnold Schwarzenegger  
Mr. Fred Aguiar, Cabinet Secretary,  
Office of Governor Arnold Schwarzenegger  
Mr. Sean Walsh, Director, Governor's Office of Planning and Research  
Congresswoman Susan Davis  
Senator Christine Kehoe  
Senator Sheila Kuehl  
Senator Denise Ducheny  
Assemblymember Lori Saldana  
Assemblymember Juan Vargas  
Linda Adams, Cal/EPA Secretary  
Sunne Wright McPeak, Secretary of Business, Transportation and Housing  
Tom Howard, Chief Deputy Director, California Water Quality Control Board



DEPARTMENT OF THE NAVY  
COMMANDER NAVY REGION SOUTHWEST  
937 N. HARBOR DR.  
SAN DIEGO, CA 92132-0058

IN REPLY REFER TO:  
5090  
Ser N45/140  
May 8, 2006

Mr. Tom Howard,  
Chief Deputy Director  
California Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

Dear Mr. Howard,

I would like to thank you for your efforts to obtain information from the San Diego Regional Water Quality Control Board (SD RWQCB) concerning the scientific basis for their toxicity standard as applied to storm water discharges at our San Diego Bay installations. We have reviewed their March 9, 2006 response letter (enclosure 1) and offer the following comments regarding their basis for the standard and their failure to provide supporting scientific data as we had requested. I am also including information on the Navy's efforts to develop a scientifically-based alternative standard.

The SD RWQCB letter cites 1974 Water Quality Control Policy for the Enclosed Bays and Estuaries of California (EBEP) as the source of the toxicity standard. We continue to question the applicability of this 1974 policy to storm water discharges. The Introduction section of the EBEP (enclosure 2) states, "*This policy does not apply to wastes from vessels or land runoff except as specifically indicated for siltation (Chapter III4.) and combined sewer flows (Chapter III 7.)*." Since land runoff is synonymous with storm water runoff it is clear the EBEP was not intended to apply to storm water discharges. The SD RWQCB specifically justifies the use of the toxicity standard in the following statement "Storm water runoff from industrial areas is considered industrial process water. Therefore, in accordance with the EBEP, specifically footnote 3, the permit established a performance standard for toxicity for the base's storm water discharges."

This interpretation of how the EBEP applies to storm water discharges contradicts information we previously received from the State Water Board. On April 11, 2002, we submitted a letter (enclosure 3) to the State Water Board seeking clarification on the definition of "industrial process waters" in the EBEP as it relates to industrial storm water runoff. The State Water Board response letter (enclosure 4) states, "You are correct that the policy's provisions concerning "industrial process water" does not apply to

Enclosure 1

storm water discharges covered under the NPDES Industrial Activities Storm Water General Permit."

The SD RWQCB's interpretation of the EBEP's provisions if applied consistently to all discharges would require the phasing out of industrial storm water discharges throughout the state in accordance with the EBEP. Chapter I.A. "*Principles of Management of Water Quality in Enclosed Bays and Estuaries*," of the EBEP states, "It is the policy of the State Board that the discharge of municipal wastewaters and industrial process waters (exclusive of cooling water discharges) to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, shall be phased out at the earliest practicable date." I may agree that such an interpretation, and the ensuing phase out of storm water discharges, would likely create significant disruption if applied to other ports and industrial activities throughout California.

The SD RWQCB's response letter also failed to provide any scientific data supporting the toxicity standard as we requested. The SD RWQCB has not provided any evidence that a 90% survival toxicity standard is necessary to support San Diego Bay beneficial uses rather than a less stringent standard. Nor have they addressed the questions Congresswoman Susan Davis provided in her 2002 letter (enclosure 5), such as her question as to whether this toxicity test had ever been used on non-industrial storm water and whether general urban storm water could pass the test.

It remains the Navy's position that the application of a standard from a 1974 policy that was designed for continuous industrial discharges should not be applied to episodic storm water discharges without specific scientific data supporting it. This is particularly important in this case where the cost for compliance is very high. The estimated capital expenditure to comply with the toxicity standard is \$312 million, plus significant ongoing operational costs. Furthermore, the construction, operation, and new procedures necessary for compliance could substantially disrupt the function of the largest naval complex in the Pacific.

For the last four years, the Navy has been working on an alternative toxicity standard to present to the SD RWQCB. The proposed alternative standard is supported by an extensive scientific study based on whole effluent and receiving water sampling and analyses to evaluate Navy storm water discharges and to develop a toxicity standard that is both representative of actual marine life exposures and protective of beneficial uses. An

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update on this toxicity study was presented to the SD RWQCB on March 9, 2005 and the final will be presented on June 14, 2006.

In conclusion, the SD RWQCB cites the EBEP as a basis for the storm water toxicity standard in Navy NPDES permits. It is our position, based on our interpretation of the EBEP and information from the State Water Board, that the EBEP is not applicable to storm water discharges and is being incorrectly applied by the SD RWQCB. The SD RWQCB has not provided any additional supporting scientific data to justify the use of a toxicity standard that will be disruptive to our national security mission and extremely costly to implement.

Furthermore, the precedent of applying this standard to our port facilities could have significant implications to port facilities throughout California, as well as other industrial areas, and have implications to the ongoing goods movement initiative underway by the Business, Transportation and Housing Agency and Cal/EPA.

To support the development of a scientifically based toxicity standard, the Navy has conducted an extensive study over the last four years. The Navy will present the results of the study and propose an alternative standard that will be protective of beneficial uses to the SD RWQCB on June 14, 2006.

Again, we appreciate your efforts in this matter and request your continued assistance. If you have any questions regarding this matter, my point of contact is Mr. Robert Chichester, Water Quality Program Manager, at (619) 524-6417.

Sincerely,  
  
L. R. HERING  
Rear Admiral, U.S. Navy  
Commander, Navy Region Southwest

Enclosure: 1. State Water Resource Control Board ltr of 09 Mar 06  
2. Water Quality Control Policy for the Enclosed Bays and Estuaries of California of May 1974  
3. CNRSW ltr 5090 Ser N45RW.rc/0109 of 11 Apr 02  
4. State Water Resource Control Board ltr of 12 Jun 02  
5. U.S. House of Representatives ltr of 5 Aug 02

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Copy to:

Congresswoman Susan Davis

Senator Christine Kehoe

Senator Denise Moreno Ducheny

Assemblymember Lori Saldana

Assemblymember Juan Vargas

Dan Skopec, Undersecretary, California Environmental Protection  
Agency

Sunne Wright McPeak, Secretary, California Business,  
Transportation and Housing Agency





# California Regional Water Quality Control Board San Diego Region



Alan C. Lloyd, Ph.D.  
Secretary for  
Environmental  
Protection

Over 50 Years Serving San Diego, Orange, and Riverside Counties  
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Arnold Schwarzenegger  
Gov.

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340  
(858) 467-2952 • Fax (858) 571-6972  
<http://www.waterboards.ca.gov/sandiego>

**TO:** Tom Howard  
Chief Deputy Director  
State Water Resources Control Board

**FROM:** Michael McCann  
Supervising Water Resource Control Engineer  
**SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD**

**DATE:** March 9, 2006

**SUBJECT:** STORMWATER TOXICITY LIMITATION—US NAVY AND SAN DIEGO BAY

This is in response to your request for information on questions raised by the US Navy in an email to you dated February 2, 2006 from Mr. Randal Friedman, US Navy, Navy Region Southwest.

Specifically, the Navy has requested the San Diego Regional Board provide scientific analysis and studies supporting the current performance standard toxicity established in the 3 NPDES permits for the Navy's stormwater discharges to San Diego Bay. The Navy refers to the standard as, "90% survival, 50% of the time and 70% survival, 10% of the time".

The toxicity standard of concern is the toxicity limitation established in The Water Quality Criteria for the Freshwater Bays and Estuaries of California as adopted by Resolution No. 95-84 on November 16, 1995 (EBEP). Specifically, Footnote No. 3 to the opening paragraph of Chapter I reads as follows:

"Undiluted wastewaters covered under this exception provision shall not produce less than 90 percent survival, 50 percent of the time, and not less than 70 percent survival, 10 percent of the time of a standard test species in 96-hour static or continuous flow bioassay test using undiluted waste. Maintenance of these levels of survival shall not by themselves constitute sufficient evidence that the discharge satisfies the criteria of enhancing the quality of the receiving water above that which occur in the absence of the discharge. Full and uninterrupted protection for the beneficial uses of the receiving water must be maintained. A Regional Board may require physical, chemical, bioassay, and bacteriological assessment of treated wastewater quality prior to authorizing release to the bay or estuary of concern."

*California Environmental Protection Agency*



Encl (1)

This is consistent with, and the appropriate way to implement, the Basin Plan water quality objective for toxicity that states "All wastes shall be maintained free from toxic substances in concentrations that are toxic to or produce detrimental physiological responses in human, plant, animal, or aquatic life..." The CWA sec. 101(a)(3) declares "that it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." By complying with the industrial discharge specifications for toxicity established in the EBEP, the discharges of industrial storm water will be protective of the receiving water quality.

On Sept. 11, 2002 the San Diego Regional Board adopted a NPDES permit to the US Navy for discharges of stormwater to San Diego Bay from its Navy Base Point Loma. Storm water runoff from industrial areas is considered industrial process water. Therefore, in accordance with the EBEP, specifically Footnote No. 3, the permit establishes a performance standard for toxicity for the base's stormwater water discharges. The permit specifies that this performance standard would become an enforceable effluent limitation on Sept. 11, 2006. The Board had initially considered the EBEP toxicity limit as an enforceable effluent limitation, but the US Navy objected and argued before the Board that the specific toxicity limitation was too stringent to meet and not scientifically based. The US Navy requested sufficient time to review the limitation and, if possible, to develop sufficient data to support an alternative, scientifically based, toxicity limitation. In response to the Navy's request, the Board established the toxicity limit as a nonenforceable performance standard until Sept. 11, 2006 when the standard would become an enforceable effluent limitation.

It is important to point out that Order No. R9-2002-0002, the order serving as the NPDES permit, has a finding, Finding No. 3, that references the EBEP. In addition, the Fact Sheet to the order also references the EBEP.

Subsequent to the Board's adoption of the NPDES permit for Navy Base Point Loma, the Board adopted NPDES permits to two other Navy Base facilities adjacent to San Diego Bay—Navy Base San Diego and Navy Base Coronado. These permits also establish the same toxicity performance standard with a 4-year time period before the performance standard becomes an enforceable effluent limitation.

The toxicity limit from the EBEP should not have come as a surprise to the Navy in 2002 with the adoption of the permit for Navy Base Point Loma. On August 12, 1998, the Regional Board adopted a NPDES permit, Order No. 98-53, to the US Navy for its Graving Dock facility adjacent to San Diego Bay. This order established the same toxicity performance standard as the US Navy Point Loma permit and specified that the standard would become an enforceable effluent limitation in 2000. The US Navy has complied with the permit by terminating stormwater discharges to San Diego Bay.

Since the Sept. 11, 2002, the US Navy is supposed to have been working on developing information to support an alternate toxicity effluent limitation. It is not apparent at this time what progress the Navy has achieved in developing sufficient information to support an alternative toxicity limit. The US Navy has contacted us recently that they intend to meet with Board staff to provide the information they have developed. It is our expectation that the Navy will also provide a plan and schedule for complying with the enforceable toxicity effluent limitation by Sept. 11, 2006.

The Navy is not the first discharger required to meet this EBEP toxicity limitation. Since 1999, the three major shipyards in San Diego Bay—NASSCO, Continental Maritime, and BAE (formerly Southwest Marine)—have been required to meet this same toxicity limitation for stormwater discharges to San Diego Bay. The shipyards have complied with their NPDES permits by configuring their exposed work areas to prevent stormwater discharges to the bay. The Navy may have to take the same approach in complying with their NPDES permits.

The specific toxicity limitation was established for the EBEP when it was first adopted by the State Board in 1974. I am not aware of any challenges received by the State Board regarding this long-standing toxicity limit. Also, I am not aware of all the information that formed the basis for the toxicity limit in the 1974 EBEP. I recently learned from State Board staff that the following two reports may have been used to partially support the 1974 EBEP toxicity limit:

1. A 1972 study titled "A Study of Toxicity and Biostimulation in San Francisco Bay-Delta Waters. Volume III. Acute Toxicity of Discharged Wastes".
2. Kaiser Engineers, Inc. 1969. San Francisco Bay-Delta Water Quality Control Program.

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The Water Quality Control Plan for the Enclosed Bays and Estuaries of California as adopted by Resolution No. 95-84 on the November 16, 1995 specifies the following:

Chapter 1:

It is the policy of the State Board that the discharge of municipal wastewaters and industrial process waters<sup>2</sup> (exclusive of cooling water discharges) to enclosed bays and estuaries, other than San Francisco Bay-Delta system, shall be phased out as the earliest practicable date. Exceptions to this provision may be granted by a Regional Board only when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge<sup>3</sup>.

Footnote No. 2: For the purpose of this policy, treated ballast waters and innocuous nonmunicipal wastewater such as clear brines, wastewater, and pool drains are not necessarily considered industrial process wastes, and may be allowed by the Regional Boards under discharge requirements that provide protection to the beneficial uses of the receiving water.

Footnote No. 3: Undiluted wastewaters covered under this exception provision shall not produce less than 90 percent survival, 50 percent of the time, and not less than 70 percent survival, 10 percent of the time of a standard test species in 96-hour static or continuous flow bioassay test using undiluted waste. Maintenance of these levels of survival shall not by themselves constitute sufficient evidence that the discharge satisfies the criteria of enhancing the quality of the receiving water above that which occur in the absence of the discharge. Full and uninterrupted protection for the beneficial uses of the receiving water must be maintained. A Regional Board may require physical, chemical, bioassay, and bacteriological assessment of treated wastewater quality prior to authorizing release to the bay or estuary of concern.

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Discharge Specifications B. 4.a and b of Order No. R9-2002-0002 reads as follows:

4a. For the SUBASE facility, effective 4 years after the adoption of this order, in a 96-hour static or continuous flow bioassay (toxicity) test, undiluted storm water runoff associated with industrial activity shall not produce less than 90 % survival, 50 % of the time, and not less than 70 percent survival 10 % of the time, using standard test species and protocol.

4b. During the 4-year period before the effective date of the toxicity limit set forth in *paragraph a* of this specification, the U.S. Navy shall conduct a study of the toxicity in storm water discharges from all areas of the SUBASE at which industrial activities are undertaken and shall recommend a scientifically valid survival rate for acute exposure to discharges of storm water from industrial areas at SUBASE. The study may include a Toxicity Identification Evaluation (TIE), or a Toxicity Reduction Evaluation (TRE).

State of California

The Resources Agency

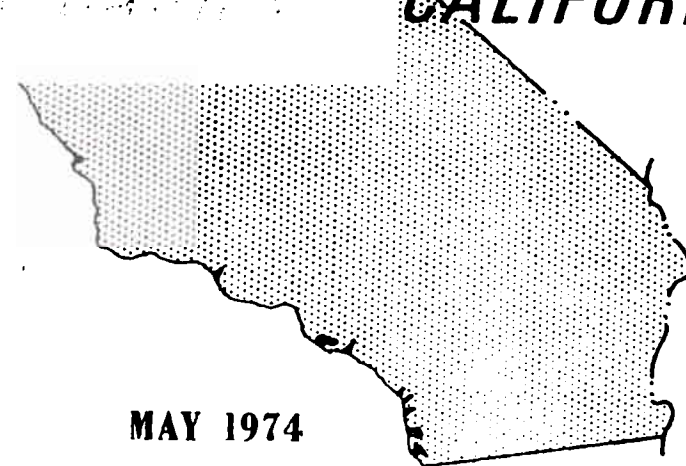
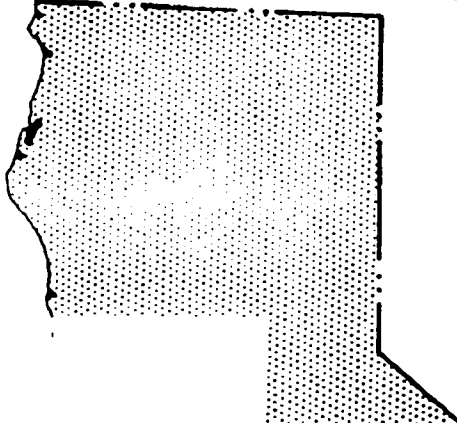
***WATER QUALITY CONTROL POLICY***

*for the*

***ENCLOSED BAYS***

*and*

***CALIFORNIA***



MAY 1974

**STATE WATER RESOURCES CONTROL BOARD**

Encl (2)

WATER QUALITY CONTROL POLICY  
FOR THE ENCLOSED  
BAYS AND ESTUARIES OF CALIFORNIA<sup>1/</sup>

INTRODUCTION

The purpose of this policy is to provide water quality principles and guidelines to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. Decisions on water quality control plans, waste discharge requirements, construction grant projects, water rights permits, and other specific water quality control implementing actions of the State and Regional Boards shall be consistent with the provisions of this policy.

The Board declares its intent to determine from time to time the need for revising this policy.

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CHAPTER I.

PRINCIPLES FOR MANAGEMENT OF  
WATER QUALITY IN ENCLOSED BAYS AND ESTUARIES

A.

(exclusive of cooling water discharges) to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Board only when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge. 3/

B. With regard to the waters of the San Francisco Bay-Delta system, the State Board finds and directs as follows:

1a. There is a considerable body of scientific evidence and opinion which suggests the existence of biological degradation due to long-term exposure to toxicants which have been discharged to the San Francisco Bay-Delta system. Therefore, implementation of a program which controls toxic effects through a combination of source control for toxic materials, upgraded wastewater treatment, and improved dilution of wastewaters, shall proceed as rapidly as is practicable with the objective of providing full protection to the biota and the beneficial uses of Bay-Delta waters in a cost-effective manner

1b. A comprehensive understanding of the biological effects of wastewater discharge on San Francisco Bay, as a whole, must await the results of further scientific study. There is, however, sufficient evidence at this time to indicate that the continuation of wastewater discharges to the southern reach of San Francisco Bay, south of the Dumbarton Bridge, is an unacceptable condition. The State Board and the San Francisco Regional Board shall take such action as is necessary to assure the elimination of wastewater discharges to waters of the San Francisco Bay, south of Dumbarton Bridge, at the earliest practicable date.

1c. In order to prevent excessive investment which would unduly impact the limited funds available to California for construction of publicly owned treatment works, construction of such works shall proceed in a staged fashion, and each stage shall be fully evaluated by the State and Regional Boards to determine the necessity for additional expenditures. Monitoring requirements shall be established to evaluate any effects on water quality, particularly changes in species diversity and abundance, which may result from the operation of each stage of planned facilities



and source control programs. Such a staged construction program, in combination with an increased monitoring effort, will result in the most cost-effective and rapid progress toward a goal of maintaining and enhancing water quality in the San Francisco Bay-Delta system.

2. Where a waste discharger has an alternative of in-bay or ocean disposal and where both alternatives offer a similar degree of environmental and public health protection, prime consideration shall be given to the alternative which offers the greater degree of flexibility for the implementation of economically feasible wastewater reclamation options.

and source control programs. Such a staged construction program, in combination with an increased monitoring effort, will result in the most cost-effective and rapid progress toward a goal of maintaining and enhancing water quality in the San Francisco Bay-Delta system.

2. Where a waste discharger has an alternative of in-bay or ocean disposal and where both alternatives offer a similar degree of environmental and public health protection, prime consideration shall be given to the alternative which offers the greater degree of flexibility for the implementation of economically feasible wastewater reclamation options.

The following policies apply to all of California's enclosed bays and estuaries:

1. Persistent or cumulative toxic substances shall be removed from the waste to the maximum extent practicable through source control or adequate treatment prior to discharge.
2. Bay or estuarine outfall and diffuser systems shall be designed to achieve the most rapid initial dilution<sup>4/</sup> practicable to minimize concentrations of substances not removed by source control or treatment.
3. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.
4. Waste discharges shall not cause a blockage of zones of passage required for the migration of anadromous fish.
5. Nonpoint sources of pollutants shall be controlled to the maximum practicable extent.

## FOOTNOTES

1/ Enclosed bays are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outer most harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes, but is not limited to: Humboldt Bay, Bedega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Estuaries, including coastal lagoons, are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters.

Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries.

Estuarine waters will generally be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters shall be considered to extend seaward if significant mixing of fresh and saltwater occurs in the open coastal waters. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

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2/ For the purpose of this policy, treated ballast waters and innocuous nonmunicipal wastewater such as clear brines, wash-water, and pool drains are not necessarily considered industrial process wastes, and may be allowed by Regional Boards under discharge requirements that provide protection to the beneficial uses of the receiving water.

3/

... of ... shall not by themselves constitute sufficient evidence that the discharge satisfies the criteria of enhancing the quality of the receiving water above that which occur in the absence of the discharge. Full and uninterrupted protection for the beneficial uses of the receiving water shall be maintained. A Region ... may require physical, chemical, bioassay, and bacteriological assessment of treated wastewater quality prior to authorizing release to the bay or estuary of concern.

- 4/ Initial dilution zone is defined as the volume of water near the point of discharge within which the waste immediately mixes with the bay or estuarine water due to the momentum of the waste discharge and the difference in density between the waste and receiving water.
- 5/ A new discharge is a discharge for which a Regional Board has not received a report of waste discharge prior to the date of adoption of this policy, and which was not in existence prior to the date of adoption of this policy.
- 6/ Rubbish and refuse include any cans, bottles, paper, plastic, vegetable matter, or dead animals or dead fish deposited or caused to be deposited by man.
- 7/ The prohibition does not apply to cooling water streams which comply with the "Water Quality Control Plan for the Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" - State Water Resources Control Board.

DEPARTMENT OF PUBLIC  
UTILITY SERVICES  
657 NO. MARSHON DR.  
SAN DIEGO, CALIFORNIA 92108-0000

IN REPLY REFER TO:  
5090  
Ser N45RW.rc/ 0109  
April 11, 2002

Ms. Celeste Cantu  
State Water Resources Control Board  
PO Box 100  
Sacramento, CA 95812-100  
Dear Ms. Cantu:

We are referring to the 1974, Water Quality  
Control Policy and Estuaries of  
California, Resources Control Board.  
In the policy, Chapter I., Section A. states,

"It is the policy of the State Board that the discharge of  
Municipal wastewaters and industrial process waters  
(exclusive of cooling water discharges) to enclosed bays and  
estuaries, other than the San Francisco Bay-Delta system,  
shall be phased out at the earliest practicable date."

We are looking for clarification on the definition of  
"industrial process waters" as it is used in the text above and  
some examples. Our concern is that the definition of  
"industrial process waters" would include storm water runoff  
currently covered under the California General Industrial Storm  
Water Permit and therefore, would be required to be phased out.

Our interpretation of this Policy is that it was not written  
to apply to land runoff as stated in the Policy Introduction.

If there are any questions regarding this letter, please  
contact me at (619) 524-6390.

Sincerely,



BRIAN S. GORDON  
Director, Water Program  
By direction of the Commander

Encl (3)



**Winston H. Hickox**  
Secretary for  
Environmental  
Protection

## State Water Resources Control Board

### Division of Water Quality

1001 I Street • Sacramento, California 95814 • (916) 341-5455  
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100  
FAX (916) 341-5463 • Internet Address: <http://www.swrcb.ca.gov>



**Gray Davis**  
Governor

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at <http://www.swrcb.ca.gov>.*

**JUN 12 2002**

Mr. Brian S. Gordon  
Director, Water Program  
Department of the Navy  
Commander Navy Region Southwest  
937 North Harbor Drive  
San Diego, CA 92132-0058

Dear Mr. Gordon:

#### APPLICABILITY OF MAY 1974 WATER QUALITY CONTROL POLICY FOR THE ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA TO STORM WATER DISCHARGES

Thank you for your letter of April 11, 2002 to Celeste Cantú, Executive Director of the State Water Resources Control Board, regarding the applicability of the May 1974 Water Quality Control Policy for the Enclosed Bays and Estuaries of California (Policy) to discharges currently permitted by the National Pollutant Discharge Elimination System (NPDES) Industrial Activities Storm Water General Permit.

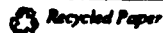
You are correct that the Policy's provisions concerning "industrial process water" does not apply to storm water discharges covered under the NPDES Industrial Activities Storm Water General Permit (Permit). Dischargers complying with the NPDES Permit may continue to discharge their storm water and are not subject to the phase-out policy.

If you have any questions, the staff person most knowledgeable on this subject is Leo Cosentini, and he can be reached at (916) 341-5524. You may also call Maryann Jones, Chief of the Industrial, Construction and Dairies Unit, at (916) 341-5531.

Sincerely,

Stan Martinson, Chief  
Division of Water Quality

*California Environmental Protection Agency*



Encl (4)

SUSAN A. DAVIS  
48TH DISTRICT, CALIFORNIA

WASHINGTON OFFICE:  
1617 LONGWORTH HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
(202) 225-2048

DISTRICT OFFICE:  
2150 WEST WASHINGTON STREET, SUITE 210  
SAN DIEGO, CA 92110  
(619) 291-1430

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515-0549**  
August 5, 2002

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John Robertus, Executive Officer  
California Regional Water Quality  
Control Board - San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, Ca 92123

Dear Mr. Robertus:

As the Regional Water Quality Control Board considers Navy Region Southwest's pending storm water permit (Tentative Order #R9-2002-02, NBPL NPDES Permit #CA0109363), I am writing to ask you to work with the Navy to develop a permitting standard that will allow the Navy to carry out its mission while protecting the health of San Diego Bay.

In determining this standard, I hope that you and the Navy will consider some basic questions including:

- What is the overall quality of water in the Bay? How has this changed since passage and implementation of the Clean Water Act in the 1970s?
- What level of toxicity can San Diego Bay accommodate?
- What is the scientific basis for the toxicity tests used by the Regional Board? If you applied the toxicity test to general urban runoff, how would it rate? Have you done such testing?
- If diversion of substantial volumes of storm water is required, what options exist for disposal of that storm water? Are you working with the City of San Diego on a coordinated approach to storm water management? Is it feasible for the Navy to discharge millions of gallons of storm water to the City of San Diego? If not, where is that storm water to go?

Answering basic questions like these would give both the Board and the Navy a clear baseline and guidance for the path ahead. As a strong believer in the missions of both the U.S. Navy and the Regional Water Quality Control Board, I sincerely hope that you can work together to develop a reasonable and defensible storm water permit based on the best available data.

If you have any questions, or if I may be of any service to you in this process, please contact Dan Hammer in my San Diego office at (619) 291-1430.

*S. Davis*

MEMBER OF CONGRESS





## Issue

The San Diego Regional Water Quality Control Board (SDRWQCB) has issued a storm water toxicity standard in Navy permits that will have significant impacts on Navy installations. It is the Navy's position that the new storm water toxicity standard is not based on sound science. At the Board's request, the Navy conducted a scientific study and will propose a scientifically-based alternative standard that is protective of beneficial uses and water quality. If the Board rejects the Navy's alternative standard, then the current standard will go into effect requiring the installation of systems to capture and collect millions of gallons of storm water runoff at a cost in excess of \$300 million. This financial impact will have a tremendous negative effect on the Navy Region Southwest's ability to support training our Sailors and Marines in support of the War on Terrorism.

## Background

In late 2002 and early 2003 the SDRWQCB issued three National Pollutant Discharge Elimination System (NPDES) permits regulating discharges from San Diego area naval installations. These permits include a stormwater discharge toxicity standard based on a 1974 state policy that applies to industrial discharges such as those originating from waste water treatment plants, and was never intended for storm water discharges. Specifically, the toxicity standard requires that industrial storm water discharges maintain a 90% survival rate in test organisms. While this standard may be appropriate for regulating continuous discharges like wastewater treatment plant effluent, the SDRWQCB has not provided a scientific rationale for applying the standard to intermittent discharges like storm water. During the hearings on these permits, the Board recognized the need for a scientifically based standard and requested the Navy develop and propose a scientifically-based alternative standard. The Navy has completed the study and has developed alternative standards that are scientifically-based and are protective of beneficial uses and water quality. If the Board does not approve the Navy's proposed alternative, the existing toxicity standard with the 90% survival rate would be applied to Navy industrial storm water discharges commencing in September 2006. An engineering study determined the capital cost estimate for compliance with the existing standard is approximately \$312 million, not including ongoing operations and maintenance costs.

## Discussion

### What is the SDRWQCB's current acute toxicity standard?

Navy NPDES permits include the following standard for storm water discharges *"undiluted storm water runoff associated with industrial activity shall not produce less than 90% survival 50% of the time, and not less than 70% survival, 10% of the time, using standard test species and protocol."* The standard applies to storm water prior to entering the receiving water (San Diego Bay). To comply with the standard, the Navy is required to collect storm water runoff at the "end of the pipe" before it enters the Bay and then expose marine organisms to the storm water sample, which has had sea salts added to it, for 96 hours.

## Why is the application of the SDRWQCB acute toxicity standard flawed?

The basis for the standard is a 32-year-old policy that does not apply to storm water runoff. In a March 9, 2006 letter to the State Water Resources Control Board the SDRWQCB staff cite the *1974 Water Quality Control Policy for Enclosed Bays and Estuaries of California (EBEP)* as the source for the toxicity standard applied to Navy industrial storm water discharges. While this standard may be appropriate for regulating continuous discharges like wastewater treatment plant effluent, it was never intended to apply to intermittent discharges like storm water. The SDRWQCB application of the EBEP to storm water discharges is inappropriate, inconsistent, and impractical for the reasons listed below.

1. The introduction section of the EBEP states, *"This policy does not apply to wastes from vessels or land runoff except as specifically indicated for siltation (Chapter III 4.) and combined sewer flows (Chapter III 7.)."* Therefore the EBEP does not apply to storm water runoff.
2. In their letter, the SDRWQCB specifically justifies using the toxicity standard in the following statement, *"Storm water runoff from industrial areas is considered industrial process water. Therefore, in accordance with the EBEP, specifically footnote 3, the permit established a performance standard for toxicity for the base's storm water discharges."* This interpretation of how the state policy applies to storm water discharges contradicts information the Navy previously received from the State Water Board. In a June 12, 2002 letter, the State Water Board stated *"You are correct that the Policy's provisions concerning "industrial process water" does not apply to storm water discharges covered under the NPDES Industrial Activities Storm Water General Permit."*
3. The SDRWQCB has selectively applied the EBEP to a small number of industrial facilities and the Navy. Using the SDRWQCB's rationale, the EBEP would need to be applied to hundreds if not thousands of industrial storm water dischargers in San Diego County. Instead they have only included the toxicity standard from the EBEP in a small number of permits that apply to the Navy and the local commercial shipyards. They have also only applied the toxicity provision from the Policy while ignoring its other provisions. The EBEP states *"It is policy of the State Board that the discharge of municipal wastewaters and industrial process waters... to enclosed bays and estuaries... shall be phased out at the earliest practicable date."* In other words, if the SDRWQCB includes industrial storm water discharges as industrial process waters and subject to the EBEP, they would need to phase out all industrial storm water discharges to enclosed bays and estuaries, with a result of substantial costs to industries throughout the county.
4. Other than the EBEP, the SDRWQCB has yet to provide any other basis for the standard. Both the State Water Resources Control Board and the Navy have requested scientific data supporting the standard. The SDRWQCB have not provided any requested scientific data demonstrating the toxicity standard is necessary to protect beneficial uses and water quality. In addition to the SWRCB and the Navy requests, questions concerning the standard have also been raised by Congresswoman Susan Davis. In an August 5, 2002 letter to the SDRWQCB Executive Officer, Congresswoman Davis asked several questions on the scientific basis for the standard and on how compliance with the standard could be achieved. One such question was, *"If you applied the toxicity test to general urban runoff, how would it rate? Have you done such testing?"* The questions raised by the Congresswoman have not been addressed by the SDRWQCB.

## What would be the impacts to the Navy?

The estimated cost for Navy installations to comply with the 90% toxicity standard is \$312 million, not including operations and maintenance costs. The estimate assumes the Navy will need to segregate storm water runoff from industrial areas from that generated from non-industrial areas at the installation (i.e. offices, homes, etc.). The runoff will then need to be

collected and treated or infiltrated into the ground. The construction, operation, and new procedures necessary for compliance would substantially disrupt the function of the largest naval complex in the Pacific.

If in addition to the impacts caused by the toxicity standard, if the SDRWQCB phased out all discharges to the Bay as anticipated by the EBEP, the impacts to the Navy would be even greater. Without the option to discharge treated storm water to the Bay, the only feasible option for eliminating all industrial storm water discharges at Navy installations would be to discharge significant volumes of runoff into the City of San Diego's sanitary sewer system. Unless the City greatly expands their collection and treatment systems, this option would not be available leaving the Navy with no realistic options for compliance.

#### How will this standard impact other dischargers throughout California?

The SDRWQCB's 90% acute toxicity standard for storm water discharges is so stringent that it is unlikely any industrial or municipal storm water runoff could consistently meet the standard without using collection and treatment systems. Best Management Practices implemented by most industries or municipalities throughout the state, including the Navy, would do little to bring them into compliance with the standard. If applied equally to all industries in California it would require the diversion of millions of gallons of storm water and installation of collection and treatment systems without any guarantee of success in meeting the standard. The enormous costs for compliance with the standard would be in billions of dollars. The City of San Diego recently studied a similar situation where stringent numeric limits are applied to storm water and found that compliance for the 25 square mile Chollas Creek watershed would require condemnation of land for large treatment facilities displacing thousands of homes and businesses at a cost of approximately \$1.7 billion. This cost is only for one drainage basin in San Diego. A 2002 study estimated the cost for Los Angeles County to catch and treat just 70% of their storm water runoff at approximately \$44 billion and 6 times that amount to catch and treat 97% of the storm water runoff.

As mentioned above, the SDRWQCB's interpretation of the EBEP's provisions if applied consistently to all storm water dischargers would require the phasing out of industrial storm water discharges throughout the state in accordance with the policy. Such an interpretation, and the ensuing phase out of storm water discharges, would create significant disruption if applied to other ports and industrial activities throughout California. As one example of the potential consequences, the Ports of Los Angeles, Long Beach, and San Diego could not continue port operations unless they diverted all storm water from their berths, cargo operations and maintenance facilities.

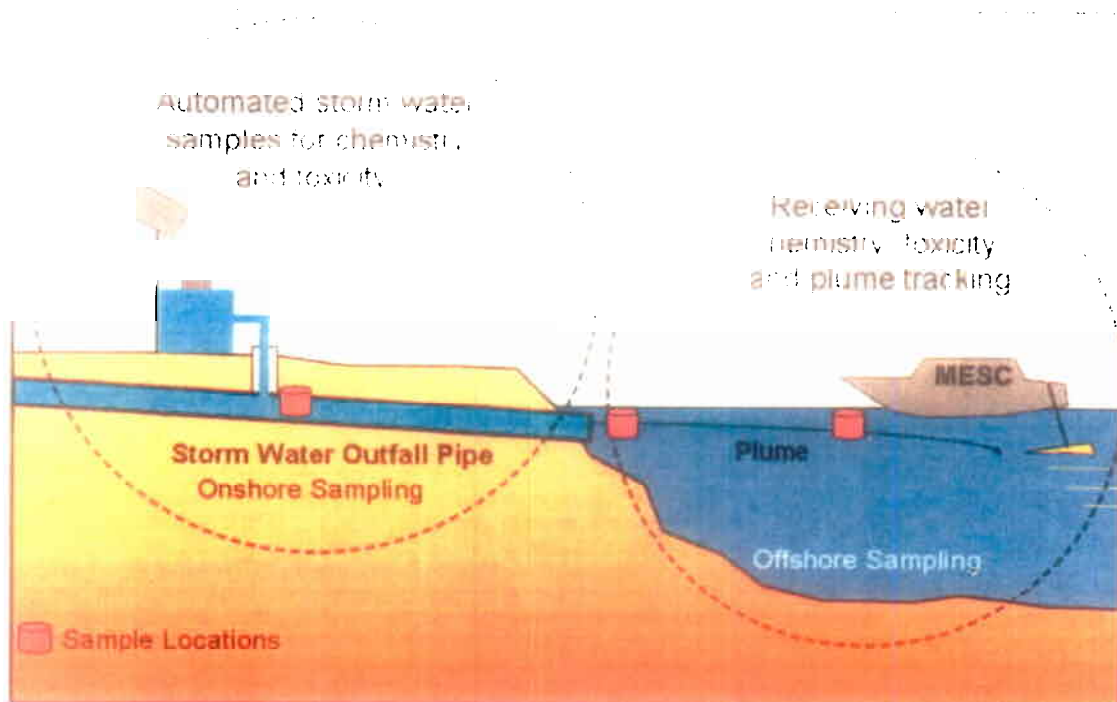
#### What is the Navy doing to protect San Diego Bay water quality?

The Navy has a robust storm water pollution prevention program. Site specific Storm Water Pollution Prevention Plans (SWPPPs) have been developed for the Navy installations that include Best Management Practices (BMPs) to address potential sources of storm water pollution. Both procedural and structural BMPs have been implemented. Some of the procedural BMPs include housekeeping and maintenance procedures, the use of street sweepers, compliance inspection programs, and pollution prevention training. Some of the structural BMPs implemented include roofs over and containment berming around outdoor industrial activities, the movement of outdoor industrial activities inside buildings, storm water collection systems, and storm water treatment systems. The Navy has established a Storm Water Working Group that's membership includes representatives from a wide spectrum of Navy organizations to ensure there is a comprehensive approach to storm water pollution prevention. In addition, the Navy has also implemented other programs to protect and enhance water quality. One example is a program to eliminate pollutants that leach into the Bay from treated pier pilings. This pier piling

replacement program has removed thousands of creosote treated pier pilings from the Bay and replaced them with pilings made from recycled plastics.

View 1.1 - The scientific study conducted.

For the last four years, the Navy has conducted an extensive scientific study based on whole effluent and receiving water sampling and analyses to evaluate Navy storm water discharges and to develop a toxicity standard that is both representative of actual marine life exposures on one of the most sensitive species in San Diego Bay and therefore protective of beneficial uses and water quality. During the study the Navy collected 136 samples and conducted 333 toxicity tests. The figure presented below provides a graphical schematic of the study's technical approach that included simultaneous toxicity and chemistry measurements in storm water and in receiving waters, and storm water plume mapping. To ensure the quality of the study the Navy established a peer review team that included representatives from EPA Region IX, Wright State University, Applied Marine Sciences, Southern California Coastal Water Research Program, and the Port of San Diego.



### What did the study show?

The study results showed that toxicity measurements on samples collected before storm water enters the bay (end of pipe), as required in the current standard, overestimates the exposure conditions in the receiving water and thereby greatly exaggerates the potential toxic impacts to marine life. This is clearly shown when comparing the end of pipe and receiving water toxicity results.

1. End of Pipe - The study results showed that **58%** of storm water samples collected at the end of the pipe, as required in Navy permits, did not meet the **90%** survival rate (current standard).

2. Receiving Water - Less than 1% of the receiving water samples (202 samples) collected had toxic results. The receiving water toxicity measurements included a mussel larvae test species. Mussel larvae are endemic to San Diego Bay and more sensitive than the test species used under the current standard.

The study concluded that to be scientifically defensible the toxicity standard should include the following.

1. Realistic exposure conditions when conducting toxicity testing to infer toxicity in the receiving water. In other words, the samples collected for toxicity testing should be representative of the exposure conditions (concentration and duration) found in San Diego Bay.
2. The use of standard EPA toxicity test methods and data evaluation criteria when declaring a test result is toxic or not toxic.

#### What are the Navy's proposed alternatives?

The Navy will propose an alternative toxicity standard, based on the results of the study, that includes either receiving water sampling or end-of-pipe sampling that are adjusted to simulate real life exposures. The standard will also incorporate EPA toxicity test methods (Whole Effluent Toxicity or WET) and data evaluation criteria for determining whether a test result is toxic or not toxic. The standard will require compliance 90% of the time, as opposed to the 50% requirement currently in Navy permits. Both proposed alternatives will provide a toxicity standard in Navy permits that will be protective of receiving water quality and beneficial uses, is scientifically defensible, and requires the implementation of effective Best Management Practices for compliance.

#### **Conclusion**

The SDRWQCB cites the EBEP as a basis for the storm water toxicity standard in Navy NPDES permits. It is our position, based on interpretation of this policy and information from the State Water Board, that it is not applicable to storm water discharges and is being incorrectly applied by the SDRWQCB. The SDRWQCB has not provided any supporting scientific data to justify the use of a toxicity standard that will be disruptive to the Navy and would be disruptive to all industrial activities in California if it were equally applied. The Navy's study has provided the data that support an alternative toxicity standard that is both scientifically-defensible and protective of receiving water beneficial uses. The Navy will present the results of the study and propose alternative standards to the SDRWQCB on June 14, 2006.