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Attorneys for Intervenor-Plaintiff
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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

NATURAL RESOURCES DEFENSE COUNCIL,

Plaintiff,

vs.

STEPHEN L. JOHNSON, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, and UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Defendants.

Case No. 2:06-cv-04843-GAF (JTLx)

NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES' REPLY TO PLAINTIFF NRDC'S RESPONSE TO MOTION TO INTERVENE

Judge: The Honorable Gary A. Feess
Hearing Date: January 22, 2007
Hearing Time: 9:30 a.m.
Courtroom: 740

CLEAN WATER ACT CASE

Movant the National Association of Clean Water Agencies ("NACWA") submits this Reply to Plaintiff Natural Resource Defense Council's ("NRDC") Reponse to NACWA's Motion for Leave to Intervene in this proceeding. NRDC does not oppose NACWA's intervention in this suit. However, NRDC's suggestion that NACWA should be aligned as a defendant is insupportable. The underlying claims in both NRDC's and NACWA's complaints are identical. They are brought pursuant to Section 505(a)(2) of the Clean Water Act ("CWA"), 33 U.S.C. §1365(a)(2) and Sections 706(1) and (2) of the Administrative Procedure Act ("APA"), 5 U.S.C. §§706(1) and (2). Section 505(a)(2) of the CWA provides that any citizen may commence a civil action "against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator." Sections 706(1) and (2) of the APA provide that any person adversely affected or aggrieved by a federal agency's action or failure to take action may bring suit to "compel agency action unlawfully withheld or unreasonably delayed" and to "hold unlawful and set aside agency action, findings, and conclusions" that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."

Both NACWA and NRDC seek to have this Court compel the Environmental Protection Agency ("EPA") to perform its non-discretionary duties to conduct studies to provide additional information for use in developing (1) an assessment of potential human health risks resulting from exposure to pathogens in coastal recreation waters; (2) appropriate and effective indicators for improving detection in a timely manner in coastal recreation waters of the presence of pathogens that are harmful to human health; (3) appropriate, accurate, expeditious, and cost-effective methods (including predictive models) for detecting in a timely manner in coastal recreation waters the presence of pathogens that are harmful to human health; and (4) guidance for State application of the criteria for pathogens and pathogen indicators to be published by the EPA, in accordance with the deadlines set forth in

the CWA. Like NRDC, NACWA alleges that EPA's actions to comply with these requirements of the CWA have been unlawfully withheld and unreasonably delayed.

That NACWA and NRDC may ultimately differ on the precise nature of the relief that should be granted by this Court does not alter the fact that their interests in compelling the EPA to comply with its duties under the CWA are perfectly aligned. Ever since the CWA was amended by the Beaches Environmental Assessment and Coastal Health Act of 2000 ("BEACH Act"), NACWA has consistently urged the EPA to conduct the additional studies mandated to support the development of appropriate pathogen criteria, indicator organisms and test methods. As noted in NACWA's August 9, 2004 comments on EPA's proposed rule formally adopting its outdated 1986 criteria (attached as Exhibit B to NRDC's Response), "on a number of occasions, [NACWA] has commented on the flaws in the original studies underling the criteria and the fact that no studies to confirm the criteria have been conducted since they were first established" over 20 years ago. NRDC Response at Exhibit B-15. For example, in NACWA's August 2, 2002 comments on EPA's Draft Implementation Guidance for Ambient Water Quality Criteria for Bacteria [see Declaration of David G. Fromm In Support of NACWA's Reply Brief ("Fromm Decl."), submitted herewith, at Exhibit A, p. 3], NACWA recommended that EPA "conduct additional research on the validity of *E. coli* and enterococci as indicator organisms," in accordance with the BEACH Act's requirement to perform an assessment of potential human health risks resulting from exposure to pathogens in coastal recreation waters. NACWA urged that these studies "should be completed before states make wholesale changes to water quality standards and discharge permits." *Id.* Similarly, in NACWA's October 1, 2001 comments on EPA's Draft National Beach Guidance [Fromm Decl., Exhibit B, p. 2], NACWA recommended additional study of the bacteria criteria and indicator organisms, due to the shortcomings in the studies cited by EPA in support of its

1986 criteria. Likewise, in NACWA's May 15, 2000 comments on EPA's Draft Implementation Guidance for Ambient Water Quality Criteria for Bacteria [Fromm Decl., Exhibit C, p. 4], NACWA stressed "the need for EPA to invest in additional bacterial indicators research to ensure that decisions are based on the most appropriate data."

NACWA's overriding concern in pressing EPA to conduct the additional studies mandated by the BEACH Act has been to ensure that EPA's development of new criteria, indicator organisms and test methods are "based on sound science and will serve to further improve water quality." *See* Fromm Decl., Exhibit B, p. 1. NRDC's suggestion that NACWA seeks only "updated criteria that cheaper and easier to achieve, and therefore likely less stringent and less protective than the existing criteria" is, frankly, disingenuous. For decades, NACWA members have worked to ensure that their discharges are protective of both human health and the environment and have played an active role in shaping the national policies that affect the way they perform this vital function. As front-line water quality managers, NACWA members' foremost goals are to protect public health and our nation's valuable water resources by treating and reclaiming wastewater to meet the ambitious goals of the CWA. NACWA's concern in this proceeding is to ensure that those goals are established and implemented by EPA in accordance with sound science and pursuant to the specific requirements of the Act.

There is simply no valid procedural or substantive justification for NRDC's suggestion that NACWA should be aligned as a defendant in this action. The duty to comply with the CWA's mandatory requirements to conduct additional studies to support the development of new criteria, indicator organisms and test methods for pathogens is EPA's and EPA's alone. The "divergence" between NACWA's and NRDC's views as to how those requirements should be implemented is precisely the reason why NACWA should be allowed to intervene in this case. NRDC cannot twist NACWA's historic positions on proper implementation of the BEACH

Act's requirements to suggest that NACWA should be aligned as a defendant. Even where diversity jursidiction has been challenged, the courts must align those parties whose interests coincide respecting the "primary matter" or "ultimate issue" in dispute. *Prudential Real Estate Affiliates, Inc. v. PPR Realty, Inc.*, 204 F.3d 867, 873 (9th Cir. 2000). The primary dispute in this case is EPA's failure to conduct the studies and to publish the criteria for pathogens and pathogen indicators that are mandated by the BEACH Act. On that primary issue, NACWA's interests are perfectly aligned with NRDC's. NACWA's motion for leave to intervene as a party-Plaintiff should be granted by this Court.

Dated: January 12, 2007

Respectfully submitted,

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Attorneys for Intervenor-Plaintiff National Association of Clean Water Agencies

LOSANGELES/224622.1

PROOF OF SERVICE

The undersigned certifies and declares as follows:

I am a resident of the State of California and over 18 years of age and am not a party to this action. My business address is 555 South Flower Street, Suite 3100 Los Angeles, California 90071-2300, which is located in the county where any non-personal service described below took place.

On January 12, 2007, I served a copy of the following document(s):

NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES' REPLY TO PLAINTIFF NRDC'S RESPONSE TO MOTION TO INTERVENE

on the persons identified on the attached service list:

Service was accomplished as follows.

☐ **By U.S. Mail, According to Normal Business Practice.** On this date, I sealed the above document(s) in an envelope addressed to the above, and I placed that sealed envelope for collection and mailing following ordinary business practices, for deposit with the U.S. Postal Service. I am readily familiar with the business practice at my place of business for the collection and processing of correspondence for mailing with the U.S. Postal Service. Correspondence so collected and processed is deposited the U.S. Postal Service the same day in the ordinary course of business, postage fully prepaid.

☒ **By Personal Delivery by Beverly Hills Express Attorney Services** of the document(s) listed above to the person(s) at the address(es) set forth below.

☒ **By Federal Express Service Carrier.** On this date, I sealed the above document(s) in an envelope or package designated by Federal Express, an express service carrier, addressed to the above, and I deposited that sealed envelope or package in a box or other facility regularly maintained by the express service carrier, or delivered that envelope to an authorized courier or driver authorized by the express service carrier to receive documents, located in Los Angeles, California with delivery fees paid or otherwise provided for.

☐ **By Electronic Mail Transmission With Attachment.** On this date, I transmitted the above-mentioned document(s) by electronic mail transmission with attachment to the parties at the electronic mail transmission number set forth below.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, and that I am employed in the office of a member of the bar of this court at whose direction the service was made. Executed on January 12, 2007, at Los Angeles, California.

Vicki Scott

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National Association of Clean Water
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UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

NATURAL RESOURCES DEFENSE COUNCIL,

Plaintiff,

vs.

STEPHEN L. JOHNSON, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, and UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Defendants.

CASE No. 2:06-cv-04843-GAF (JTLx)

DECLARATION OF DAVID G. FROMM IN SUPPORT OF NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES' REPLY BRIEF REGARDING MOTION TO INTERVENE

Judge: The Honorable Gary A. Feess

Hearing Date: January 22, 2007
Hearing Time: 9:30 a.m.
Courtroom: 740

CLEAN WATER ACT CASE

I, David G. Fromm, hereby declare and state as follows:

1. I am an attorney licensed to practice law in the State of California and before this honorable Court and represent the proposed Plaintiff-Intervenor National Association of Clean Water Agencies ("NACWA") (formerly named the Association of Metropolitan Sewerage Agencies, or "AMSA") in this matter. I have personal knowledge of the facts stated herein, except where stated upon information and belief, and, if called to testify, could and would competently testify to those facts.

2. Submitted herewith as Exhibit A in Support of NACWA's Reply to Plaintiff NRDC's Response to Motion to Intervene is a true and correct copy of correspondence dated August 2, 2002 from AMSA to William Morrow, Assistant Branch Chief, Water Quality Standards Branch, U.S. Environmental Protection Agency.

3. Submitted herewith as Exhibit B in Support of NACWA's Reply to Plaintiff NRDC's Response to Motion to Intervene is a true and correct copy of correspondence dated October 1, 2001 from AMSA to the W-01-08 Comment Clerk, Water Docket, MC4101, U.S. Environmental Protection Agency.

4. Submitted herewith as Exhibit C in Support of NACWA's Reply to Plaintiff NRDC's Response to Motion to Intervene is a true and correct copy of correspondence dated May 15, 2000 from AMSA to Geoff Grubbs, Director, Office of Science and Technology, U.S. Environmental Protection Agency.

I declare under penalty of perjury under the laws of the United States of America and the State of California that the foregoing is true and correct.

Executed on January 12, 2007 at Los Angeles, California.

David G. Fromm

LOSANGELES/224568.1

EXHIBIT A

amsa

Association of
Metropolitan
Sewerage Agencies

August 2, 2002

William Morrow
Assistant Branch Chief
Water Quality Standards Branch
U.S. Environmental Protection Agency (4305T)
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: Draft *Implementation Guidance for Ambient Water Quality Criteria for Bacteria* (May 2002 Draft); Request for Comments

Dear Mr. Morrow:

The Association of Metropolitan Sewerage Agencies (AMSA) is pleased to provide comments on the U.S. Environmental Protection Agency's (EPA's) draft *Implementation Guidance for Ambient Water Quality Criteria for Bacteria* (*Draft Guidance*). Founded in 1970, AMSA represents the interests of over 270 of the nation's publicly owned wastewater utilities (POTWs). AMSA members serve the majority of the sewered population in the United States and collectively treat and reclaim over 18 billion gallons of wastewater every day. For decades now, AMSA members have worked to ensure their discharges are protective of both human health and the environment and have played an active role in shaping the national policies that affect the way they perform this vital function. Although the *Draft Guidance* is designed to provide additional clarification to states developing water quality standards for bacteria, the POTW community will be impacted by decisions made according to the guidance and by permit limits derived from the resulting water quality standards.

Over the past year, AMSA commented on two separate EPA actions that discuss issues addressed in the *Draft Guidance*. On October 1, 2001, AMSA commented on the Agency's *Draft National Beach Guidance and Performance Criteria for Recreation Waters* (66 *Fed. Reg.* 39510; July 31, 2001). AMSA's comments highlighted the need for additional study of *E. coli* and enterococci as

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indicator organisms before any wholesale changes are made to water quality standards and noted a number of flaws in the studies cited by EPA to support the use of the new indicators.

On October 29, 2001, AMSA commented on EPA's proposal of test methods for the enumeration of *E. coli* and enterococci (August 30, 2001; 66 *Fed. Reg.* 45,811). EPA indicates in the proposal that the test methods were approved for ambient water quality monitoring purposes, not for evaluating effluent bacterial levels. AMSA commented that any change in indicator organism would be complicated by the lack of test methods to evaluate the new parameters in effluent. AMSA also noted that there is no evidence that POTWs meeting limits based on fecal coliform are causing any in-stream or downstream compliance, health, or environmental problems.

AMSA commends the Agency for addressing in the *Draft Guidance* those issues identified by states as impeding their progress towards adopting the *Ambient Water Quality Criteria for Bacteria* developed in 1986, which use *E. coli* and enterococci as indicators, and for providing added flexibility to states making the transition away from fecal coliform. However, many of our comments on the previous Agency actions mentioned above still apply. AMSA continues to call into question the Agency's complete reliance on *E. coli* and enterococci as indicators of bacteria contamination and is concerned with a number of other aspects of the *Draft Guidance*.

Additional Research Needed to Validate Criteria

AMSA continues to question the scientific validity of the 1986 *Ambient Water Quality Criteria for Bacteria*. The enterococci criterion, for example, was developed based solely on an extremely limited and highly polluted spatial representation of the United States coastal marine environment. This U.S. coastal sampling only looked at New York City, NY; Lake Ponchartrain, LA, and Boston Harbor, MA beaches. These data were further limited temporally to individual testing periods: 1973 to 1975 for New York City; 1977 and 1978 for Lake Ponchartrain; and, 1978 for Boston Harbor. The data focused entirely on known areas of pollution. No subsequent efforts have been reported that examine areas noted for uncontaminated, pristine swimming conditions. A random sampling program (random in distributions of geography and salinity, two important considerations) and the development of the true distribution for the bacteria and the measured illness are essential to achieving unbiased results.

A closer look at the individual studies used to support the 1986 criteria reveals additional concerns. Consider that nine testing periods were used for data collection and statistical comparison of the results at New York City beaches, but only two (22%) of these nine tests had a statistically significant difference in symptoms detected between swimmers and non-swimmers. In addition, determination of illness in all studies was the result of self-diagnosis of interviewed subjects. These subjects were frequently multiple members of the same family units which created a potentially strong conflicting bias, and self-diagnosis is often erroneous.

In the *Draft Guidance* EPA continues to affirm the scientific validity of the 1986 criteria, but the study results cited in support of the criteria are not as definitive as represented. For example:

> *Cheung et al. (1990) conducted a study in Hong Kong and found a poor relationship between enterococci and symptoms of GI or HCGI illness. He also measured a much lower incidence of symptoms at corresponding bacterial levels then reported in the EPA 1986 criteria. Illness levels used for the development of the EPA geometric mean standard were 19 cases per 1000 individuals. Geometric means ranging from 40 to 250 enterococci were measured while corresponding GI symptom rates were only 4.5 per 1000 swimmers. The authors also summarized two beach studies in Egypt where to find a similar risk level of 19 cases of GI symptoms the predicted enterococci bacterial mean concentrations were 620 and 3400 cfu's/100 ml, respectively. It was concluded that this demonstrates the need for country (and we would contend regional) specificity in criteria development.* ***This study did not confirm or validate the EPA findings. In fact it contradicted the correlation claims of the EPA studies and identified a much higher level of enterococci associated with a much lower level of illness symptoms.***

AMSA recommends that EPA conduct additional research on the validity of *E. coli* and enterococci as indicator organisms. Under the Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000, EPA must perform an assessment of potential human health risks resulting from exposure to pathogens in coastal recreation waters. To meet the requirements of the BEACH Act, EPA states in the *Draft Guidance* that they are "planning to conduct additional epidemiological studies that may be used to revise and develop new water quality criteria for pathogens and pathogen indicators." Ideally these studies should be completed before states make wholesale changes to water quality standards and discharge permits. However, this information is unlikely to be available before April 2004, when states with coastal recreation waters are required to have in place criteria as protective as EPA's criteria.

Effective Test Methods for Wastewater Not Available

The lack of approved analytical procedures in 40 CFR Part 136 for enumerating *E. coli* and enterococci has been one of the primary roadblocks to state adoption and use of these indicators in a regulatory context. As states strive to meet the April 2004 deadline for developing bacteria water quality standards that are as protective as EPA's, POTWs and other point sources will begin receiving permit limits for *E. coli* and enterococci. Regulated entities will need procedures for assessing compliance with their permit limits. The *Draft Guidance* does reaffirm that permit writers, in accordance with 40 CFR 122.41(j)(4), have the authority to specify methods that are not contained in 40 CFR Part 136, and refers to several EPA-approved methods that may be used in permits. However, these methods, which EPA proposed to add to 40 CFR Part 136 on August 30, 2001 (66 *Fed. Reg.* 45,811), are only approved for ambient water quality monitoring purposes. EPA has determined and noted in the text of the methods that these procedures are not acceptable for evaluating other matrices, such as POTW or other point source effluent.

In fact, there has been at least one study that indicates the Colilert test for *E. coli* used for wastewater matrices can result in false positives due to the presence of other organisms that react in the same way as *E. coli*. It is our understanding that one major issue is the moderate incubation temperature used for *E. coli* as part of this test procedure. At least one AMSA member

has found that different enumeration methodologies for enterococcus give radically different results when used for treated wastewater, and that EPA Method 1600 (24-hour) yields significantly lower enterococci numbers in chlorinated and dechlorinated wastewater than an older method (48-hour). AMSA recommends additional study of appropriate test methodologies to ensure that accurate, representative test results can be obtained in complex wastewater/effluent matrices.

Many POTWs currently operate with effluent limits for fecal coliform bacteria. Regulators will seek to establish *E. coli* and enterococci limits that are equivalent to existing requirements. However, the effectiveness of disinfection, as currently practiced, on *E. coli* and/or enterococci is uncertain. Without approved test procedures for enumerating *E. coli* and enterococci in effluent, POTWs and regulators will have no reliable means to assess effluent quality with respect to the new water quality criteria.

AMSA recommends that EPA add to the *Draft Guidance* a discussion of how the lack of approved test methods should be addressed by permitting authorities and permittees as they transition away from fecal coliform.

Specific Comments on Draft Guidance

As mentioned above, AMSA appreciates the Agency's efforts to provide states with additional guidance to aid in the transition from fecal coliform to *E. coli* and/or enterococci. The following are AMSA's specific comments on the *Draft Guidance*:

Criteria Values

AMSA questions the use of two different, acceptable rates of gastroenteritis, per 1000 swimmers, depending on whether the exposure occurs in marine or fresh water. The *Draft Guidance* suggests that the values are an approximation of the protection afforded by the fecal coliform criterion. However, a closer look at EPA's 1986 criteria document reveals that the primary reason EPA used the new indicators was the lack of correlation between fecal coliform concentrations and illness rate (*Ambient Water Quality Criteria for Bacteria – 1986*, Table 2, "Correlation Coefficients for Swimming-Associated Gastroenteritis Rates Against Mean Indicator Densities at Marine and Fresh Water Bathing Beaches"). It is unclear how these numbers were calculated given the lack of correlation; whether EPA has new data that suggest a good correlation; what confidence levels surround these numbers; and what safety factors were used.

While the *Draft Guidance* states that it would be appropriate for states to protect marine waters at approximately the same level as fresh waters, it does not allow States and Tribes to correct the inequity without severe consequences. By limiting freshwater criteria to no more than 14 illnesses per 1000 swimmers, parity could only be achieved by lowering the marine criteria to that level (or lower if the freshwater standard were lower). In doing so, the marine mean indicator density for enterococci would be reduced from the proposed 35 to 13. To protect at a level of 8 per 1000 in marine waters, the criteria would be reduced from 35 to 4. It is unlikely that any urban beach could meet either criterion on a regular basis.

The question then becomes, why not allow States and Tribes to raise the freshwater illness protection threshold to 19 (the marine waters threshold)? The guidance indicates that the epidemiological data would not support such a change, because the data used only ranged up to 14 illnesses per 1000 swimmers and does not support extrapolation (Section 1.4). Criteria should not be dictated by limitations in the study design.

The proposed geometric mean density associated with each of these protection levels highlights the significance of shifting from 8 to 14 or 19 illnesses per 1000 swimmers. For *E. Coli*, the calculated limits for each of these levels are 126, 547 and 1863 respectively. Therefore, a small change in the allowable potential illness rate results in a large change in the proposed criteria. EPA needs to prioritize the development of data to allow for the setting of criteria at levels higher than 14 illnesses per 1000 swimmers. Until those studies have been completed, EPA should propose interim criteria for the 15, 16, 17, 18 and 19 gastroenteritis rate for freshwater enterococci and *E. Coli*. At a minimum, an interim objective at the 19 potential illnesses level should be considered.

Other Comments by Section

Section 4.4.1 – Section 4.4.1 discusses when it is appropriate to modify a primary contact recreation use to reflect high flow situations (i.e., wet weather flows). Specifically, the *Draft Guidance* states that an intermittent recreation use (e.g., a high flow cutoff) may be appropriate when the water quality criteria associated with primary contact recreation are not attainable for all wet weather events. EPA "anticipates that the use of high flow cutoffs will be primarily applicable to flowing waterbodies and still waters impacted by flowing waterbodies, where high flows are accompanied by high levels of indicator bacteria that can not be controlled without substantial and widespread economic impact."

The *Draft Guidance* lists several issues that should be addressed if a high flow cut off is to be adopted. Included in that list is the completion of a use attainability analysis (UAA), which has shown that additional controls would have "substantial and widespread economic impact." AMSA recommends that EPA outline in the *Draft Guidance* what a state should, at a minimum, have to show to satisfy the UAA requirements for setting high flow cutoffs. AMSA understands that EPA is working to develop guidance to clarify the UAA process, but believes that additional information is needed now specifically for the primary contact recreation scenario.

Section 4.3 – Section 4.3 discusses the problem of indicator bacteria persisting in the environment in tropical climates resulting in high bacterial concentrations that do not correlate with human health risks. Recent work by Dr. Richard Whitman of the U.S. Geological Survey has indicated that this same phenomenon is occurring in wet sand on beaches of the Great Lakes, a temperate climate situation. AMSA recommends that EPA review the recent scientific literature on this topic, and acknowledge that a similar problem may be occurring in temperate climates.

Section 5.1 – AMSA is troubled by the statement in Section 5.1 that a "lack of data should not delay states' and authorized tribes' adoption of *E. coli* and/or enterococci." Before states adopt water quality criteria and develop water quality standards based on those criteria, they must

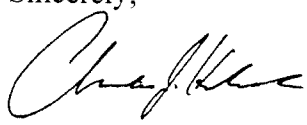
consider whether those criteria and associated uses are appropriate and attainable. Developing water quality standards without supporting data and without regard to attainability, will only force states to back-track through the UAA and total maximum daily load (TMDL) process. Over the past 30 years we have learned how difficult it is to deal with water quality standards that were developed with little or no data. Compliance with bacteria TMDLs will pose significant challenges for municipalities in wet weather events, making it even more important that bacteria criteria are based on sound footing. EPA does suggest a period of overlap, where states would have criteria for fecal coliform and *E. coli*/enterococci, generally one triennial review cycle, and at the same time collect data on *E. coli* and enterococci. EPA also suggests the adoption of a delayed effective date to allow for more time in which to collect data. Nevertheless, EPA should not recommend blanket adoption of criteria in the absence of adequate data.

Section 5.2.2 and 5.4 – AMSA agrees with EPA's recommendation that states use only the geometric mean component of the criteria for National Pollutant Discharge Elimination System (NPDES) water quality-based effluent limits. However, the guidance also states that attainment decisions and TMDLs are to consider both the 30-day geometric mean and the single-sample maximum standards, and details how waste load allocations would be calculated to achieve attainment of both the 30-day and the single-sample standards. AMSA is concerned with the inconsistency between these statements and the Agency's recommendation for using the geometric mean component of the criteria for setting permit limits.

Section 5.5 – Section 5.5 of the document specifies the mTEC method as being the recommended analytical method for determining *E. coli* (see also discussion above on lack of approved test methods). AMSA members who have used the Quanti-Tray method believe it performs better than or at least as well as the mTEC method for *E. coli*. AMSA recommends that EPA consider the Quanti-Tray method as an acceptable alternative. Round robin validation studies of both methods would also be beneficial.

We appreciate the opportunity to comment on the *Draft Guidance*. If you have any questions about our comments, please do not hesitate to call me at 202/833-9106 or via email at chornback@amsa-cleanwater.org.

Sincerely,



Chris Hornback
Director, Regulatory Affairs

EXHIBIT B

amsa

Association of
Metropolitan
Sewerage Agencies

October 1, 2001

W-01-08 Comment Clerk
Water Docket, MC 4101
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: *Announcement of Public Comment Period for Draft National Beach Guidance and Performance Criteria for Recreation Waters, 66 Fed. Reg. 39,510 (July 31, 2001)*

Dear Sir/Madam:

The Association of Metropolitan Sewerage Agencies (AMSA) is pleased to provide comments on the U.S. Environmental Protection Agency's (EPA) draft *National Beach Guidance and Performance Criteria for Recreation Waters (2001 draft Beach Guidance)*. Founded in 1970, AMSA represents the interests of over 260 of the nation's publicly owned wastewater utilities (POTWs). AMSA members serve the majority of the sewered population in the United States and collectively treat and reclaim over 18 billion gallons of wastewater every day. For decades now, AMSA members have worked to ensure their discharges are protective of both human health and the environment. As many of our members discharge to the coastal waters of the U.S., we must ensure that efforts such as the *2001 draft Beach Guidance* are based on sound science and will serve to further improve water quality.

AMSA commends EPA's efforts to protect recreational water users through improved water quality programs, scientific advances, and risk communication. AMSA also appreciates EPA's commitments under the *Beaches Environmental Assessment and Coastal Health Act (BEACH Act) of 2000* to establish performance criteria for beach monitoring and notification programs and to outline the eligibility requirements for program implementation grants. AMSA agrees that robust beach monitoring programs are essential to reducing the risk of disease to users of recreation waters and we urge EPA to build upon the vast expertise some states have acquired in implementing beach monitoring programs when finalizing the guidance

These comments, however, outline for EPA several concerns with the technical content and the clarity of the *2001 draft Beach Guidance.* Although some of our comments encompass issues beyond the scope of the draft guidance, they are nevertheless relevant to the overall success of beach monitoring programs. We hope EPA considers our comments as it proceeds to finalize the document.

I. AMSA Recommends Additional Study of the Bacteria Criteria and Indicator Organisms

The *BEACH Act of 2000* requires states to develop water quality standards based on EPA's water quality criteria for bacteria by April 2004. EPA's current *Ambient Water Quality Criteria for Bacteria* were developed in 1986, over 15 years ago. Unfortunately, the studies cited by EPA in support of the 1986 criteria were based only on a very limited set of U.S. coastal sites. In addition, there were no true control sites in these studies. Control sites – beaches in areas with no known or suspected point sources of human fecal contamination such as stormwater outfalls – are necessary to ensure the results of swimmer surveys accurately characterize impacts.

In the *2001 draft Beach Guidance*, the Agency has only presented a handful of studies of U.S. beaches conducted since 1986 that support the criteria and only one of the studies considers enterococci (Haile et al., 1999). In that single study, Haile focused on storm drain runoff and found "no clear dose-response pattern across increasing levels of bacteriological exposures." Haile also made no judgement or distinction about the superiority of enterococci or E. coli as indicators. AMSA is concerned with the scientific foundation of the criteria and the exclusive reliance on indicators that have not been sufficiently proven and may not be reliable for all coastal environments. It also appears that in the *draft Beach Guidance*, EPA has cited epidemiological studies only to the extent that they support the Agency's recommended standards and criteria. An epidemiology study conducted for the Santa Monica Bay, cited in Chapter 1 of the guidance (Haile et al., 1996), found a significant association between symptoms and the ratio of total to fecal coliform bacteria. However, this fact is not referenced in the *draft Beach Guidance*. AMSA recommends that the final Beach Guidance discuss the disadvantages of relying solely on enterococci and E. coli as indicators for a monitoring program.

Reliable indicators of risk are likely to vary significantly from beach to beach. In fact, the most effective indicator may be as simple as the beach's distance from a storm drain, as was demonstrated by Haile in 1999. The final Beach Guidance should require states seeking grants to conduct comprehensive studies of their recreational beaches to establish a current temporal and spatial picture with regard to a suite of potential bacterial indicators and physical factors, including rainfall, proximity to storm drains, and swimmer density. AMSA recommends that the final Beach Guidance require states to examine the unique characteristics of their coastal waters and select the most reliable indicator for beach monitoring purposes.

Currently, most of the wastewater industry operates under permits with effluent limits for fecal coliform bacteria. Knowledge regarding the effectiveness of current disinfection practices on indicators such as enterococci or E. coli is limited at best. In the *draft Beach Guidance*, EPA instructs states to supplement their basic sampling for these indicators by encouraging point sources (including POTWs) to test their discharges. However, there are currently no approved methods for assessing compliance with the enterococci/E. coli criteria. EPA proposed methods for evaluating these indicators in ambient water in August 2001 (66 Fed. Reg. 45,811), but these methods specifically exclude POTW effluent as an approved sample matrix. Therefore, there remains no proposed or approved method for measuring these indicators in effluent for monitoring or compliance determinations with new limits that may be imposed on POTWs. AMSA recommends that EPA approve methods for testing E. coli and enterococci in effluent matrices before relying on these indicators for beach monitoring programs.

II. AMSA Recommends Additional Clarification and Explanation of Key Issues

AMSA recommends that the final Beach Guidance include discussion of the issues involved with using single sample standards versus the use of a 30-day geometric mean standard. The *draft Beach Guidance* relies heavily on the use of single sample standards of the indicator organisms for taking regulatory actions and instituting public notification measures. Bacteriological monitoring data collected in California indicates that ocean water quality exhibits significant temporal variability, especially when monitoring is conducted in close proximity to dry weather urban runoff discharges, making reliance on single samples problematic.

We also recommend that beach monitoring programs acknowledge sources of bacterial contamination other than anthropogenic sources. Natural sources of fecal organisms can be, and often are, significant. Recent attempts to develop total maximum daily loads for fecal coliform in relatively small watersheds have shown that natural sources (wildlife, migratory birds, wetlands, and domestic animals) often are highly significant contributors and in some cases the major causes for exceeding established bacterial standards. It remains to be seen if similar sources in urban areas (such as pet waste, shore bird waste, and other urban wildlife) are significant contributors to fecal contamination in urban runoff.

III. Conclusion

AMSA recognizes the importance of comprehensive beach monitoring and notification programs, but questions the reliance on indicators of contamination that may not be reliable for all coastal environments. The final Beach Guidance should require states seeking grants to carefully examine the unique characteristics of their coastal recreation waters. EPA should provide states with the flexibility to develop standards and monitoring programs that take into account these nuances. AMSA also encourages the Agency to take advantage of the expertise some states have acquired through implementation of beach monitoring and notification programs. There is a wealth of beach water quality expertise and a significant body of completed scientific studies in California that the Agency should look to when

finalizing the guidance.

Again, we appreciate the opportunity to comment on the development of this guidance and welcome the development of more comprehensive, scientifically-based beach monitoring programs. Please do not hesitate to contact me if you have any questions regarding our comments at 202/833-9106 or via email at *chornback@amsa-cleanwater.org.*

Sincerely,

Christopher Hornback
Manager, Government Affairs

ATTACHMENT

Literature Cited

Haile, R.W. 1996. A Health Effects Study of Swimmers in Santa Monica Bay. Santa Monica Bay Restoration Project, Monterey Park, CA.

Haile, R.W., Witte, J.S., Gold, M., Cressey, R., McGee, C., Millikan, R.C., Glasser, A., Harawa, N., Ervin, C., Harmon, P., Harper, J., Dermand, J., Alamillo, J., Barrett, K., Nides, N. and Wang, G., 1999. The Health Effects of Swimming in Ocean Water Contaminated by Storm Drain Runoff, Epidemiology, 10:355-363.

EXHIBIT C

amsa

Association of
Metropolitan
Sewerage Agencies

May 15, 2000

Geoff Grubbs
Director
Office of Science and Technology (4301)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

RE: AMSA COMMENTS ON DRAFT IMPLEMENTATION GUIDANCE FOR AMBIENT WATER QUALITY CRITERIA FOR BACTERIA

Dear Geoff:

Thank you for the opportunity to comment on EPA's January 2000 *Draft Implementation Guidance for Ambient Water Quality Criteria for Bacteria -- 1986.* The Association of Metropolitan Sewerage Agencies (AMSA) represents the interests of 244 of the country's publicly-owned wastewater treatment agencies, which collectively serve the majority of the sewered population in the United States, and treat and reclaim more than 18 billion gallons of wastewater each day. In addition to their primary responsibility for collecting and treating the Nation's domestic, commercial, and industrial wastewater, AMSA member agencies play a major part in their local communities, often leading watershed management efforts, promoting pollution prevention, water conservation, and recycling, and developing urban stormwater management programs.

As front-line water quality managers, AMSA members foremost goals are to protect public health and our nation's valuable water resources by treating and reclaiming wastewater to meet the ambitious goals of the Clean Water Act. As such, AMSA supports the development and use of an effective indicator organism(s), where appropriate to protect primary contact recreational uses. However, AMSA does have significant issues with the science behind the 1986 criteria, especially the studies used to support EPA's recommended enterococcus criteria, and the impact that the recommended

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enterococcus standard would have on POTW compliance, even in cases where there have been no bacteria-related health impacts due to the discharge of treated wastewater effluents.

AMSA concurs with the May 5, 2000 comments submitted by the Hampton Roads Sanitation District (HRSD), regarding the original derivation of the 1986 criteria, as well as the more recent supporting studies that EPA has used to confirm and validate this criteria. HRSD has echoed the concerns of many AMSA members that the 1986 criteria was developed based on an extremely limited and unconvincing data set, which would be difficult to extrapolate for application to all the nation's waters. In addition, *HRSD's review of 11 supporting studies, which EPA believes confirm and validate the findings of its earlier studies, sheds significant doubt as to the defensibility of the 1986 enterococcus criteria.*

EPA should re-evaluate the context of these studies, review all other studies which have tested enterococcus as a broad based indicator of risk to swimmers and reconcile EPA's continued support of enterococcus as the indicator of choice with the results of these studies. At a minimum, the Santa Monica Bay Restoration Projects's epidemiology study and the study of California coastal monitoring data completed for the California State Water Resources Control Board, "An Analysis of Marine Bacterial Indicator Monitoring Data" (Spear, Robert C., Helen Xu, Steve Selvin, and Robert Cooper, July 1998) should be reviewed carefully. The report to the California SWRB makes a very cogent point in defining the difference between using indicators to measure risk and using indicators to manage risk. Most public agencies (including public health departments) are engaged in managing risk on a daily basis. The study makes it clear that, in California's coastal waters, enterococcus adds nothing to the information offered by total coliform or fecal coliform densities. EPA should abandon its narrow marketing of enterococcus, create a much more geographically broad water quality indicator database, and facilitate the development of a menu of indicators for risk management.

POTW Impacts

The guidance does not discuss the ultimate impact development of effluent limits for the proposed bacterial organisms, E.coli or enterococci would have on the nation's POTWs. Existing treatment works have been designed and constructed to demonstrate disinfection effectiveness using a fecal coliform standard.

Considerable work has been conducted in Oregon on the issue of bacterial indicators. In 1991 the indicator organism in the Oregon water quality standard for bacteria was changed from fecal coliform to enterococci This change prompted the Oregon Association of Clean Water Agencies to conduct a study comparing the fecal coliform and enterococci densities in treated wastewater discharges from 16 treatment facilities. The main conclusion from this study was that, *under existing disinfection procedures, the enterococci standard would be very difficult for wastewater treatment plants to meet. Treatment plant*

effluents were out of compliance with the monthly average 36% of the time, and exceeded the single sample limit on 37% of the tests performed.

In 1992, Oregon reinstated fecal coliform as the indicator organism in the state's water quality standard, pending further study of the issue in the 1992-94 Triennial Review of water quality standards. After much discussion, the advisory committee for the Triennial Review recommended a change in indicator organism to E. coli. *Enterococci was not considered as an appropriate indicator organism because of the longer analysis time required, and the results of the ACWA study, indicating that current disinfection practices at wastewater treatment plants would not result in enterococci densities lower than the standard*. It was estimated that compliance with the enterococci standard would require a significant increase in chlorine usage, with associated environmental and worker health and safety concerns. Chlorine usage to comply with the E. coli standard was estimated to be equal to the chlorine usage to meet the fecal coliform standard. Note that there are not documented health impacts from treated wastewater effluents in Oregon while using the fecal coliform standard - the level of disinfection required to meet the fecal coliform standard therefore appears to be adequate to protect public health. Since the EPA guidance concludes that equal protection is afforded by either the E. coli or the enterococci criteria densities, and E. coli avoids the problems cited above, E. coli was recommended as the indicator organism. There is no public health reason to choose enterococci over E. coli as the indicator organism. The state finally adopted E. coli as the indicator in 1996.

In addition to compliance related issues, there does not seem to be adequate information on the relationship of enterococcus in POTW effluent versus the receiving water. East Bay Municipal Utility District in Oakland, California, has extensively examined receiving water and plant effluent samples for enterococcus during its Chlorine Reduction/Fecal Coliform study. The study indicated that no statistical relationship between enterococcus in the receiving water and enterococcus in the EBMUD effluent (even when samples were collected directly above the outfall). While EBMUD rarely detected anything either in the receiving water or in POTW effluent during the study, on those few occasions when effluent samples showed detectable to high levels, enterococci were not detected in the receiving water. On the other hand, when enterococci were detected in the receiving water, it was not found in the effluent. The study highlights the difficulty in relating POTW discharge and receiving water quality with respect to enterococcus.

Wet Weather Flows

The vast majority of water quality impacts are associated with wet weather flows. Accordingly, the maximum value for bacteria is the critical element of the two water quality criteria. The guidance has not addressed stream flows or high wet weather flows, which significantly effects the maximum criteria and how it is measured, therefore complete comments on this document are considered premature. It should be noted that the maximum criteria represents a daily value (water quality criteria requires a minimum 24-

hours between bacteria samples) and should be related to a daily load based upon daily flows so that a TMDL allocation can be developed. The remaining reserved sections of this document and the forthcoming Assessment Methodology Guidance must address this issue.

Conclusion

AMSA does not believe EPA has adequate scientific support to recommend the use of enterococci criteria for marine waters. The potential impact of these criteria to the nation's POTWs, as well as the costs to the public in terms of unnecessary beach closures, and actions to address impairment, emphasize the need for EPA to invest in additional bacterial indicators research to ensure that decisions are based on the most appropriate data. To date, no perfect indicator organism has been discovered. There are advantages and disadvantages that can be ascribed to the use of any particular organism chosen. Again, AMSA recommends that EPA develop a more geographically broad water quality indicator database, and provide flexibility to the States in the implementation of standards to protect the public from illness related to fecal contamination. If you have any questions, please call me at 202/833-9106.

Sincerely,

Mark Hoeke
Director, Government Affairs

cc: Norm LeBlanc, HRSD
Peter Ruffier, City of Eugene

PROOF OF SERVICE

The undersigned certifies and declares as follows:

I am a resident of the State of California and over 18 years of age and am not a party to this action. My business address is 555 South Flower Street, Suite 3100 Los Angeles, California 90071-2300, which is located in the county where any non-personal service described below took place.

On January 12, 2007, I served a copy of the following document(s):

DECLARATION OF DAVID G. FROMM IN SUPPORT OF NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES' REPLY BRIEF IN SUPPORT OF MOTION TO INTERVENE

on the persons identified on the attached service list:

Service was accomplished as follows.

☐ **By U.S. Mail, According to Normal Business Practice.** On this date, I sealed the above document(s) in an envelope addressed to the above, and I placed that sealed envelope for collection and mailing following ordinary business practices, for deposit with the U.S. Postal Service. I am readily familiar with the business practice at my place of business for the collection and processing of correspondence for mailing with the U.S. Postal Service. Correspondence so collected and processed is deposited the U.S. Postal Service the same day in the ordinary course of business, postage fully prepaid.

☒ **By Personal Delivery by Beverly Hills Express Attorney Services** of the document(s) listed above to the person(s) at the address(es) set forth below.

☒ **By Federal Express Service Carrier.** On this date, I sealed the above document(s) in an envelope or package designated by Federal Express, an express service carrier, addressed to the above, and I deposited that sealed envelope or package in a box or other facility regularly maintained by the express service carrier, or delivered that envelope to an authorized courier or driver authorized by the express service carrier to receive documents, located in Los Angeles, California with delivery fees paid or otherwise provided for.

☐ **By Electronic Mail Transmission With Attachment.** On this date, I transmitted the above-mentioned document(s) by electronic mail transmission with attachment to the parties at the electronic mail transmission number set forth below.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct, and that I am employed in the office of a member of the bar of this court at whose direction the service was made. Executed on January 12, 2007, at Los Angeles, California.

Vicki Scott

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