HOW TO FIX THIS POLICY / ELIMINATE EXCESSIVE COST IMPACTS AND CONFORM TO STATUTORY PROVISIONS

1. Reiterate bypass rule not intended to impose costs inconsistent with development of technology-based guidelines.

   - Feasibility analysis will be "knee of the curve" costs v. pollution reduction benefits

2. Clarify biological treatment is not required or particularly effective for addressing peak flows.

   - Non-biological treatment like ballasted flocculation is acceptable and not considered to be a "bypass" or blending (No throw away facilities / NACWA issue also)

3. Clarify that the bypass rule was intended to provide a defense under emergency conditions such as localized flooding, not intended to require additional treatment / retention basins under those conditions. Establish presumption if blending occurs less than 1% of the time or under localized flooding conditions, bypass rule objective are met.

4. Clarify that where I/I meets definition of non-excessive I/I or demonstrated ineffective in peak flow reduction, additional I/I controls are not required under the bypass rule.

5. Clarify that the policy does not require processing all peak flows through AWT / nutrient reduction facilities. Such facility design should follow accepted engineering practice.

USEPA

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Memorandum

DATE: February 20, 2001
PROJECT: ECS11-3

TO: Tim Dwyer
USEPA

FROM: Hans Holmberg
CC:

SUBJECT: DRAFT National Cost Impact Analyses

This memorandum presents the results of cost impact analyses conducted to evaluate nationwide costs of fully treating peak wet weather flows at publicly owned wastewater treatment facilities (POTWs). This work was performed under Contract Number 68-C-00-116, Work Assignment No. WW-0-04, Assessment of Effects of Excess Wet Weather Flows on the Operation of Wastewater Treatment Facilities, Tasks 5 and 6.

Two separate cost impact analyses were conducted. The first analysis was conducted to evaluate cost impacts for communities with combined sewer overflows (CSOs). Tetra Tech performed the CSO analysis using EPA's GPRACSO model. The second analysis was conducted to evaluate cost impacts for communities with sanitary sewer overflows (SSOs). Metcalf & Eddy performed the SSO analysis using EPA's STORM model. Detailed discussions of both models are included as attachments to this memorandum.

Both the GPRACSO model and the STORM model are complex numerical models that were developed with data assembled in the Clean Water Needs Survey. The models simulate rainfall-runoff and sanitary sewer flows in the collection systems of each CSO and SSO community included in the Clean Water Needs Survey database. The models also include cost routines to estimate costs of alternative treatment scenarios for reducing overflows. While the models are similar in the above respects, they are also quite different with regard to the numerical framework, process representation, time and space scales, and underlying assumptions in the cost routines. Both models are also limited by the availability of site-specific data required to simulate each and every CSO and SSO system in the nation.

Tetra Tech and Metcalf & Eddy were requested to conduct specific model simulations and provide results that could be used to assess the cost impacts of requiring POTWs to increase treatment capacity such that peak wet weather flows were fully treated. Three specific scenarios were simulated. The first scenario was considered a baseline scenario. This scenario did not include any additional treatment beyond what was included in the Clean Water Needs Survey database for each facility. The second scenario called for doubling the secondary treatment capacity of each POTW. This scenario is based on an assumption that the conveyance capacity to the headworks of each POTW is limited to twice the existing secondary treatment capacity. Given this assumption, wet weather flows reaching the POTW would be fully treated in this scenario. Note that this scenario does not fully treat all wet weather flows in the collection system. Wet weather flows

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EXHIBIT
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exceeding the secondary treatment capacity are assumed to overflow in the collection system. The third scenario included increased wet weather storage facilities at the POTW such that the volume of wastewater treated at the POTW is approximately equal to that simulated in the second scenario. Additional scenarios were simulated using each of the models and are described in detail in the attachments.

The results of the modeling analyses are summarized in the following table. Complete descriptions of the results of each model and scenario are presented in the attachments.

Scenario	Wet Weather Overflow/Bypass Volume (million gallons per year)		Additional Volume Treated (million gallons per year)		Total Capital Cost ($ in billions)	
	CSO	SSO	CSO	SSO	CSO	SSO
Baseline	1,468,040	172,431	0	0	0	0
Double Secondary Capacity	1,270,243	101,712	197,797	70,718	$79.2	$52.8
Increase Wet Weather Storage	1,260,248	101,199	207,792	71,232	$9.1	$13.4

Note that the cost is a total capital cost but does not include land acquisition costs or operation and maintenance expenditures. A description of the cost routine of each model is included in the attachments.

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Estimate of additional costs for POTWs if blending is not allowed

I. CSO facilities:

- 1992 cost estimates to provide biological treatment for all CSOs (except 1 to 2 events per year) equaled $220 billion. Most of the costs include building storage facilities for wet weather flows

- Assuming 40%-60% of the wet weather flows in combined sewer systems reach POTWs (NYC's estimates 60-80%, CSO Partnership estimates 40-70%), the 1992 estimates can be adjusted proportionally (basic technology remain the same - building storage facilities) and resulting in an estimated costs of $88 - $130 billion. This estimate could increase if CSO facilities implement the nine minimum controls to divert more flows to POTWs. With good operation of Real-Time controls, additional 50% of wet weather flows could reach POTWs, and therefore, the costs could increase proportionally.

II. SSO facilities

- 1996 SSO nation control costs estimates to achieve 1 wet weather overflow in five years equal $88 billion. This cost estimate assume reducing I/I flows about 50%, building additional storage facilities and some additional treatment capacities.

- Limited data indicate about 80 % of wet weather flows in a leaky sewer systems reach POTWs.

- Assuming 90 - 95% of wet weather flows nationwide reach POTWs, the minimum estimate for additional costs at POTWs therefore is 90-95% of the national SSO control cost estimate, or $79 - 83 billion

- The costs estimate could be higher under existing conditions, since more wet weather flows probably reach POTWs currently without the I/I reduction assumed in the SSO control cost estimate

USEPA

Estimate of additional costs for POTWs if blending is not allowed

I. CSO facilities:

- A CSO cost estimating model was created in 1993 to provide estimated costs for several nationwide CSO control goals to support the Needs Survey, and eventually one was selected to support the 1994 CSO Policy and also included in the Needs Survey.
- CSO cost model uses available data from all CSO facilities (one facility is defined as a combined sewer system that is serviced by a treatment plant - New York City has 14 facilities), and estimates the CSO control cost for each CSO facility. The summary costs of all the facilities in the nation thus become the national costs (or Needs).
- The cost model uses national rainfall data to select design storms (originally divided the nation into 5 rainfall regions, later increased to 20 rainfall regions), population and service area of CSO facilities. Rainfall and service area generated rainfall volume. Based on NURP (national urban runoff program - EPA mid 1980's) data, urban population was used to estimate the percent impervious area, and the runoff coefficient, and thus the amount of runoff. The amount of runoff that exceeded available storage capacity in sewer systems became CSOs.
- The cost model assumed 4 different CSO control levels:
  1). Storage and full secondary treatment for all but 2 overflows per year in one facility ($220 billion - 1994 dollars)
  2). Storage and full secondary treatment for all but 4 - 6 overflows per year ($175 billion)
  3). Storage and full secondary treatment for all but 8 - 10 overflows per year ($115 billion)
  4). Flow through primary sedimentation for all but 4 - 6 events per year (about 85% of CSOs are treated - $42 billion)
- Option 4 was selected for inclusion in CSO Policy and was called the Presumptive Approach - meaning presumed to meet the water quality standards. The $42 billion was used in the subsequent Needs Survey as the CSO Needs.
- Option 1 was based on providing storage for all CSOs (except 2 events a year) for full secondary treatment following storm events, and the estimated national cost was $220 billion in 1994 dollar. The estimated portion of CSOs that reach treatment facilities is then used to calculate the additional costs that will be needed at POTWs servicing combined sewer systems, if blending is not allowed at these POTWs. The portion of CSOs that does not reach POTWs can be handled with on-site storage or treatment, and is not part of calculation.
- Assuming 40% - 60% of the wet weather flows in combined sewer systems reach POTWs (NYC's estimate 60% - 80%, CSO Partnership estimates 40% - 70%), the $220 billion estimated costs can be adjusted proportionally (basic technology remain the same - building storage facilities). Therefore, the estimated additional costs to the POTWs servicing combined sewer systems, if blending is not allowed, would be 40% - 60% of the $220 billion, or $88 billion - $130 billion. This estimate could increase if CSO facilities implement the CSO Policy to maximize treatment capacities by diverting more flows to POTWs. With good operation of real-time controls in the sewer systems, additional 50%

of wet weather flows could reach POTWs, and the costs could increase proportionally.

II. SSO facilities

- In 1996, EPA used a SSO cost estimating model to estimate the national SSO control costs. The cost model took into consideration the rainfall data (dividing the nation into 5 rainfall regions), the service area, the existing available POTW treatment capacity, the available storage capacity in main sewer systems, and the infiltration/inflow (I/I) coefficient (a function of existing sewer performance) of the sewer systems.
- The cost model was based on the assumptions that reducing SSOs could be achieved by reducing I/Is, increasing storage capacities (i.e., storage tanks), and increasing treatment capacities. The model estimated the SSO control costs for each of the nation's separate sewer systems by determining the least costly combination of reducing I/I flows, increasing storage capacity and increasing treatment capacity. The summary of the estimated costs of all the sewer systems in the nation thus became the national estimate.
- The model assumed that on a system-wide basis, I/I flows could only be reduced by 50% cost-effectively. The rest of the costs would be building more storage and treatment capacities (it was determined that building storage facilities was less costly than building treatment facilities) to ensure all captured SSOs receive full secondary treatment at POTWs.
- The cost model estimated that the national SSO control costs to achieve one wet weather overflows in five years equaled $88 billion. Like estimate for POTWs servicing combined sewers, the portion of wet weather flows that will reach POTWs is used to determine the additional costs at POTWs servicing separate sewers, if blending is not allowed, since storage facilities would then be needed at the treatment facilities.
- Limited data indicate about 80% of wet weather flows in a leaky sewer systems reach POTWs.
- Assuming 90% - 95% of wet weather flows nationwide reach POTWs, the estimate for additional costs at POTWs therefore is 90-95% of the $88 billion national SSO control cost estimate, or $79billion - $83 billion.
- The cost estimate could be higher under existing conditions, since more wet weather flows probably reach POTWs currently without the I/I reduction (50% reduction in the model) assumed in the SSO control cost estimate

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Incremental costs for Bypass Elim... ...n
Based On Case Settlements and Judgements
DRAFT 02/0703

Case Name	Region	~Service Population	Median Household Income	Description of Measures and Costs	Annualized Costs	Incremental Cost per Household (per year)
New Albany, IN	V	14,688 households	$38,800	Additional pump station, and upgrades to the treatment plant Costs of eliminating bypass at the headworks $20.6 mill Costs of eliminating upstream bypasses $15.8 mill	$1.50 mill $1.15 mill	$102 (0.26% of MHI) $78 (0.20% of MHI)
Indianapolis, IN (proposed)	V	319,821 households	$37,870	Additional roughing filters to improve secondary during wet weather, and two 30 MG earthen storage basins. Will provide an additional 100 MGD of secondary capacity and 60 MG of storage. Total cost $66.271 mill	$4.82 mill	$15 (0.04% of MHI)
Toledo, OH	V	453,000	$37,000	Upgrade headworks, add a 60 MG storage basin, add an additional secondary clarifier, and a 185 MGD ballasted floc wet weather treatment facility. Total Cost $157 mill	$11.41 mill	$76 (0.20% of MHI)
Indiana Boro, PA	III	17,275	38,800	Main interceptor upgrade ($700,000), 2.5 MG offsite/upstream storage ($1.9 mill), and plant upgrades ($11.4 mill), additional primary clarifier capacity (est $1.5 mill). Total Cost $15.5 mill	$1.13 mill	$196 (0.50% of MHI)

Notes:

Where population rather than households was known, 3 people per household was assumed
Financing was assumed to be 30 years at 6%
O&M costs were assumed to be negligible

ENFORCEMENT CASES

Utility Information from Blending Comments, March 4, 2004

Communities Providing Cost Information				
Jurisdiction	***Doc. No.***	***Blending now?***	***Cost of eliminating blending***	***Additional cost or technology information***
City of Flint, MI	0440	Yes	"Millions" to add treatment capacity that would be used one or twice per year	Practices "virtual blending" (in-stream blending, in which mixing occurs in the receiving water) as authorized in NPDES permit
Knoxville Utilities Board, TN	0460	Yes	"Tens of millions of dollars" Storage would cost $70 million	Received federal funding for construction of two POTWs using blending Currently in the midst of a five-year, $60 million plan to improve collection system
Wheaton Sanitary District, IL	0485	Yes	$340,000 to connect existing wet weather discharge point to POTW treatment train (to eliminate in-stream blending) "Over $6 million dollars" for storage plus acquisition of 10 acres of land. Facilities of this size would be used once every 10 years.	Practices in-stream blending. Has a seasonal FC limit.
Genesee County Drain Commissioner's Office, MI	0486	Yes	"Millions of dollars at our facility alone"	Blends 1-6 times per year
Miami-Dade Water and Sewer Department, FL	0645	Unclear, would blend if policy finalized	Modifications to existing and planned facilities with no blending would cost $500 million	Department has spent $900 million over the last 10 years to update collection and treatment facilities. Department wants to use physical/chemical treatment before blending.
Washington-East Washington Joint Authority, PA	0652	Yes	Construction of additional facilities would cost $12 million.	NPDES permit has approved blending since 1991. Authority has no NPDES violations during wet weather since 1991. Blending occurs during laess than 1% of operation, amounts to thousands of gallons.
East Bay Municipal Utility District, CA	0675	Yes	$1.5 billion	District and member communities have spent $710 million to reduce I/I and storm water impacts since 1989.
City of Portland Environmental Services, OR	0801	Yes	Full secondary costs are "prohibitive in the short term. Implementing all of the elements of the City's 2040 plan would cost hundreds of millions of dollars in capital costs concurrent with or immediately on the heels of the City's $1 billion CSO abatement program."	City's POTWs were designed to blend.

ATTACHMENT 4

Various comments

Metropolitan Wastewater Management Commission, OR	0807	Yes	Costs for addresing wet weather flows through different scenarios through 2025: Full secondary for all flows - $110 million All flows through primary, some peak flow diverted around secondary - $32 million Portion of peak flow through primary/secondary, remaining peak flow through high rate clarification - $23 million Portion of peak flow through primary, remaining peak flow routed from headworks to secondary - $10 million	POTW was designed to blend, but blending is not recognized in NPDES permit. Treatment facility design including blending was approved by State.
Rahway Valley Sewerage Authority, NJ	0817	No, would blend if policy finalized	Additional facilities would cost $33.4 million, plus unknown costs for land.	Currently discharges flows over 60 mgd through two CSO outfalls. Outfalls scheduled to be closed. Plans to blend under approved Consent Order and Final Judgement. This could be adversely affected if blending is disallowed.
State of Pennsylvania Department of Environmental Protection	0825	n/a	For the last 10 years, Pennsylvania and other states have required programs of initial I/I removal with follow-up wet weather retention tanks. This approach is both environmentally protective and relatively moderate in cost. Between 15 and 20 systems now have retention tanks and in many of these cases the tanks were built for about $1.50 per gallon stored.	
Little Blue Valley Sewer District, MO	0886	Yes	We estimate a cost of more than $100 million for construction of additional wastewater treatment facilities.	40 mgd plant sometimes receives wet weather flows in excess of 300 mgd.
City of Waynesboro, VA	0891	unclear	Treatment facility upgrade estimated at $25-30 million, "three to four times greater than if blending were allowed."	

Utilities Acknowledging Blending in Comments			
Jurisdiction	***Doc. No.***	***Blending now?***	***Additional cost or technology information***
Las Gallinas Valley Sanitary District of Marin County, CA	0363	Yes	District has spent over $6.3 million to reduce I/I, plans to continue blending.
Water Resource Protection, City of South Portland, ME	0417	Yes	Blends 7-8 times per year
Monterey Regional Water Pollution Control Agency, CA	0424	Yes	Received federal funding for construction of the POTW
Central Marin Sanitation Agency	0508	Yes	Received federal funding for construction of POTW
City of Rome, GA	0509	Yes	City is currently under Consent Order; EPA Region 4 is requiring secondary treatment for all flow City has spent $41 million on collection system repairs since 1988
Downers Grove Sanitary District, IL	0517	Yes	Blending has been recognized in the district's NPDES permit since 1977
Massachusetts Water Resources Authority	0467	Yes	MWRA's new secondary treatment facility was "sized, designed, and built under the direct guidance of EPA"
Metropolitan St. Louis Sewer District, MO	0479	Yes	
Upper Blackstone Water Pollution Abatement District, MA	0481	Yes	Planning in 2001 showed blending to cost one-third of treatment options for peak flows Blending four times per year
City of Gresham, Department of Environmental Services, OR	0523	Yes	Received federal funding for construction of POTW, but blending is not recognized in the NPDES permit
City of McMinnville, Community Development Department, OR	0554	Yes	POTW was designed to blend, but blending is not recognized in the NPDES permit
Greater Lawrence Sanitary District, MA	0555	Yes	Finalization of policy will allow district to proceed with plans under its LTCP. Completion of the LTCP will reduce CSO volumes by 50 percent. District has severe economic limitations that would be exacerbated without the blending policy.

TML

Appendix A:

Cost Estimates to eliminate flow blending in selected Tennessee cities:

City A:
The City of Knoxville, as noted in the separate letter submitted to the committee by the City of Knoxville operates three wastewater plants. The cost to provide biological treatment for all flows at just one of the plants, Kuwahee plant, would be in excess of $100,000,000.00 dollars with little if any improvement in the discharged water- the plant currently meets its NPDES permit limits and was built with EPA grant funds. Note that Knoxville is currently in the process of implementing major system improvements as mandated by EPA at the rate of $1,000,000.00 per week for the next ten years to eliminate all wastewater overflows. Source: City of Knoxville.

City B:
The City of Maryville currently has provisions for blending of peak wet weather flows and is awaiting the blending policy guidance before completing plans for plant expansion. The current biological capacity is 10MGD – capable of blending and meeting NPDES permit limits up to 41 MGD. The cost to modify to treat biologically 41 MGD is $18,300.00.00. Source: City of Maryville

City C:
The City of Cookeville currently has a plant capacity of 14.0 MGD biological with provisions to blend for a total capacity of 30 MGD. The cost to modify to treat 30 MGD biologically is $1,540,000.00. Source: City of Cookeville.

City D:
Plant Capacity currently 3.0 MGD biological with provisions to blend for a total capacity of 10.0 MGD. The cost to convert to treat 10 MGD biologically is $4,255,000.00. Source: J.R. Wauford and Company, Inc.

City E:
Plant Capacity currently 2.7 MGD biological with provisions to blend for a total capacity of 5 MGD. The cost to convert to treat 5 MGD biologically is $3,000,000.00 Source: J.R. Wauford and Company, Inc.

Total cost for the five cities listed – $127,000,000.00.

This number represents only five of the many cities within the State of Tennessee that currently use modified flows within their plant during peak wet weather events and meet their NPDES Clean Water Act discharge limits. The ultimate statewide costs of a blending prohibition would be much greater.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 8, 2002 OFFICE OF WATER

John C. Hall
Hall & Associates
Suite 203
1101 15th Street, N.W.
Washington, D.C. 20005-5004

Dear Mr. Hall:

This is a partial response to your October 25, 2001, letter which requested information under the Freedom of Information Act. EPA has assigned this request the number HQ-RIN-00459-02. This partial response addresses question 3 from your letter, in which you requested information pertaining to:

Bypass Regulation

3 Any document developed as part of the bypass rule adoption indicating that the bypass regulation intended to restrict the ability to use blending as a wet weather flow management option at POTWs.

Response

Under the NPDES regulations, bypass is defined as 'any intentional diversion of waste streams from any portion of a treatment facility'. The bypass provision prohibits bypasses except in limited circumstances where the bypass is for essential maintenance and does not cause effluent limitations to be exceeded (see 122.41(m)(4) and (m)(2)). A similar bypass provision has been incorporated into the pretreatment regulations at 40 CFR 403.17.

EPA has no documents from the promulgation of the bypass provisions that indicate that the bypass rule was intended to preclude the use of blending as a wet weather flow management option. However, EPA has indicated that "the bypass regulation is a general requirement which, although it works in conjunction with a categorical [treatment] standards, is not itself an effluent standard . . . the bypass provision merely 'piggybacks' existing requirements, it does not itself impose costs that have not already been taken account in development of categorical standards" (53 FR 40609 (October 17, 1988)) "The bypass regulation is *not* a *de facto* effluent limitation" (*NRDC v EPA* (822 F.2d 104, 123)) [emphasis in opinion]. " The bypass provision does not dictate how users must comply because it does not dictate what [treatment] technology the user must install. . . Instead, the user must operate the treatment system in a manner consistent with appropriate engineering practice."(53 FR 40609 (October 17, 1988)). "The [bypass] regulation

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thus ensures that treatment systems chosen by the permittee are operated as anticipated by the permit writer, that is, as they are designed to be operated and in accordance with the conditions set forth in the permit." *NRDC v. EPA* 822 F.2d 104, 122 (D.C. Cir.1987).

As noted in my April 5, 2002 partial response to FOIA HQ-RIN-00459-02, there is no information on the record to the secondary treatment regulation that indicates that EPA considered restricting the practice of blending primary treated peak flows with other flows receiving biological treatment as a wet weather flow management option for achieving compliance with secondary effluent limitations. As stated in the April 5 response, in general the secondary treatment regulation itself does not address the type of technology used to achieve secondary treatment requirements. The secondary treatment requirements are in the form of 7-day and 30-day average effluent concentrations and a 30-day average percent removal requirement. With the exception of alternative requirements for facilities eligible for treatment equivalent to secondary treatment, the secondary treatment regulations do not specify the type of treatment process that must be used to meet secondary treatment requirements nor do they preclude the use of non-biological facilities.

EPA does have other information relating to the purpose and scope of the bypass provision. Please let me know if you want to review any of these materials, or would like copies of any of the materials. A partial summary of some of the information follows.

In promulgating the bypass regulation, EPA indicated, "[t]he bypass provision was intended to accomplish two purposes. First, it excused certain unavoidable or justifiable violations of permit effluent limitations, provided the permittee could meet the bypass criteria. Second, it required that permittees operate control equipment at all times, thus obtaining maximum pollutant reductions consistent with technology-based requirements. Without such a provision, discharges could avoid appropriate technology-based control requirements." (49 FR 38036 (Sept. 26, 1984)).

After promulgation, the bypass provision was challenged, and ultimately upheld by the court in *NRDC v. U.S. EPA* (822 F.2d 104, 122 (D.C. Cir.1987)). The NRDC court found that "the bypass regulation does not, in fact, dictate that a specific treatment technology be employed; instead, the regulation requires that a system be operated as designed and according to the conditions of the NPDES permit." (822 F.2d 104, 123). The *NRDC* court made a distinction between a regulation that prohibited permittees from "shut[ing] off their treatment facilities and "coast" simply because they were momentarily not in danger of violating effluent limitations" and "dictat[ing] a specific treatment technology be employed". EPA has indicated that the bypass "provision thus requires NPDES permittees to operate their entire treatment facility at all time." (53 FR 40607, October 17, 1988).

The court in *U.S v. City of Toledo, Ohio* (63 F.Supp.2d 834 (N.D. Ohio 1999)) provided "that one focus of the bypass prohibition is to ensure the constant operation of all *existing* equipment, . . . [and] another focus is to avoid any violations of permit effluent limitations".

[emphasis added]. In the Toledo case, the court used these two focusses of the bypass provision to justify requiring, in addition to the use of existing equipment, the permittee to provide additional capacity that was necessary to avoid violations of permit effluent limitations.

"[T]he National Pollutant Discharge Elimination System (NPDES) regulations provide sufficient flexibility for permit writers to account for the designed-in intentional diversion of wastewater around a treatment unit without triggering bypass in special or unique situations when writing permits." (March 12, 1997 letter from EPA Water Management Division to Lial Tischler)

The preamble to the 1984 bypass regulations provides, "Seasonal effluent limitations which allow the facility to shut down a specific pollution control process during certain periods of the year are not considered to be a bypass. Any variation in effluent limits accounted for and recognized in the permit which *allows a facility to dispense with some unit processes under certain conditions is not considered bypassing*." [emphasis added]

In addition, 40 CFR 122.41(e) provides that the permittee shall at all times properly operate and maintain all facilities and systems of treatment. 40 CFR 122.41(e) requires the operation of backup and auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

EPA also has some limited guidance on the term 'essential maintenance' that appears in the bypass provision. When promulgating the bypass provision, EPA indicated that "[g]enerally, maintenance is that which is necessary to maintain the performance, removal efficiency and effluent quality of the pollution control equipment." (Sept. 26, 1984).

EPA has information from Water Environment Manuals of Practice that provide that:

- where peak flows approach or exceed the design capacity of a treatment plant they can seriously reduce treatment efficiency[1].

- Activated sludge systems are particularly vulnerable to high volume peak flows. Peak flows that approach or exceed design capacity of an activated sludge unit shift aeration basin solids inventory to the clarifiers and can lead to excessive solids losses (i.e., wash out the biological mass necessary for treatment)[2].

- Shifting solids from the aeration basin to the clarifiers lowers treatment rates until after

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1 *Design of Municipal Wastewater Treatment Plants* Fourth Edition, 1998, Water Environment Federation Manual of Practice 8, ASCE Manual and Report of Engineering Practice No. 76, Volume 2, page 11-5.

2 *Design of Municipal Wastewater Treatment Plants* Fourth Edition, 1998, Water Environment Federation Manual of Practice 8, ASCE Manual and Report of Engineering Practice No. 76, Volume 2, page 11-6.

flows have decreased and the solids inventory are returned to the aeration basin. If the clarifier experiences excessive loss of solids, treatment efficiencies can be lowered for weeks or months until the biological mass in the aeration basin is reestablished. In addition to these hydraulic concerns, wastewater associated with peak flows may have low organic strength, which can also decrease treatment efficiencies.

There are a number of design and operational options routinely employed by POTWs to handle peak wet weather flows without an excessive loss of solids from the clarifiers[3]. These include utilizing the full capacity of the biological treatment unit and providing primary treatment for additional flows where primary treatment capacity exceeds the capacity of the biological treatment unit. Excess flows receiving primary treatment are typically either discharged directly to receiving waters, with or without disinfection, or recombined with the effluent from the biological units, disinfected and discharged.

Please call me at (202) 564-0742 if you have any questions regarding this response.

Sincerely,

Kevin Weiss
Water Permits Division
Office of Wastewater Management

---

3 See *Design of Municipal Wastewater Treatment Plants* Fourth Edition, 1998, Water Environment Federal Manual of Practice 8, ASCE Manual and Report of Engineering Practice No. 76, Volume 2, page 11-5; *Prevention and Control of Sewer System Overflows* Second Edition, 1999, Water Environment Federation Manual of Practice FD-17.

Appendix A

EPA DOCUMENTATION CONFIRMING THAT BLENDING IS ALLOWABLE UNDER EXISTING REGULATIONS

To Testimony of
John C. Hall, Esq.
Hall and Associates
Washington, DC

On behalf of
Tennessee Municipal League
Pennsylvania Municipal Authorities Association
New Jersey Association of Environmental Authorities
League of Kansas Municipalities
Coalition of Greater Minnesota Cities

Before
Untied States House of Representatives
Committee on Transportation and Infrastructure
Subcommittee on Water Resources and Environment

April 13, 2005

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INTRODUCTION

Blending generally refers to the wet weather flow management practice where primary treatment units are sized to accommodate greater hydraulic flows than the biological units so greater flows can be effectively treated. Peak wet weather flows exceeding the capacity of a treatment unit (*e.g.*, biological unit) are routed around that unit, blended together with the effluent from that unit prior to disinfection and discharge. The blended flows meet applicable permit effluent limitations at the final discharge location. This plant design and operational method has been recommended by the engineering community for decades to cost-effectively design municipal facilities, minimize collection system backups/overflows and ensure that biological systems are protected from process disruption that could be caused by transient peak flow conditions. Through the construction grants program, EPA accepted and promoted this design practice as a means to avoid over-sizing municipal treatment works.

Some environmental advocacy groups are now claiming that existing regulations require the Agency to restrict or preclude blending. From a review of the relevant EPA and court documents pertaining to the secondary treatment and bypass regulations, it is clear that the existing rules do not restrict the practice of blending or seek to impose upon municipalities the huge costs associated with a restriction on blending. There is not a single document identified by EPA in the rulemaking records to the contrary. Moreover, as EPA generally lacks authority under the Clean Water Act to dictate plant design, interpreting existing regulations to restrict or preclude this design practice for processing peak wet weather flows would be clearly contrary to the Act. Blending is a lawful approach to permit compliance that is not restricted by the Act or its implementing regulations.

I. SECONDARY TREATMENT REGULATIONS NEVER INTENDED TO PRECLUDE BLENDING

A. THE CLEAN WATER ACT DOES NOT DICTATE TECHNOLOGY – THE CHOICE OF HOW TO MEET THE PERMIT LIMITS IS UP TO THE PERMITTEE. BIOLOGICAL TREATMENT OF ALL FLOWS IS NOT REQUIRED

Summary: Through numerous EPA materials, including OGC opinions, regulatory preamble, briefs, case law, admissions and correspondence the Agency readily acknowledges that it does not have the authority to dictate to a municipality how it should design its plant to meet secondary treatment requirements. The choice of technology and plant design is up to the discharger and biological treatment of flows is not required. Thus, it is clear that the Agency does not possess the authority to preclude or restrict this design practice as long as applicable effluent limitations are met.

1. **OGC Opinions**: OGC opinions state that EPA is without authority to prescribe specific plant design or technology. A 1975 opinion notes:

> The Congressional history demonstrates that EPA is not to prescribe any technologies [and that] it is not within authority of the Regional Administrator to define particular treatment methods.

Similarly, a 1980 OGC opinion states:

> [T]he effluent limitations in the regulations may be met by the permittee through any lawful means . . . .
>
> * * * *
>
> [The discharger] argues that under the Clean Water Act the choice of an appropriate control technology to meet effluent limitation must be left to the regulated industry. I agree . . . . EPA is precluded from imposing any particular technology on a discharger.[1]

2. **Regulatory Preamble**: The preamble to EPA's secondary treatment regulations similarly states that the choice of technology is left to the permittee. The preamble from the 1980 NPDES regulations notes that:

> Permittees may meet their permit limits by selecting any appropriate treatment equipment or methods . . .

The 1983 preamble states that:

> With the exception of the SS adjustment for WSPs [waste stabilization ponds], the current secondary treatment regulation itself does not address the type of technology used to achieve secondary treatment requirements.[2]

3. **Case Law**: Federal courts have similarly stated that:

> [B]y authorizing the EPA to impose effluent limitations only at the point source, the Congress clearly intended to allow the permittee to choose its own control strategy.

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[1] *In the Matter of the National Pollutant Discharge Elimination System Permit for Blue Plains Sewage Treatment Plant*, Decision of the General Counsel on Matters of Law Pursuant to 40 C.F.R. §125.36(m), No. 33 (October 21, 1975) at 12-13 and *In re Borden, Inc.*, Decision of the General Counsel on Matters of Law Pursuant to 40 C.F.R. §125.36(m), No. 78 (Feb. 19, 1980), respectively.

[2] 45 Fed. Reg. 33535 (May 19, 1980) and 48 Fed. Reg. 52259 (Nov. 16, 1983), respectively.

and

> The [plaintiffs] correctly notes that Congress sought to avoid requiring specific technologies and instead to encourage experimentation.

and that EPA cannot

> transmogrify its obligation to regulate discharges into a mandate to regulate the plants or facilities themselves. To do so would unjustifiably expand the agency's authority beyond its power perimeters.[3]

4. **EPA Briefs Submitted To Federal Courts**: In *PMAA et. al. v. Whitman et al.*, EPA's Motion to Dismiss dated October 25, 2002 states:

> The 'secondary treatment' standards promulgated by EPA are thus expressed in terms of the limitations that must be achieved, and do not dictate the type or form of technology that may be used to attain the limitations.[4]

Similar statements have been made in subsequent briefs filed in this litigation.

5. **Assistant Administrator for Office of Water Letter to Congressman Gekas**: Among various responses to Congressional inquiry, the Assistant Administrator for EPA's Office of Water confirmed that biological treatment is not required:

> **Do the secondary treatment regulations preclude the use of non-biological facilities that otherwise meet secondary treatment objectives?**
>
> No. The secondary treatment regulations define minimum levels of effluent quality for publicly owned treatment works (POTWs). These requirements are in the form of 7-day and 30-day average effluent concentrations and a 30-day average percent removal requirement. With the exception of alternative requirements for facilities eligible for treatment equivalent to secondary treatment, *the secondary treatment regulations do not specify the type of*

[3] *AISI v. EPA*, 115 F.3d 979, 996 (D.C. Cir. 1997); *Rybachek v. United States EPA*, 904 F.2d 1276, 1298 (9th Cir. 1990) and *NRDC v. EPA*, 859 F.2d 156, 170 (D.C. Cir. 1988), respectively.

[4] EPA Motion to Dismiss Plaintiffs' and Intervenor's Complaints and Memorandum of Points and Authorities in Support Thereof at 6, filed in *Pennsylvania Municipal Authorities Association et. al., v. Whitman et. al.* (D.D.C. Case No. 1-02-01361) (hereinafter *PMAA v. Whitman*).

treatment process that must be used to meet secondary treatment requirements nor do they preclude the use of non-biological facilities. (Emphasis added.)[5]

6. **EPA Admissions in *PMAA v. Whitman***: EPA's January 31, 2003 Admissions state that the secondary treatment regulations were not intended to require all flows to be processed through biological treatment:

> EPA admits that after having made reasonable inquiry, it has not located to date any documents in the record for the secondary treatment rule that show that 100 percent of all flows must be processed through biological treatment. [6]

CONCLUSION: Since 1975, EPA has been clear that the choice of technology for meeting applicable effluent limitations is up to the permittee. Biological treatment is not required to be used by municipal facilities to treat any or all of the incoming wastewater flow.

B. SECONDARY TREATMENT REGULATION NEVER INTENDED TO RESTRICT BLENDING AS AN ACCEPTABLE METHOD TO PROCESS PEAK FLOWS

Summary: A review of the rulemaking record pertaining to the secondary treatment regulation indicates that EPA never intended for such regulation to restrict blending. EPA Freedom of Information ("FOIA") responses and admissions in the federal lawsuit reflect such conclusion.

1. **EPA FOIA Response**: EPA's April 5, 2002 response states:

> There is no information on the record to the secondary treatment regulation that indicates that EPA considered restricting the practice of blending primary treated peak flows with other flow receiving biological treatment as a wet weather flow management option for achieving compliance with secondary treatment effluent limitations. As stated above, in general the secondary treatment regulation itself does not address the type of technology used to achieve secondary treatment requirements.

* * * *

[5] March 2, 2001 letter from Diane Regas, Acting AA, Office of Water, to the Honorable George W. Gekas.

[6] EPA's Responses to Plaintiffs' First Requests for Admissions, ¶ 26 at 17, filed in *PMAA v. Whitman.*

EPA has no documents showing that 100 percent of all flows must be processed through biological treatment.[7]

2. **EPA Admissions in *PMAA v. Whitman***: EPA's January 31, 2003 Admissions in *PMAA v. Whitman* state that EPA never intended to restrict blending:

> EPA admits that after reasonable inquiry it has not as of this date located any information within the record to the secondary treatment regulation that EPA specifically considered restricting the practices of blending primary treated peak flows with other flows receiving biological treatment as a wet weather flow management option for achieving compliance with secondary treatment regulations.[8]

CONCLUSION: The secondary treatment regulation was never intended to restrict blending. If blending is not restricted by the secondary treatment regulation, the remaining issue is whether blending is restricted by the bypass regulation.

C. PROCESSING OF PEAK FLOWS IS A RECOGNIZED LIMITATION OF BIOLOGICAL TREATMENT - BLENDING IS A LONG-STANDING ACCEPTED ENGINEERING SOLUTION TO HANDLE PEAK WET WEATHER FLOWS

Summary: EPA and other industry standard documents indicate that blending is a long-accepted engineering solution to avoid washing out or over-sizing biological systems. It is a standard engineering practice that has been used in designing POTW for decades.

1. **EPA FOIA Response**: The FOIA response indicates that severe problems can occur if blending is prohibited and a municipality is required to run 100% of peak wet weather flows through its biological system:

> EPA has information from Water Environment Manuals of Practice that provide that:

- [W]here peak flows approach or exceed the design capacity of a treatment plant they can seriously reduce treatment efficiency. [Footnote omitted.]

[7] April 5, 2002 FOIA response of EPA's Office of Wastewater Management to John Hall at 2-3.

[8] EPA's Responses to Plaintiffs' First Requests for Admissions in *PMAA. v. Whitman*, ¶ 30 at 20.

- Activated sludge systems are particularly vulnerable to high volume peak flows. Peak flows that approach or exceed design capacity of an activated sludge unit shift aeration basin solids inventory to the clarifiers and can lead to excessive solids losses (*i.e.*, wash out the biological mass necessary for treatment). [Footnote omitted.]

- [I]f the clarifier experiences excesses loss of solids, treatment efficiencies can be lowered for weeks or months until the biological mass in the aeration basin is reestablished . . . .

- There are a number of design and operational options routinely employed by POTWs to handle peak wet weather flows without an excessive loss of solids from the clarifiers. [Footnote omitted.] These include utilizing the full capacity of the biological treatment unit and providing primary treatment for additional flows where primary treatment capacity exceeds the capacity of the biological unit. Excess flows receiving primary treatment are typically either discharged directly to receiving waters, with or without disinfection, or recombined with the effluent from the biological unit, disinfected and discharged. [9]

2. <u>EPA FACA Report</u>: An EPA contractor studying peak excess flow treatment facilities observed the adverse impact of forcing all flows through a biological system:

> **POTW efficiency** – The highest rate of wastewater flow to treatment plants typically occurs during large wet weather events. High rate flows that exceed the design capacity of a treatment plant can reduce treatment efficiency or make biological treatment facilities inoperable (e.g., wash out the biological mass necessary for treatment). [10]

3. <u>EPA Branch Chief's Meeting Handout</u>: The handout summarizes:

   - Biological treatment units lose efficiency and may become unstable as flow rates increase and loadings vary. High flows can wash out biomass. [11]

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[9] April 8, 2002 FOIA response of EPA's Office of Wastewater Management to John Hall at 3-4.

[10] *Performance of Peak Excess Flow Treatment Facilities Serving Sanitary Sewer Collection Systems*, Draft, SAIC (Oct. 14, 1999) at 12.

[11] *NPDES Branch Chiefs' Meeting, Recombination/Blending of Peak Wet Weather Flows at POTWs*, from Jeff Lape, OWM, *circa* March 2001.

4. **EPA Contractor Study**: An EPA contractor concluded that a prohibition on blending would have the effect of transforming treated effluent (meeting permit limits) into untreated overflows:

> Under dry weather flow scenarios, most POTW provide at least biological treatment of all flows that enter the plant. At some treatment facilities, combined sewer overflow occur in the collection system as soon as the biological capacity at the treatment works is exceeded. Under wet weather diversion operation, POTWs provide biological treatment up to the point where the capacity of the biological treatment units are exceeded. Under this scenario, the facility provides primary treatments for all flows, including flows that do not get biological treatment. The flows diverted around the biological units is then combined with flows receiving biological treatment to create the single discharge from the plant. The quality of the blended POTW discharge must still meet permit limitations, so there are practical limits as to how much flow can be diverted around biological units. Overall, diversions around biological units provides for treatment of flows that would otherwise receive no treatment and simply overflow at locations upstream of the POTW. [12]

5. **AMSA Survey**: Fifty percent of AMSA members indicate that they are designed to blend. If blending were prohibited, the percentage of AMSA members indicating the likely outcome(s) is as follows:

> 31% - bypass of raw sewage from headworks
> 29% - surcharging in the collection system
> 14% - basement flooding
> 40% - wash-out of biomass and solids from the treatment facility
> 44% - decreased treatment efficiency and possible exceedance of permit limits. [13]

6. **EPA Contractor Study**: An EPA contractor studying the issue of blending in 2001 stated:

> As of this time, a number of States allow or encourage wet weather diversions for POTWs serving combined sewers

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[12] *Assessment of Costs and Pollutant Loads for Various Management Scenarios at POTWs Serving Combined Sewer Systems*, Tetra Tech Draft, January 2001 (hereinafter *Tetra Tech Report*) at 1.

[13] June 29, 2001 E-mail from Greg Schaner (AMSA) to Kevin Weiss, OWM.

and provides advanced primary treatment to much of its overflows.[14]

7. **Historical Design Manuals**: Technical design manuals reflect that blending is an accepted engineering approach to address peak wet weather flows. Statements include:

> The design of the wastewater treatment system shall include provisions for bypassing around each operation. The bypassing system . . . shall be designed to provide control of the diverted flow such that only that portion of the flow in excess of the hydraulic capacity of the units in service need be bypassed . . . .[15]

8. **EPA Value Engineering Publication**: A 1977 publication indicates that plant designs and construction grants approved by EPA incorporate blending to process peak wet weather flows.[16]

CONCLUSION: Processing peak wet weather flows is a well-documented problem for biological treatment processes that can adversely impact plant performance. Blending is historically a widespread accepted engineering practice that has been encouraged by EPA Regions and States to address peak flows and protect the biological system. A prohibition on blending would result in permittees that are currently treating and in compliance with effluent limitations being forced to bypass raw sewage, wash-out biological systems, or otherwise adversely affect the treatment plant efficiency and/or environment.

D. SECONDARY TREATMENT STANDARDS NOT INTENDED TO ADDRESS PATHOGENS

Summary: Environmental groups are asserting that biological treatment is intended to remove pathogens and that, by allowing municipalities to blend, the pathogen reduction intended by secondary treatment is not being accomplished. In direct contrast to such assertion, EPA specifically determined in 1976 that secondary treatment should not be the basis for regulating pathogens. If regulation is to be needed to address pathogens, then States could impose water quality standards and disinfection, as necessary.

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[14] *Tetra Tech Report* at 9.

[15] *Technical Bulletin – Design Criteria for Mechanical, Electric, and Fluid System and Component Reliability*, USEPA (1974) ¶ 211.5 at 17-18.

[16] Value Engineering, "Case Studies and Formats for Proposals and Reports, A Supplement to the Value Engineering Workbook for Construction Grant Projects," USEPA, (June 1977).

1. **Secondary Treatment Regulatory Preamble**: Prior to 1976, the secondary treatment standards contained a fecal coliform requirement. Biological treatment, however, was recognized as having some incidental removal but that chlorination would be required to meet the fecal standard. In preamble to secondary treatment rulemaking, EPA stated:

> Biological secondary treatment processes, as well as comparable physical/chemical treatment processes, accomplish a certain degree of reduction in the number of pathogenic organisms found in domestic wastewater (as normally indicated by the level of fecal coliform bacteria) through natural die-off and solids removal. These removals, however, are incidental and generally result in fecal coliform bacteria concentrations which are at least an order of magnitude greater than those required for secondary treatment by 40 CFR Part 133 [*i.e.*, geometric mean for thirty days shall not exceed 200 per 100 milliliters].

and

> The fecal coliform bacteria limitations in 40 CFR Part 133 were, in essence, a requirement for continuous disinfection of wastewater effluents from POTW's and fecal coliform bacteria were the measure of the effectiveness *of the disinfection process.*[17] (emphasis supplied).

2. **Secondary Treatment Regulatory Preamble**: In 1976 when EPA removed fecal coliform requirements from the secondary treatment regulations, EPA determined that any disinfection requirements would more appropriately be regulated under State water quality standards.

> In recognition of more recent information, it is now felt that it is environmentally sound to establish disinfection requirements for domestic wastewater discharges in accordance with water quality standards promulgated pursuant to section 302 and 303 of the Act, and associated public health needs.
>
> . . . .
>
> In proposing the deletion of the disinfection requirements from 40 CFR Part 133 and recommending reliance on water quality standards, the EPA made an assessment of the

[17] 40 Fed. Reg. 34522 (August 15, 1975) and 41 Fed. Reg. 30787 (July 26, 1976), respectively.

> State standards relating to wastewater disinfection. It was determined that virtually all of the States and Territories have water quality related regulations pertaining to the disinfection of wastewater and that public health was adequately being maintained.[18]

CONCLUSION: Secondary treatment standards do not address pathogens. If pathogen reduction were necessary, disinfection, not biological treatment, would be the primary means to achieve such objective. Regulation of pathogens would be undertaken in state water quality standards, as appropriate.

II. BYPASS RULE DOES NOT RESTRICT BLENDING

A. BYPASS REGULATION DOES NOT RESTRICT CHOICE OF PLANT DESIGN OR ADD REQUIREMENTS BEYOND THOSE IMPOSED BY SECONDARY TREATMENT EFFLUENT LIMITATIONS

Summary: A review of the rulemaking record pertaining to the bypass regulation, as well as the underlying intent behind the promulgation of the bypass regulation, reflects that this regulation was never intended to restrict blending. Such conclusions are set forth in EPA FOIA responses, regulatory preamble, EPA briefs, case law, and EPA admissions in *PMAA v. Whitman.*

1. **Regulatory Preamble Identifies Intent of Bypass Rule**: A review of the preamble to the bypass regulation reflects that it was intended to (a) justify/provide a defense to certain noncompliance and (b) require operation of the treatment plant as designed. The 1984 preamble states that:

> The bypass provision was intended to accomplish two purposes. First it excused certain unavoidable or justifiable violations of permit effluent limitations, provided the permittee could meet the bypass criteria. Second, it required that permittees operate control equipment at all times, thus obtaining maximum pollutant reductions *consistent with technology-based requirements*. (Emphasis added.)

Moreover, under the bypass rule EPA specifically determined that the permittee can design and operate the plant to dispense with some unit processes under certain conditions:

> Any variation in effluent limits accounted for and recognized in the permit which allows a facility to dispense

[18] 41 Fed. Reg. 30789 (July 26, 1976).

with some unit processes under certain conditions is not considered a bypass.

The 1988 preamble acknowledged that the bypass provision does not impose requirements beyond that set forth in the underlying technology-based requirement:

> In this case, however, because the bypass provision merely *'piggybacks' existing requirements*, it does not itself impose costs that have not already been taken into account in development of categorical standards. (Emphasis added.)[19]

2. **Bypass Regulatory Preamble Regarding No Limitation on Technological Choices**: The preamble states that the bypass regulation, like the secondary treatment rule, was not intended to limit the permittee's choice of technology:

> The bypass provisions does not dictate how users must comply because it does not dictate what . . . treatment technology the user must install.[20]

3. **EPA Briefs Submitted To Federal Courts**: The EPA brief in the 1980's challenge to the bypass regulation (*i.e., NRDC* case) states that the bypass regulation does not dictate technology and that the intent is for the plant to be operated as designed – recognizing that some units may be designed to run only in specified instances:

> The regulation is intended to ensure that, in general, permittees continue to operate the treatment systems that have been installed to meet effluent limitations.
>
> * * * *
>
> The specific 'technology' that the Agency is accused of dictating is 'full operation of the treatment system.' However the regulation imposes *no limits on the permittee's choice of treatment technology and therefore does not 'dictate technology'* . . . . [T]he regulation requires only that, except for 'essential maintenance,' the equipment that the permittee has selected will be operated . . . .

[19] 49 Fed. Reg. 38036-37 (September 26, 1984) and 53 Fed. Reg. 40609 (Oct. 17, 1988), respectively.

[20] 53 Fed. Reg. 40609 (Oct. 17, 1988).

> . . . . [W]hat the Agency originally intended, and still intends, is to ensure 'proper pollution control through adequate design operation and maintenance of treatment facilities.' 'Design' operation and maintenance are those requirements developed by the designer of whatever treatment facility a permittee uses. The bypass regulation only ensures that facilities follow those requirements. *It imposes no specific design and no additional burdens on a permittee.* If the facility is required to use scrubbers two times a day, the bypass regulation does not require the facility to run scrubbers twenty-four hours per day. (Underlining in original. Emphasis added in italics.)[21]

4. **Case Law**: The U.S. Court of Appeals upheld EPA's bypass regulation interpretation presented in its brief, indicating that it only requires operation of the treatment system as designed:

> The bypass regulation does not, in fact, dictate that a specific treatment technology be employed; instead, the regulation requires that a system be *operated as designed* (Emphasis added)

and "bypassing" is defined as shutting off a treatment process and "coasting" when the facility is in compliance.[22]

5. **EPA FOIA Response on Scope of Bypass Rule**: The April 8, 2002 FOIA response states:

> EPA has no documents from the promulgation of the bypass provisions that indicate that the bypass rule was intended to preclude the use of blending as a wet weather flow management option. [23]

6. **Assistant Administrator for Office of Water Letter to Senator Frist**: In response to Senator Frist's inquiry, the EPA response provides:

> **Has EPA ever completed any regulatory analysis regarding the cost impact and environmental benefits of a blending prohibition?** (Bold in original.)

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[21] EPA brief submitted in *NRDC v. EPA*, 822 F.2d 104 (D.C. Cir. 1987) at 182, 189-190.

[22] *NRDC v. EPA*, 822 F.2d 104, 123 (D.C. Cir. 1987).

[23] April 8, 2002 FOIA response of EPA's Office of Wastewater Management to John Hall at 1.

> . . . EPA did not conduct a formal analysis of the national costs or environmental impacts of alternative regulatory frameworks for addressing peak wet weather flows at POTWs when conducting the regulatory analyses that were applicable at the time when EPA promulgated the bypass regulation.[24]

7. **EPA Admissions in *PMAA v. Whitman***: EPA's January 31, 2003 Admissions in *PMAA v. Whitman* state:

> EPA admits that it has not issued a Federal Register notice specifically stating that blending is prohibited at POTWs.[25]

CONCLUSION: The bypass regulation was never intended to restrict blending as a design practice to process peak wet weather flows. It merely requires the permittee to operate its plant as designed and fully utilize its treatment process rather than turning off the unit and coasting. As the bypass rule admittedly imposes "no additional burdens," beyond categorical requirements, it is clearly improper to interpret the rule to restrict blending.

B. EPA HISTORICAL IMPLEMENTATION ADMITS THE BYPASS REGULATION DOES NOT RESTRICT BLENDING

Summary: As a generally accepted engineering practice, blending has historically been grant funded by EPA and included in NPDES permits. Moreover, EPA has historically interpreted the bypass regulation as not precluding blending.

1. **Construction Grants Program Authorized Blending**: EPA statements regarding grants include its 2002 FOIA response:

> EPA allowed the use of federal funds under the Construction Grants Program to build facilities that were designed to blend effluent from primary treatment processes with effluent from biological treatment processes during peak wet weather events . . . .[26]

2. **Permits Authorized Blending**: EPA documents regarding permitting of blending include:

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[24] March 7, 2001 letter from Diane Regas, Acting AA for Water, to Senator Frist at 4.

[25] EPA's Response to Plaintiffs' First Requests for Admissions in *PMAA. v. Whitman*, ¶ 14 at 9.

[26] April 5, 2002 FOIA response of EPA's Office of Wastewater Management to John Hall.

a. **EPA Branch Chief's Meeting Handout**: The handout states:

> - Some NPDES authorities have allowed this design and operation. In some cases, permit compliance is based on flows after blending. Of these, some have addressed issue in permits and some have not.[27]

b. **EPA Region I Approval of Blending**: EPA Region I guidance provided to States and the regulated community provides:

> EPA has determined that if a POTW discharges combined primary/secondary effluent which will achieve the numerical limitations contained [in] the community's NPDES permit, the community is not required to obtain a CSO related bypass authorization.[28]

c. **EPA Region II/Approved NPDES States Approval of Blending**: A letter from EPA Region II states:

> Regarding the topic of blending effluent, the State of New York has authorized by permit some public-owned treatment works to blend peak wet weather flows with treated effluent before discharge. The State of New York is the authorized permitting authority . . . .[29]

d. **EPA Region V/Approved NPDES States Approval of Blending**: An e-mail from Ohio EPA indicates that many Ohio municipalities have been approved to blend based upon EPA's historical interpretation:

> This interpretation [*i.e.*, prohibiting blending by EPA enforcement] was a complete surprise to us (at least me). I was aware of *many wwtps* that split flows with one part receiving up to tertiary treatment and another part receiving less than full secondary, with blending to meet secondary. (Emphasis added.)[30]

3. **EPA Draft CSO Policy Confirmed Blending Not a Bypass**: EPA specifically stated in the draft 1992 CSO policy, which was public noticed in

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[27] *NPDES Branch Chiefs' Meeting, Recombination/Blending of Peak Wet Weather Flows at POTWs*, from Jeff Lape, OWM, *circa* March 2001.

[28] Draft CSO Related Bypass Application Guidance at 1-1.

[29] December 20, 2001 letter from Walter Andrews, EPA Region II, to John Hall.

[30] May 29, 2001 E-mail from Bruce Goff, Ohio EPA, to Peter Swenson, EPA Reg. V.

the Federal Register and signed by the Assistant Administrators for EPA's water and enforcement offices, that:

> Under EPA regulations, the intentional diversion of waste streams from any portion of a treatment facility, including secondary treatment, is a bypass. *For a POTW a bypass does not refer to flow or portions of flows that are diverted from portions of the treatment system but that meet all effluent limits for the treatment plant upon recombining with non-diverted flows prior to discharge.* (Emphasis added.)[31]

The final CSO policy is silent regarding blending. It did, however, state that there are no significant changes from the draft 1992 policy.[32] Furthermore, an EPA FOIA response confirms that no negative comments were received on the above-cited blending statement in the draft CSO policy and that the language was not removed to impose a prohibition on blending.[33]

4. **EPA 1997 OWM Letter**: EPA's Office of Wastewater Management ("OWM") stated:

> [T]he National Pollutant Discharge Elimination System (NPDES) regulations provide sufficient flexibility for permit writers to account for the designed-in intentional diversion of wastewater around a treatment unit without triggering bypass in special or unique situations when writing permits.[34]

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[31] *Draft Combined Sewer Overflow Control Policy*, USEPA (Dec. 18, 1992) at 24; Notice of Availability of EPA's draft guidance document signed by LaJuana Wilcher (Assistant Administrator for Water) and Herbert H. Tate, Jr. (Assistant Administrator for Enforcement) entitled "Combined Sewer Overflow Control Policy," 58 Fed. Reg. 4994 (January 19, 1993).

[32] The final CSO policy states:

> The public comments were largely supportive of the draft Policy. EPA received broad endorsement of and support for the key principles and provisions from most commenters. Thus, this final Policy does not include significant changes to the major provisions of the draft Policy, but rather, it includes clarification and better explanation of the elements of the Policy to address several of the questions that were raised in the comments.

59 Fed. Reg. 18688 (April 19, 1994).

[33] January 2, 2002 Freedom of Information Act response from EPA to Hall & Associates.

[34] March 12, 1997 letter from James Pendergast, EPA Headquarters Office of Water, Permits Division, to Lial Tischler.

5. **EPA 1999 OWM Letter to EPA Region V**: EPA OWM concurs with a Region V draft letter confirming that blending is not an illegal bypass. The Region V letter with which OWM agreed provides:

> If the permit writer includes in the permit an explicit recognition of this differential treatment [i.e., blending], and if the treatment facility is operated in accordance with the treatment facility's design for providing treatment during peak flow conditions, any rerouting/recombination that occurs during such conditions would not constitute a diversion from the "treatment facility," and so would not constitute a "bypass."[35]

6. **Assistant Administrator for the Office of Water Letter to Senator Frist**: In response to Senator Frist's inquiry, the EPA response provides:

> **Has EPA ever completed any regulatory analysis regarding the cost impact and environmental benefits of a blending prohibition?** (Bold in original.)
>
> EPA believes that NPDES permitting authorities have considerable flexibility through the NPDES permitting process to account for different peak flow scenarios that are consistent with generally accepted good engineering practices and criteria for long-term design. As such, NPDES permitting can account for blending. As described above, blending may be approved.[36]

CONCLUSION: Blending is a practice which historically has been grant funded by EPA, included in NPDES permits, and allowed under applicable regulations. Responses from OWM regarding specific projects, as well as EPA's contemporaneous interpretation set forth in the draft CSO policy, uniformly reflect that blending is not restricted by the bypass regulation.

III. A BLENDING PROHIBITION WOULD IMPOSE MULTI-BILLION DOLLAR COSTS UPON MUNICIPALITIES

A. BYPASS REGULATION DOES NOT IMPOSE ANY ADDITIONAL COSTS UPON THE REGULATED COMMUNITY

[35] Draft letter from Tinka Hyde, Acting Director, Water Division, Indiana Department of Environmental Management, attached to April 15, 1999 Memorandum from Tinka Hyde to Michael B. Cook, Director, EPA Office of Wastewater Management, entitled "Request for Concurrence with Recombination Letter" (WN-16J).

[36] March 7, 2001 Letter from Diane Regas, EPA Acting Assistant Administrator for Water, to Senator Frist at 4.

Summary: EPA has consistently stated that the bypass rule is intended to impose no additional costs upon the regulated community. These statements have been made by EPA in the preamble accompanying promulgation of the bypass regulation, EPA briefs, EPA FOIA response after reviewing the bypass rulemaking record, and other documents.

1. **Bypass Rule Not Intended to Impose Additional Costs**: EPA's preamble to the bypass regulation states:

> In this case, however, because the bypass provision merely 'piggybacks' existing requirements, it does not itself impose costs that have not already been taken into account in development of categorical standards.[37]

2. **EPA Briefs Submitted To Federal Courts**: In its *circa* 1986 brief to the D.C. Court of Appeals responding to a challenge to the bypass regulation, EPA stated:

> [I]n promulgation an effluent guideline limitations or establishing a BPJ limit, the Agency considers fully the costs of operating treatment systems to the extent assumed by the bypass regulation. *Thus, the bypass regulation itself imposes no costs.*[38] [Emphasis added.]

3. **EPA FOIA Response**: EPA's April 5, 2002 FOIA response states:

> EPA has no documents indicating the cost impacts of prohibiting the use of blending at POTWs to manage peak wet weather flows that were used in the development of the secondary treatment regulations or the bypass regulations.[39]

4. **EPA Admissions in Pending Lawsuit**: EPA's January 31, 2003 Admissions in *PMAA v. Whitman* state that EPA never considered the costs in promulgating the regulations:

> EPA admits that after reasonable inquiry that it has not as of this date located any documents from the administrative record related to the secondary treatment regulations and

[37] 53 Fed. Reg. 40609 (Oct. 17, 1988).

[38] EPA brief submitted in *NRDC v. EPA*, 822 F.2d 104 (D.C. Cir. 1982) at 194-95.

[39] April 5, 2002 FOIA response of EPA's Office of Wastewater Management to John Hall at 3.

> the bypass regulations in which EPA formally analyzed the national cost of prohibiting the use of blending . . . .
>
> . . . .
>
> EPA admits that after reasonable inquiry it has not as of this date located any documents in the record for the secondary treatment rule that provide an estimate of costs associated with ensuring that biological treatment is sized to process all peak wet weather flows under all conditions.[40]

CONCLUSION: The bypass rule is not intended to impose any costs upon the regulated community beyond that already imposed by the imposition of secondary treatment standards.

B. BILLIONS OF DOLLARS IN COSTS ARE ASSOCIATED WITH REGULATING BLENDING UNDER THE BYPASS RULE

Summary: Notwithstanding the fact that the bypass rule was not intended to impose *any* additional costs upon the regulated community, restricting blending under the bypass rule would have the effect of imposing hundred of billions of dollars of costs upon municipalities. EPA has undertaken various cost estimates associated with the impact of now subjecting blending to the bypass prohibition.

1. **EPA Cost Estimates of Blending Restriction**: A 2002 cost estimate by an EPA contractor estimates a prohibition on blending would range for CSOs from $9.1 billion (if POTWs increased wet weather storage) to $79.2 billion (if POTWs were to double secondary treatment capacity) and for SSOs range from $13.4 billion (if POTWs increased wet weather storage) to $52.8 billion (if POTWs were to double secondary treatment capacity).[41]

2. **OECA Cost Estimates**: A February 2003 evaluation of costs by the EPA Office of Water and Office of Enforcement and Compliance Assurance ("OECA") to eliminate bypasses by construction, rather than allowing blending, for four municipal cases indicates an average cost of approximately $69 million per municipality.[42]

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[40] EPA's Responses to Plaintiffs' First Requests for Admissions in *PMAA. v. Whitman*, ¶¶ 25, 29 at 16, 19.

[41] *Draft National Cost Impact Analyses*, prepared by LimnoTech (EPA contractor), Feb. 3, 2002.

[42] *Incremental Costs for Bypass Elimination Based on Case Settlements and Judgements* (Draft 02/07/03). The OECA cost estimates indicate for four municipalities a total cost of $275 million.

3. **EPA $200 Billion Dollar Cost-Estimate**: More recent cost-estimates from EPA Headquarters estimated that a national prohibition on blending would likely cost municipalities at least $167 billion - $213 billion dollars.[43]

CONCLUSION: Well over a hundred billion dollars of costs would be imposed by subjecting blending to the bypass rule although it is clear from the rulemaking record and EPA historical implementation and practice that such result was never intended.

SUMMARY

A review of EPA correspondence, OGC opinions, regulatory preamble, EPA briefs, case law, admissions, and historical practice, clearly establish that:

- The Clean Water Act does not provide EPA authority to dictate how a plant may be designed to achieve effluent limits.
- The choice of technology for meeting secondary treatment standards is up to the permittee. Biological treatment of all flows is not required.
- In promulgating the secondary treatment rule EPA never intended to restrict blending.
- The secondary treatment standards do not address pathogens. If pathogen reduction were necessary it would be required by state water quality standards. Disinfection, not incidental biological treatment, would be the means to reduce pathogens.
- The bypass regulation does not impose any additional costs or burdens beyond that established by the secondary treatment rule and did not itself restrict blending.
- The bypass rule does not restrict how a plant may be designed to achieve permit limits but is intended to require the permittee to operate its plant as designed. Blending provides for full utilization of the plant process abilities under difficult operating conditions.
- A restriction on blending would have detrimental impacts on biological systems resulting in increased overflows and process upsets.
- Blending is a long-accepted engineering solution for cost-effectively treating peak wet weather flows. It has been grant funded, included in NPDES permits, and otherwise approved by EPA Regions and approved NPDES States.

[43] *Estimate of Additional Costs for POTWs if Blending is not Allowed*, EPA OWM, *circa* Feb. 2003.

- Hundreds of billions of dollars in costs would be imposed on municipal entities by applying the bypass prohibition to blending.

- Interpreting existing rules to restrict or preclude blending would be a major change in rule interpretation requiring formal compliance with APA/Unfunded Mandates Act provisions and, in any event, plainly exceed the authority granted by Congress to EPA under the Clean Water Act.

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July 14, 2006

VIA E-MAIL

Benjamin Grumbles
Assistant Administrator Office of Water
U.S. Environmental Protection Agency Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Mail Code 4101M
Washington, DC 20460

Re: Clarification of Blending Policy Requirements During Localized Flooding

Dear Mr. Grumbles:

On January 17, 2006, we met with Jim Hanlon, Director of Wastewater Management, and Steve Sweeney, Office of General Counsel, to discuss the confusion that many state environmental agencies have regarding the federal blending policy. This letter is to request clarification of the blending policy on an issue EPA considered straight forward at the meeting, but has yet to be resolved by EPA.

The clarification that we seek from EPA is whether blending is prohibited as an unlawful bypass under extreme rainfall conditions that cause localized flooding. The recent extreme rainfall, which occurred in the Washington, DC area is a prime example of these events. These events submerge parts of the collection system, manholes and flood basements. Flooded basements force waters down toilets and other acceptable plumbing fixtures (tubs for laundry/washing) and floor drains. Peak flows associated with localized flooding are not events that can be controlled via I/I reduction programs and have nothing to do with appropriate collection system maintenance.

The current confusion arises under EPA's requirement to use any "feasible alternatives" to eliminate blending. Some state agencies have gone as far as to suggest that this would require bathrooms and all floor drains to be eliminated in basements that might flood. At the January 2006 meeting, EPA was clear that the bypass rule was intended to provide protection from permit violations under these conditions, not to cause increased expenditures. Consequently,

blending that occurs under these conditions should be considered acceptable under the bypass rule. We would greatly appreciate EPA's immediate clarification to that regard.

Thank you for your consideration to this urgent inquiry. We look forward to your reply.

Sincerely,

/s/

John C. Hall

cc: James Hanlon, EPA
Stephen Sweeney, EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 15 2006

OFFICE OF
WATER

Mr. John C. Hall
Hall & Associates
1101 15th Street, NW, Suite 203
Washington, D.C. 20005-5004

Dear Mr. Hall:

Thank you for your July 14, 2006 letter. You request that the Environmental Protection Agency (EPA) clarify whether diversions around secondary treatment units at publicly owned treatment works (POTWs) are prohibited as an unlawful bypass under extreme rainfall conditions that cause localized flooding.

The National Pollutant Discharge Elimination System (NPDES) regulations define bypass as the intentional diversion of waste streams from any portion of the treatment facility and prohibit bypass, except in very limited circumstances. EPA or the NPDES authority may take enforcement action against a permittee for a prohibited bypass, unless:

(A) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime; and

(C) The permittee submitted required notices.

EPA's December 22, 2005, peak flows draft policy explained that, under limited conditions where the NPDES authority determines that there are no feasible alternatives to peak wet weather flow diversions around secondary treatment units at the treatment plant and the other criteria of the bypass provision are met, then the NPDES authority may approve peak wet weather flow diversions around secondary treatment units at a POTW treatment plant serving a separate sanitary sewer conveyance system as an anticipated bypass in accordance with 40 CFR 122.41(m). The determination of what constitutes a 'peak wet weather event' during which the use of a peak wet weather diversion may be approved by a NPDES authority as an anticipated bypass will be a site-specific determination. The draft policy indicated that it is intended to ensure that POTW treatment plant operators, NPDES authorities, and the general public evaluate

what constitutes a peak wet weather event for a POTW treatment plant for which there is no feasible alternative to a peak wet weather diversion, based upon past diversions, opportunities for eliminating or reducing diversions, and future considerations. The draft policy would not affect operation of the existing bypass provision that appears in each NPDES permit, but would instead explain how an anticipated bypass of peak wet weather flows at a POTW treatment plant serving a separate sanitary sewer collection system could be approved under that provision. We will carefully consider the concerns you raised in your letter as we finalize the policy.

The NPDES regulations also contain the upset provision at 40 CRF 122.41(n), which establishes a mechanism for raising an affirmative defense under limited circumstances. Under the NPDES regulations, upset means an exceptional incident in which there is unintentional and temporary non-compliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. A permittee who wishes to establish the affirmative defense of upset must demonstrate that:

(A) The upset occurred and that permittee can identify the causes of the upset;

(B) The permitted facility was at the time being properly operated;

(C) The permittee submitted required notices; and

(D) The permittee complied with any required remedial measures.

Again, thank you for your letter. I appreciate your concern for the health and safety of the public and the environment. Please contact James Hanlon, Director of the Office of Wastewater Management, at (202) 564-0748, if you have any questions.

Sincerely,

Benjamin H. Grumbles
Assistant Administrator