

Exhibit 6

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Health
Environmental Health Administration

Bureau of Environmental Quality



MEMORANDUM

TO: Doreen E. Thompson, Esq.
Interim Senior Deputy Director

FROM: James R. Collier
Chief

DATE: November 3, 2004

SUBJECT: CSO LTCP

The Environmental Protection Agency (EPA) has requested that the Department of Health (DOH) submit documentation for the record of the Clean Water Act (CWA) state approval of the Water and Sewer Authority's (WASA) Combined Sewer System Long Term Control Plan (CSO LTCP) for discharges to the combined sewer system required by the 1994 CSO Control Policy. The 1994 CSO Control Policy is published at 59 Fed. R. 18688, and incorporated into the Clean Water Act pursuant to the Wet Weather Water Quality Act, Section 402(q) of the Clean Water Act, 33 U.S.C. § 1342(q). The following is a general summary of those activities that we conducted over the last seven years that were the basis for the approval.

On September 5, 1997, the Environmental Protection Agency (EPA) awarded a \$7.1M CWA Section 201 facility planning grant to WASA for the LTCP, under Title II of the CWA subject to 40 CFR 35. Pursuant to 40 CFR 35.917-8, the District of Columbia is required to review and certify WASA's plans. By letter dated August 28, 2003, hereinafter referred to as the "Certification Letter", the DOH Environmental Health Administration, Bureau of Environmental Quality certified that WASA's Long Term Control Plan (LTCP) complies with the applicable provisions of the Clean Water Act, and the appropriate requirements of District of Columbia law.

DOH's approval was based upon an evaluation of the information contained in the LTCP, that was necessary to assure compliance with the Clean Water Act, and the Water Pollution Control Act of 1984 (the Act), as amended, effective March 16, 1985, D.C. Official Code § 8-103.01 *et seq.*, and its implementing regulations in Title 21 of the District of Columbia Municipal Regulations (DCMR), Chapters 11 and 19.

Review of LTCP

DOH reviewed the draft LTCP and sent WASA a letter dated October 18, 2001, with a recommendation that would ensure compliance with the WQS. WASA analyzed DOH's recommendation and several similar alternatives and changed the draft LTCP to an

alternative closely related to DOH's proposal. DOH reviewed the *Final Report* LTCP, dated July 2002, for compliance with the water quality standards, in accordance with the 1994 CSO Control Policy, sections II.C.4.b and II.C.9. The 1994 CSO Control Policy regulates the planning, selection and implementation of water quality management practices and controls, to meet the requirements of the CWA and to involve the public fully during the decision making process. The WASA LTCP provides for a combination of pump station improvements, storage tunnels, sewer separation, outfall consolidation, regular improvements, low impact development and excess flow treatment at Blue Plains. The combined sewer system will be sized to control the one-year 24-hour storm (it is recognized that there is considerable variation in such a storm and antecedent events). Based on the capacity of the system from the one-year 24-hour storm, in the average rainfall year the system will reduce overflows to the Anacostia River by 98%, to the Potomac by 93%, and to Rock Creek by 90%. In an average year there would be two overflow events to the Anacostia, four overflow events to the Potomac and four to Rock Creek¹. DOH evaluated these overflow events to determine whether the LTCP would violate the District's water quality standards.

Attainment of Water Quality Standards

DOH reviewed the LTCP to determine whether the plan as designed will allow the designated uses of the District's waters to be attained. The District's waters are classified on the basis of their current use and designated beneficial uses. Pursuant to 21 DCMR § 1101.1, the water quality standards specifies categories of beneficial uses as follows: Class A- primary contact recreation²; Class B- secondary contact recreation³; Class C- protection and propagation of fish, shellfish, and wildlife; Class D- protection of human health related to consumption of fish and shellfish, and; Class E- navigation. Class A is listed as a designated use for the District's waters affected by CSO overflows. Class B is listed as a current use.

The District's water quality standards for recreation are derived from EPA recommendations based on risk levels associated with swimming. Some Class A uses that involve limited immersion will have a lower risk than those with prolonged immersion. The Department of Health does not advocate swimming, nor complete prolonged immersion in the discharge plume, or mixing zone, or the near vicinity on any point source discharge, whether sewage or industrial pollutant, pursuant to 21 DCMR 1158.5⁴. Class A and Class B waters must achieve or exceed water quality standard for bacteria as measured by fecal Coliform as an indicator organism. While fecal coliforms, which are microbes that live in the intestinal tracts of warm-blooded animals, are not usually harmful themselves, their presence indicates the potential for pathogens in the water. DOH established, and EPA approved, a total maximum daily load (TMDL) allocation for bacteria to the combined sewer system in the Anacostia River. The TMDL

allocation for the combined sewer system was determined to achieve the Class A water quality standards.

The DOH analysis of the LTCP indicated that in a few areas, for a few days of the year, the risk of pollution from the CSO would be higher than usual. The LTCP calls for the installation of signs and warning lights regarding those levels to provide real time guides to users to ensure that any risk from CSO discharges are minimal. However, DOH concluded that these occurrences would not negate attainment of the waste loads allocated to the combined sewer system. The District of Columbia water quality standards do not guarantee risk free primary contact recreation, nor does it guarantee that primary contact recreation can be achieved everywhere at all times. Attainment of the Class A designated use would be limited by storm flows from Maryland waters into District waters, rather than any projected overflow. Conditions such as current velocity, floods, clarity of the water and competing uses such as navigation or fishing may restrict these activities to certain areas at certain times, and most certainly winter temperatures and heavy ice create limitations.

Variation of water quality and risk is implicit in the EPA criteria adopted as a regulation of the District of Columbia as can be seen from the definition of primary contact.⁵

"Free of Discharges of Untreated Sewage"

DOH reviewed the LTCP to determine whether the overflows in the LTCP are in conflict with regulations at 21 DCMR 1104.3, which states "Class A waters shall be free of discharges of untreated sewage". Preliminary reduction of microorganisms and bacteria may be accomplished through physical reduction of solids in the wastewater, primarily through sedimentation, flotation, and filtration⁶.

The LTCP contains several treatment measures designed to improve the water quality of any overflows from the system⁷. These include: (1) street cleaning, (2) catch basin maintenance, (3) sediment and erosion control (21 DCMR Chapter 5), and (4) the requirement that industrial establishments to apply for and comply with the Wastewater Discharge Permit provisions (21 DCMR § 1511.3). The implementation of these components of the Nine Minimum Control described in the Combined Sewer Overflow (CSO) Control Policy improves the quality of the combined overflows.

Additionally, the LTCP requires a total capture of the first flush loads containing the most concentrated combined sewage⁸. The remaining load is screened of floatables and large solids prior to discharge. Screening is the first unit operation used at wastewater treatment plants. Screening removes objects such as rags, paper, plastics, and metals to prevent damage and clogging of downstream equipment, piping, and appurtenances. In 1994, EPA recognized the importance of controlling solid and floatable materials under the nine minimum controls. CSOs

can contain high levels of floatable materials, suspended solids, biochemical oxygen demand (BOD), oils and grease, toxic pollutants, and pathogenic microorganisms. Floatables are often the most noticeable and problematic CSO pollutant. They create aesthetic problems and boating hazards, threaten wildlife, foul recreational areas, and cause beach closures. The LTCP contains several methods of floatables control, including baffles, catch basin modifications, netting systems, containing boons, skimming processes and trash rack devices.

Therefore, DOH determined that the combination of the above measures will result in "partially treated sewage". Since the LTCP provides some level of treatment for the overflow events, it is

not in conflict with the "free of discharges of untreated sewage" regulations at 21 DCMR 1104.3. This is in keeping with the methods outlined in the Environmental Protection Agency's (EPA) CSO Technology Fact Sheet entitled "Combined Sewer Overflow Technology Fact Sheet, Screens" (EPA 832-F-99-040). These procedures are recognized by the standard engineering text, Metcalf and Eddy, 1991, *Wastewater Engineering - Collection, Treatment, Disposal*, McGraw-Hill, Inc., New York.

Compliance with TMDLs

DOH's review found that the LTCP is in conformance with the Total Maximum Daily Loads (TMDLs), and that the LTCP will meet the water quality standards as long as other sources of pollution attain similar levels of reduction.

EPA recommended that the District of Columbia develop TMDLs on a watershed basis⁹. Since the District of Columbia is located at the Fall Line where free flowing rivers become tidally influenced estuaries, the majority of the pollution loads (with potential synergistic and additive effects) in the District of Columbia waters originate outside of the District of Columbia. DOH developed, and EPA approved, TMDLs for the Anacostia River, and made load allocations to the combined sewer system¹⁰. DOH reviewed the water quality modeling used to develop the LTCP to determine whether the plan would meet the water quality standards for the Potomac and Rock Creek.

DOH also reviewed the water quality computer modeling done for the LTCP concerning the water quality standards for Rock Creek and the Potomac. At the beginning of the design phase of the LTCP, a series of meetings were held between DOH and WASA to discuss the technical tools that would be used by DOH to assess the ability of the LTCP to meet the numerical criteria of the water quality standards. DOH was in the process of constructing certain water quality models to use in the preparation of TMDL's. It was acknowledged that the TMDL's would include an allocation to the CSOs. The water quality models would encompass what DOH believed was a climatologically representative sequence of years for the Anacostia River. WASA agreed to use and improve the DOH models in the preparation of the LTCP, and where DOH did not have a model under preparation, WASA would construct a "TMDL type" of model and use it in the LTCP and then turn it over to DOH for use as a TMDL model.

DOH held monthly TMDL model development meetings that were open to the public, and attended by WASA, the Maryland jurisdictions as well as environmental groups. These meetings included the subject of water quality standards and LTCP updates. At the end of the

LTCP process, DOH and WASA were using the same tools to determine achievement of the numerical goals of the water quality standards. In the LTCP, WASA did not make allocations to other sources except as a general measure. DOH on the other hand conducted a rigorous analysis of different allocations to CSO, Maryland, MS4 storm water and runoff.

DOH completed the TMDLs for BOD and total suspended solids, significantly before the LTCP was completed and WASA "adopted" the allocation in those TMDLs as an integral assumption in the final LTCP. For the Anacostia basin bacteria and toxics, the LTCP was essentially complete when DOH began the analysis of allocation options that would meet the WQS. It

became necessary for DOH to ensure that the degree of control of CSO in the LTCP, when considered with other sources, would achieve the numerical criteria. DOH used the same loadings as the final LTCP and ran allocation reductions to the other sources that affected the waterbody. The model calculations were checked for achievement of the WQS.

The Anacostia Basin bacteria TMDL has a set of tables showing different parts of the river and the achievement of the numerical criteria. Additionally, there is a detailed appendix of data that demonstrates compliance with the numerical criteria. The same exercise was conducted for bacteria in Rock Creek and the Potomac. In an effort to be very conservative, DOH examined the allocation to see if the LTCP would achieve compliance with even more stringent water quality standards such as "no more than 10% of the days exceed 400 organisms/100ml". DOH found that the LTCP allocation exceeded what would be needed for DC waters, but that Maryland will need to make greater reductions to achieve that water quality standard.

For the toxics TMDL, there was not a common tool, but the same hydrological conditions were used. DOH used the overflow volumes in the LTCP and assigned concentrations to those volumes, and then made allocations to CSO, the separate municipal storm sewer system (MS4) storm water runoff, and Maryland. It was determined that the volume of CSO remaining after implementation of the LTCP would not contain enough toxics to cause or contribute to a water quality standard violation. The toxics TMDL's contain the calculations that ensure the LTCP will meet WQS. All TMDL's include a margin of safety.

DOH concluded that for Rock Creek and the Potomac, the studies and modeling in the LTCP demonstrated that the remaining overflows after implementation of the LTCP will meet the District's water quality standards in all receiving waters, in accordance with the 1994 CSO Control Policy.

Monitoring of District Waters

Pursuant to regulations at 21 DCMR 1901 *et seq.*, DOH reviewed the monitoring and compliance measures detailed in the LTCP for compliance with the WASA National Pollution Discharges Elimination System NPDES Permit No. DC0021-199, for the Blue Plains Waste Water Treatment Plant. DOH determined that the monitoring and compliance measures, including post construction monitoring, described in the LTCP, will provide adequate information to review performance after the LTCP has been in operation.

Public Notice Requirement

The District of Columbia is located at the Fall Line and it is here that the free flowing rivers become tidally influenced estuaries. The majority of the pollution loads that are in the District of

Columbia waters originate outside of the District of Columbia. Storm flows on Rock Creek, the Anacostia and the Potomac bring tremendous loads of pollutants to the District waters that exacerbate the difficulty of controlling District of Columbia sources. Even so, huge amounts of progress have been made in restoring the aquatic habitat. American shad, hickory shad and striped bass now spawn in the District of Columbia after a thirty year absence. Submerged aquatic vegetation has staged a slow recovery in the Potomac and Anacostia. Bald Eagles and ospreys routinely nest in and near the District. The restoration of the rivers is not complete,

particularly in the case of the Anacostia. The CSO LTCP is a major step in restoring the Anacostia and it places a priority on controlling the overflows to the Anacostia. This required that there be an extensive effort to ensure public involvement in the process.

WASA and the District complied with the public notice and comment requirement for the LTCP, as required by the federal Clean Water Act and the Water Pollution Control Act.

On October 4, 2001, the D.C. City Council Committee on Public Works held a public hearing on WASA's LTCP. The Council proceeding was broadcasted on the city's cable channel. On October 22, 2001, WASA held a public hearing on the LTCP. The plan was publicized in the media, the D.C. Register, and on the District's city cable channel 16. In addition, WASA provided questionnaires to the public on the LTCP. The LTCP provides a summary of those activities.

¹ Final LTCP, Chapter 13.3.4 and 13.4

² Primary contact recreation - those water contact sports or activities which result in frequent whole body immersion and/or involve significant risks of ingestion of the water.

³ Secondary contact recreation - those water contact sports or activities which seldom result in whole body immersion and/or do not involve significant risks of ingestion of the water.

⁴ 21 DCMR 1158.5 states:

Primary contact recreation shall be prohibited in the Potomac and Anacostia Rivers and Rock Creek until such time as the standards in § 1101.2 for Class A beneficial use are consistently maintained.

⁵ The EPA criteria document estimated that at a geometric mean of 200 organisms per 100ml that there would be about 8 illnesses out of 1,000 swimmers at a recreation swimming beach. The use of a geometric mean recognizes that there will be occasions where individual samples will be higher than 200 organisms/100ml.

⁶ Environmental Protection Agency's (EPA) CSO Technology Fact Sheet entitled "Combined Sewer Overflow Technology Fact Sheet, *Alternative Disinfection Methods*" (EPA 832-F-99-033).

⁷ Final Report LTCP, dated July 2002, Chapter 13

⁸ Final Report LTCP, dated July 2002, section 13.3.4

⁹ CWA Section 303(d)(1)(C)

¹⁰ See <http://www.epa.gov/reg3wapd/tmdl.htm>