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To : U.S. Environmental Protection Agency
Clerk of the Board
Environmental Appeals Board
Colorado Building
1341 G Street, NW Suite 600
Washington, D.C. 20005

From : Stephen H. Kaiser, PhD

**Petition for Review of EPA Permit Decision :
NPDES Permit No. MA0101974
(for) the City of Cambridge, Massachusetts**

I am hereby submitting a petition for review of the final National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to the Federal Clean Water Act, as amended, specifically Permit No. MA0101974 issued by EPA to the City of Cambridge on October 1, 2009. I received my copy of the decision on October 5 via registered mail, at the Central Square Post Office in Cambridge, Mass.

I am also submitting a copy of this appeal electronically to your office, and I understand that in so doing the requirement to submit multiple copies is waived.

BACKGROUND

I reviewed the draft NPDES permit as noticed July 24, 2009 and submitted my comments to Regional EPA in Boston on August 22, 2009. My comment letter reinforces my concerns as described in this appeal and is attached as Exhibit 6. The focus is on water quality issues for Alewife Brook only and not the Charles River.

My technical concern is the interaction of CSO and SSO overflows during wet weather conditions. I have given special attention to inflow during flood events when elevations of Alewife Brook rise sufficiently high to cause overtopping of CSO weirs or other structures that determine the elevations at which both sewer overflows and brook inflow occur.

I have provided a more detailed background of the sewer overflow, inflow and drainage issues as Exhibit 1. Exhibits 2 and 3 illustrate photos and a news article of the consequence of increased inflow on downstream overflows. In this case, the SSO overflow occurred at the MWRA Alewife Brook Pump Station in Somerville, one to two miles downstream of Cambridge's CSO structures on Alewife Brook. Exhibit 4 illustrates brook elevation during a storm. Flood elevations of 5.6 feet NGVD were sufficient to overtop and flow into all five open CSO structures, causing significant inflow volumes to the regional sewer system. Data was obtained using existing Cambridge stream gauges.

Exhibit 5 contains the published flood analysis by the City of Cambridge from the NPC of 2001 and Final Variance Report of 2003. It includes the consequences of the proposed drainage relief project known heretofore as Contract 12. These reports demonstrate both the extent of additional flooding in a ten year storm, as well as the awareness of this fact by the City of Cambridge. Unfortunately, the analysis was limited to a ten-year storm and did not include information on the 100-year flood and resulting CSO inflow. Exhibit 6 is a copy of my comments of August 22 on the draft permit. This exhibit further documents the concerns raised in this petition.

CLAIMS FOR REVIEW OF CERTAIN SECTIONS OF THE PERMIT

I contend that certain conditions and the lack of completeness of those conditions are based on demonstrated erroneous findings of fact and a failure to include conditions sufficient for full compliance with the law.

1. The permit requirement specified in Annual Report D.5. for a study of inflow does not impose any limitations on the City of Cambridge or MWRA relative to action on its drainage relief plan, its indicated flooding and inflow increases, and the proponents' failure to replace original proposals for mitigation with new plans for mitigation. The EPA has incorrectly represented the flooding consequences of these drainage plans and their intimate connection with approved plans for combined sewer separation. Specifically, EPA has failed to recognize how these drainage modifications will result

in increased local flooding and inflow into the sewer system, with likely increased SSO discharges at the MWRA pump station overflow downstream, and has failed to protect against such environmental damage from occurring until -- at a minimum -- the analysis and report on inflow and necessary mitigation has been completed.

2. The permit requirement for the inflow study should have specified an inflow problem statement to be included in the April 30, 2010 Annual Report, as a preliminary to the study report the next year. The absence of such a problem statement could undermine the goal of EPA for a meaningful and useful study and report by the permittee on the subject matter of stream inflow, as specified in Section D.5. A clear and accurate problem statement is one of the major components in a useful and accurate inflow study to avoid any increase in such inflow and to assure compliance with NMH#4.
3. The permit should have specified a schedule for flap gates or similar flow restrictions to allow for single-directional overflow only from CSOs and to prevent the reverse direction or inflow of Alewife Brook floodwater into the CSO and MWRA interceptor system. Such a requirement would be conditional upon the results of the inflow study in Section D.5.
4. The permit should have recognized the Cambridge monitoring gauges which have been in place since 2001 and should require that data from these gauges be summarized in the Annual Reports to include wet weather conditions and especially major floods. This information is an essential element in understanding the nature of CSO inflow from Alewife Brook and in rendering a preliminary calculation of the duration and volume of such inflow during a specified storm condition, as called for in Section D.5.

PETITION FOR RELIEF WITH RESPECT TO PERMIT NO. MA0101974

For the purposes of relief from the above-state deficiencies in the permit, I request the following actions in the form of modifications to the final NPDES permit. I seek no further action or enforcement from EPA, MWRA or Cambridge at this time.

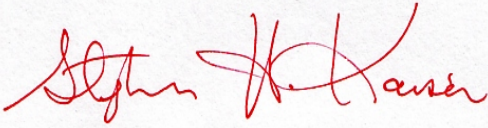
1. Insert between Sections C.3 and C.4 the following : "The permittee shall take no action to increase flood levels in Alewife Brook, in particular to construct the drainage relief project heretofore known as Contract 12."

2. Insert within Section C.4 after (NMC#9) "and sewer inflows during flood conditions (NMC#4)." and after "... of discharge(s)" (thrice) insert "or flood inflow(s)."
3. Insert at the end of Section D.2. "Maximum and minimum elevations of Alewife Brook during the previous year for each day, utilizing City of Cambridge stream gauges or other information sources. Elevations of all CSO weirs."
4. Insert within Section D.5. after "in Part I.C" : "The first Annual NMC Report (due April 30, 2010) shall include an initial statement of the inflow problem in terms of the potential for inflow from Alewife Brook under flood conditions."
5. Insert at the end of Section D.5. "The Third Annual Report (due April 30, 2012) shall include a progress report on evaluations of the initial study and any plans for action to seek compliance with NMC#4."

CONCLUSION

Based upon my analysis of the sewer overflow, flooding and inflow conditions along Alewife Brook, I believe that the claims and relief stated above are reasonable and proper with respect to the facts at Alewife Brook for overflow, flooding and inflow. I also believe that the relief sought in the form of additions to the October 1 permit are reasonable and would be sufficient to conform to the facts regarding the physical conditions of Alewife Brook, as well as the requirements of law as specified in the permit and in the Nine Minimum Controls cited in the permit.

Sincerely,



Stephen H. Kaiser, PhD

cc. George Papadopoulos, USEPA
1 Congress Street - Suite 1100 Boston, MA

Glenn Haas, Director, Division of Watershed Management
Bureau of resource Protection, DEP, One Winter Street Boston, Mass.

Lisa Peterson, Commissioner, Cambridge Department of Public Works
147 Hampshire Street, Cambridge, Mass.