January 4, 2006

BY OVERNIGHT DELIVERY

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

RE: *In re: City of Cambridge, DPW*
NPDES Permit No MA-0101974

Dear Sir or Madam:

ROGER FRYMIRE Enclosed for filing in the above-referenced matter, please find the *Petition for Review* of ~~the Town of Arlington,~~ which includes a supporting brief for the *Petition*. In accordance with EAB procedures, I am providing one original and five copies.

Thank you for your attention to this matter.

Very truly yours,

Roger Frymire

Roger Frymire
22 Fairmont Avenue
Cambridge, MA 02139-4423
617-492-0180
ramjet@alum.mit.edu

Enclosures

cc: Roger Janson, EPA
Paul Hogan, DEP
Cambridge DPW

BEFORE THE
ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re: City of Cambridge, DPW
Combined Sewer Overflows (CSO)

NPDES Appeal No. _____

NPDES Permit No. MA0101974

PETITION FOR REVIEW

FROM

ROGER DOYLE FRYMIRE

Roger Frymire
22 Fairmont Avenue
Cambridge, Massachusetts 02139
Tel. 617-492-0180
E-Mail: ramjet@alum.mit.edu

Dated: January 4, 2006

PETITION FOR REVIEW

Pursuant to 40 CFR § 124.19, Roger Doyle Frymire ("Mr. Frymire") hereby petitions the Environmental Appeals Board for review of NPDES Permit No. MA0101974 ("Final Permit"), which was jointly issued to the City of Cambridge ("Permittee") on September 27, 2005, by the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP").

Mr. Frymire asserts that certain conditions included in the Permit, and other conditions that EPA and DEP either omitted or removed from the Permit, violate the applicable requirements of the Federal Clean Water Act, 33 U.S.C. § 1251 *et seq.* ("CWA"), the Massachusetts Clean Water Act, M.G.L.c.21, § 26 *et seq.*, ("Act") and the regulations thereunder. These conditions pertain primarily to the discharge of combined sewage and stormwater from eleven outfalls to the Charles River and Alewife Brook. As shown in detail below, the Permit allows the Permittee to continue discharging combined sewage at levels that cause bacterial levels to violate state water quality standards.

* * *

INTRODUCTION/BACKGROUND

Roger Doyle Frymire ("Mr. Frymire")

Mr. Frymire is a private citizen and resident of Cambridge, Massachusetts. For recreation Mr. Frymire regularly walks along and Kayaks in both the Charles River and Alewife Brook. This occurs year-round in all weather, frequently in conjunction with

volunteer water quality sampling conducted with the Charles and Mystic River Watershed Associations ("CRWA" and "MyRWA").

Mr. Frymire is aggrieved by the Permit because his use and enjoyment of the impacted waters is diminished by the health threat from pathogens in sewage, and by odors and visual impacts of sewage floatables and solids which settle to the bottom causing long-term impairment to the Dissolved Oxygen content especially in Alewife Brook

* * *

JURISDICTIONAL BASIS FOR PETITION

Mr. Frymire submitted comments during the public comment period on the draft Permit in a letter dated June 11, 2003.[Attachment 1] Mr. Frymire's comments raise and support the issues presented in this Petition. Therefore, Mr. Frymire complies with the requirement that the issues raised in the petition for review were raised below, in accordance with 40 CFR § 124.19(a). This *Petition for Review* has been timely filed as it is being delivered to the Environmental Appeals Board ("EAB") within thirty (30) days of Mr. Frymire's receipt of the Final Permit (received December 7, 2005).

Mr. Frymire will also demonstrate below that the Permit contains findings of fact or conclusions of law that are clearly erroneous, and include an exercise of discretion or important policy implementation which this Board should review. 40 CFR § 124.19(a). Specifically, Mr. Frymire will demonstrate the following:

- The Permittee has made dramatic reductions in CSO activations and volumes in the last ten years, as shown by metering conducted by the Permittee and

reported quarterly to EPA and DEP. These improvements are continuing as the Permittee pursues a longer-term goal of *elimination* of all CSOs.

- The Permit attachments "B" and "C" with permitted Annual Activation Frequency and Annual Volume for each of eleven outfalls under both Current and Future Planned Conditions should be changed to take into account actual discharge measurements.
- The Permit unjustifiably sets current allowable annual volumes between two to seventy (70) times the highest volume seen in the last three years. The median is about four times.
- The Permit unjustifiably sets current allowable Annual Activation Frequencies as much as six times the highest activation frequency metered in the last three years. The median outfall is permitted for twice the actual number of activations.
- The Permit unjustifiably sets Annual Activation Frequencies too low for two outfalls by a small amount. The Permittee's excellent progress to date should allow for a small loosening of these limits to better match the actual conditions metered by the Permittee.

ARGUMENT

Lacking legal resources, Mr. Frymire will attempt a concise, common-sense argument of this Petition:

OUTFALL	Permit Existing Conditions	METERED CSO ACTIVATIONS and VOLUMES volumes rounded up to next 10,000 gallons 2000	2001	2002	2003	2004	Permit Planned Conditions	
CAM001	0	1	5	4	1	2	5	activations
	0	0	0.24	0.08	0.01	0.02	0.2	volumes MG
CAM002	7	4	7	2	2	0	4	activations
	1.52	1.3	4.89	1.29	0.92	0	0.72	volumes MG
CAM004	14	7	8	5	2	1	0	activations
	7.69*	*	*		0.61	4.57	0	volumes MG
	* - meter volumes unreliable							
CAM400	10	3	5	1	2	4	0	activations
	0.78	0.01	0.59	0.01	0.07	0.02	0	volumes MG
CAM401A	7	13	8	3	9	7	5	activations
	2.77	3.87	22.24	0.74	1.35	1.59	1.65	volumes MG
CAM401B	25	8	4	0	3	7	7	activations
	10.7	1.97	0.29	0	0.02	0.14	2.24	volumes MG
CAM005	8	2	5	2	4	3	2	activations
	2.51	0.2	5.36	0.73	0 09	0.26	0.78	volumes MG
CAM007	2	0*		0	0	0	1	activations
	0.72	0*		0	0	0	0.03	volumes MG
CAM009	6	4	5	1	0	1	1	activations
	0.21	2.02	0 71	0.02	0	0.05	0.08	volumes MG
CAM011	2	0	2	1	0	0	0	activations
	0.07	0	0.57	0.01	0	0	0	volumes MG
CAM017	2	1	2	0	0	2	2	activations
	1.07	2.62	0.29	0	0	0.34	1.23	volumes MG

2001 includes a very large ~50-year recurrence storm

2004 includes a 5-10 year recurrence storm which caused over 2/3 of all volume this year

The above table summarizes the Permittee's metering over the last five years for which

data is available to Mr. Frymire. The source data for this compilation may be viewed on the Permittee's website:

http://www.cambridgema.gov/TheWorks/departments/swrMnt/cso.html

Permit limits are based on a 'typical' year rainfall so storms larger than those with a one-year recurrence interval are not accounted for in the Permit. Such very large storms occurred in 2001 and 2004. Highlighted are the largest volume and greatest number of activations in the last three years for each outfall – not always the same year. These highlighted numbers are what Mr. Frymire considers to be reasonable permit limits for existing conditions. Even with the ample margin given by including the five-year storm of 2004, almost all the Permit limits in Permit attachments B and C are *much* higher If the permit does not reflect reality, how is the public to know when progress is being made? The Permittee can be justifiably proud of progress to date, but the permit should ensure that this progress is noticed and maintained to avoid backsliding on the path towards ELIMINATION of these discharges. The permit allows over 27 Million Gallons (MG) of sewage to discharge annually under existing conditions, when the metered maximum yearly total over the last three years was only 7 MG. Even the 7 MG in 2004 was mostly the result of one five-year storm which is beyond the typical year permitted.

RELIEF REQUESTED

For all of the foregoing reasons, Mr. Frymire requests that the Board direct EPA Region 1 to amend the Final Permit to amend Permit Attachments B and C as follows:

> CAM001 – *Increase* activations to 4 and volume to 0.05MG under existing conditions. Consider reducing volume to 0.05MG under planned conditions.
>
> CAM002 – Reduce activations to 2 for both existing and planned conditions.

CAM004 – Reduce activations to 5 and volume to 4.57MG for existing conditions.

CAM400 – Reduce activations to 4 and volume to 0.07MG for existing conditions.

CAM401A – *Increase* activations to 9 for existing conditions and reduce volume to 1.59MG for both existing and planned conditions.

CAM401B – Reduce activations to 7 and volume to 0.14MG for both existing and planned conditions.

CAM005 – Reduce activations to 4 and volume to 0.73MG for existing conditions.

CAM007 – Eliminate all activations and volume under existing and planned conditions.

CAM009 – Reduce activations to 1 under existing conditions and volume to 0.05MG under existing and planned conditions.

CAM011 – Reduce activations to 1 and volume to 0.01MG under existing conditions.

CAM017 – Reduce volume to 0.34MG under existing and planned conditions.

ROGER DOYLE FRYMIRE

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One attachment.

Attachment 1

TO: Mr. George Papadopoulous

FROM Roger Frymire

DATE June 11, 2003

R.E.: Draft Permits #MA0101974 and #MA0101982

Sir –

The City of Cambridge has been metering all city CSO outfalls for several years. They are to be commended for this extensive metering, and also for the significant progress in understanding their systems and implementing SOPs and BMPs which have noticeably reduced both activations and volumes from these CSOs.

Upon comparing this metering data with the MWRA's collection system model run for 2001, I became aware of large disagreements between the model's estimates of CSO flows and the metered data. Because the Draft Permit has activation and volume #'s based on the model, I believe the permit should be amended using the metered data. I have calculated a set of current activation numbers and volumes based on the metered data which I hope you will consider. Not having access or ability to run a model, I did not attempt any modifications to the numbers for future planned conditions, but I hope they will in every case be at least as stringent as those calculated from current meter data.

Cambridge metering has been conducted since at least 1998. Continual engineering improvements and BMP implementation in Cambridge shows a rough, but steady decline in volumes of CSO which continue through the latest data I have. Also, the size of storm required to cause ANY CSO activations has continued to rise. On March 29-30, 2003, a 2.27" storm resulted in NONE of Cambridge's CSOs activating!!! I would not want to hold Cambridge to that high standard in the immediate future, as the RATE of rainfall is often more of a factor in activations than the total rainfall. However, I do want to capture a significant portion of the recent years' improvements in the numbers I recommend for this permit.

Method – Since later years show significant improvement over earlier metering – both in meter reliability and perceived system improvement – I analyzed meter data for 2001, 2002, and Q1 of 2003 I looked at all storms (down to 0 45") with metered CSO events, and also all storms over ¾" which had no activations. There were 11 storms in '01, 17 in '02, and 3 in '03. Thirteen of these storms resulted in NO overflows at Cambridge outfalls! To pick a number of activations for the Cambridge permit, I simply took 2/3 of the actual activations seen. This gives a generous 50% 'fudge factor' to account for the 2002 drought. In four cases, this results in an INCREASE in activations from the permit proposal for current conditions, but for most outfalls, this results in a significant drop in current allowed activations.

For the CSO volumes proposed, I threw out two storms with a rainfall recurrence interval significantly greater than the 1-year storm in the MWRA's 'typical' year. There were more than the expected number of storms remaining with 9-15 month recurrence intervals. Then I just averaged the volumes for activations at each outfall and multiplied by the (exaggerated?) number of expected activations I cite. I chose my fudge factors with care so as not to penalize Cambridge for the excellent job they have done to date. The volumes I suggest for current permit conditions show a

Attachment 1

30% drop from the draft permit, but also are allocated to the outfalls where metering indicates the volumes are actually escaping. Again, four outfalls show an INCREASE in allowed volumes from the draft permit. I believe this corrects a potentially very serious problem for Cambridge in meeting the permit requirements.

I did not include CAM004 in this exercise, because the metering there has been inaccurate due to backwater problems until recently, so there was not enough of a baseline to feel comfortable with suggesting new limits. Also, This basin is planned for full sewer separation, so I am well satisfied with the future 0 activations and 0 volumes here and not so worried about current permit conditions.

For SOM001A, metering is not available, but city estimates of volumes combined with notes on activations from a 'tell-tale' device lead me to suggest a new current permit limit. HOWEVER, this is far from solidly based, and merely a suggestion that the draft permit seems to be more than a little too loose here.

My suggested permit limits for current conditions are: (numbers in () are from draft permit)

CSO Outfall	yearly activations		yearly volumes in MG	
CAM001	6	(0)	.05	(0)
CAM002	6	(7)	2.86	(1.52)
CAM401A	10	(7)	11.94	(2.77)
CAM401B	4	(25)	.06	(10.7)
CAM400	4	(10)	.02	(.78)
SOM001A	2	(10)	.25	(9.9)
CAM005	4	(11)	1.54	(3.77)
CAM007	0	(1)	0	(.78)
CAM009	4	(12)	.15	(.13)
CAM011	2	(1)	.06	(.07)
CAM017	1	(6)	.14	(4.79)

Even with my proposals for more activation and volumes at some outfalls, these numbers hold to an overall tighter standard for total volumes and activations than does the draft permit. I believe a permit based on metering to be far superior to one based on models. I hope you will enter into discussions with the permittees to accept these proposals, or analyze the data yourselves more rigorously to verify and even modify my proposal if need be.

Also, I request that the permit include a requirement for similar metering over the life of the permit so the next permit may be more firmly based on data rather than modeling.

Thank You for considering this proposed modification to the draft CSO permits for Cambridge and Somerville.

Sincerely,

Roger Frymire

Roger Frymire