Rogacki, Larry

From: Balogh, Steve
Sent: Tuesday, April 27, 2010 10:00 AM
To: Rogacki, Larry
Cc: Polta, Bob
Subject: Estimated PFOS loads in Metro effluent and the Mississippi River

Larry,
I think the best estimate we have for the Metro Plant contribution to PFOS levels in the river is basically as we discussed earlier, but there is substantial uncertainty. Based on MPCA's Pool 2 sampling on 7/2/2009, the PFOS load in the river upstream of Metro is estimated at 56 g/d; the load downstream of Metro is estimated at 223 g/d, signaling an increase of 167 g/d due to Metro input. (Other sources (ie. Pigs Eye Lake, North Star Steel, etc.) may contribute to the upstream/downstream increase.) An independent estimate of the Metro input to the river based on Metro effluent sampling yields a mass load in Metro effluent of 55 g/d (using effluent concentration data (90 ng/L) from MPCA sampling in 2007 (n=2) and R&D sampling from 11/2009 (n=1)). One effluent sample from 7/2009 showed a PFOS concentration of 250 ng/L; based on this concentration, the Metro Plant effluent PFOS load would be 152 g/d. So I think it is fair to say that the Metro Plant's effluent load of PFOS probably lies in the range 50-200 g/d, representing approximately 100-400% increases in the river load. Clearly a lot of uncertainty here, both in the Metro contribution and in the river load.
Steve

Steven J. Balogh, Ph.D.
Principal Research Scientist
Metropolitan Council Environmental Services
2400 Childs Road
St. Paul, MN 55106
651 602 8367 phone
651 602 8215 fax
- 10th International Conference on Mercury as a Global Pollutant
- Halifax, Nova Scotia, Canada; July 24 - 29, 2011
- Please visit: http://mercury2011.org/mercury2011/Welcome.html

Mississippi River discharge at St. Paul, 7/2/2009	9110	cfs	
Estimated PFOS concentration, Mississippi River at St. Paul	2.5	ng/L	(half the DL, MPCA Pool 2
Mass load of PFOS, Mississippi River at St. Paul	56	g/d	
Estimated PFOS concentration, Mississippi River downstream of Metro Plant	10	ng/L	
Mass load of PFOS, Mississippi River downstream of Metro Plant	223	g/d	
Mass load increase in river, upstream/downstream of Metro Plant	167	g/d	
Metro Plant discharge, 7/2/2009	160.95	MGD	
Estimated PFOS concentration, Metro Plant effluent	90	ng/L	based on MPCA data from
Mass load of PFOS, Metro Plant	55	g/d	
Estimated PFOS concentration, Metro Plant effluent	250	ng/L	based on single MCES data 7/2009
Mass load of PFOS, Metro Plant	152	g/d	