

From: "Douglas, David" <David.Douglas@state.mn.us>
To: "Kriens, Don" <Don.Kriens@state.mn.us>
Date: 7/23/04 11:23AM
Subject: RE: 3M Cottage Grove/Call from Bob Paschke

Don, thanks for your very clear explanation of the situation. It is my recollection that you estimated that about 1,500 pounds of PFCs were being discharged into the river from the 3M Cottage Grove WWTF at the time that the MPCA required the construction of the GAC system. There is a 3M Woodbury site report that indicates that about 45 tons of PFC waste was buried at the 3M Woodbury site. If 50 pounds of PFOS and PFOA are being discharged into the river per year from the 3M Woodbury site (please note that Bob Paschke told me that he believes that the flow is 5 million gpd), can you estimate the discharge of all PFCs per year from the 3M Woodbury site? Dave

> -----Original Message-----

> From: Kriens, Don
> Sent: Friday, July 23, 2004 10:34 AM
> To: Douglas, David
> Cc: 'Jim Kelly (E-mail)'; Brott, Bruce; Ferrey, Mark; White, Dann;
> Stahnke, Gerald; Connolly, Mike; Oliaei, Fardin; Solem, Laura;
> Everstine, Karen; Day, Douglas; Williams, Alan; Silis, Ainars
> Subject: RE: 3M Cottage Grove/Call from Bob Paschke

>
> Dave, just a few brief comments. The Woodbury pumpout flow is
> probably less than 5 MGD; I believe it is more on the order of 2-3 MGD
> (unless there are considerable consumptive water losses in the Cottage
> Grove plant). We can get the accurate flow numbers. The total
> cooling water flow from the 3M Cottage Grove plant is about 4 MGD on
> average. The Woodbury pumpout is directed to the plant for cooling
> water use/makeup. A portion of the cooling water flow used at the
> plant, however, is obtained from the plant site wells and is thus
> combined with the Woodbury pumpout flow.

>
> The granular activated carbon (GAC) system recently installed at the
> plant is designed solely for carbon treatment of the treated process
> wastewater effluents, which also averages about 4 MGD. The new GAC
> system was not designed to treat any additional cooling water flow
> although during emergencies, such as spills into the cooling water
> system, the cooling water can be diverted for temporary treatment
> through the GAC system. At the time we negotiated the installation of
> the GAC system, required by the NPDES permit, we were unaware that FCs
> were contaminants of the site groundwater as well as the Woodbury
> groundwaters (pumpout). The GAC system was installed to remove the
> miscellaneous organics discharged from the facility, in part initially
> driven by a need to remove acute effluent toxicity due to APE
> compounds. The GAC system in our view would also represent the best
> available technology to remove the FCs. Given the relatively high
> molecular weight of these compounds we would expect removal to very
> low concentrations.

>
> At some point it would be relatively easy, via additional sampling of
> the combined cooling and process effluent (post GAC treatment), to
> determine the FC mass loading discharged to the river. If we are
> planning a fish or "stream" study of the Mississippi River with

**Exhibit
1957**

State of Minnesota v. 3M Co.,
Court File No. 27-CV-10-28862

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1957.0001

> respect to FCs then it seems appropriate to conduct a mass balance (FC
> mass discharged in the combined effluents) for the FCs.

>

> Don

>

> -----Original Message-----

> From: Douglas, David

> Sent: Thursday, July 22, 2004 11:14 AM

> To: Jim Kelly (E-mail); Brott, Bruce; Ferrey, Mark; Kriens,

> Don; White, Dann; Stahnke, Gerald; Connolly, Mike; Oliaei, Fardin;

> Solem, Laura; Everstine, Karen; Day, Douglas; Williams, Alan

> Subject: 3M Cottage Grove/Call from Bob Paschke

>

> Bob Paschke called me today to talk about the draft 3M Cottage
> Grove Health Consultation report and expressed concerns about MDH's
> first recommendation about considering conducting a 3M Cottage Grove
> remedial investigation under the consent order addendum similar to the
> 3M Decatur, Alabama facility investigation being conducted under EPA
> authority. I stated that nothing has changed here regarding what
> Bruce Brott told 3M regarding proceeding at 3M Cottage Grove with a
> phased approach starting with ground water under the facility. Bob
> expressed concerns about doing a mammalian study and a vegetation
> study. I stated that we had not talked about these types of studies
> but had talked about a stream and Mississippi River sediment study and
> a Mississippi River fish study. Also I stated that we had concerns
> about second generation human effects from PFCs. He said that he did
> not know much about second generation human effects from PFCs, but
> said that John Butenhoff at 3M was the toxicologist who knows most
> about the toxicology of PFCs. I emphasized several times that 3M
> needs to respond directly the MDH about their concerns about MDH's
> first recommendation and anything else in the document.

>

> I asked Bob if 3M had test results back for the ground water
> pump out well effluent from the 3M Woodbury site (where PFC wastes
> were buried) and he said that the results indicated that there was 1
> ppb PFOS and 2 ppb PFOA in the effluent. (The HBV for PFOS is 1 ppb
> and the HBV for PFOA is 7 ppb.) He said that the volume of Woodbury
> site effluent (discharged directly to the Mississippi River) is
> approximately 5 million gpd. I estimate that this is equivalent to a
> discharge of 33 pounds of PFOA per year and 16 pounds of PFOS per year
> or about 50 pounds per year of the two PFCs. Because these are just
> two of many PFCs in the effluent, it is difficult to say how many
> pounds of PFCs are discharged into the Mississippi River per year.
> This effluent is not treated by the 3M Cottage Grove WWTF and there
> are no plans for this effluent to be routed through the new carbon
> filtration system. I asked for a copy of the lab data and Bob said
> that he would fax a copy to me. If you are interested in copy of the
> data, please let me know.

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>

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