Message

From: Mitchell, Ken [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=E49335E2F5A64CBFA97C39CBF1FAFF2B-MITCHELL, KENNETH]
Sent: 1/3/2018 7:19:14 PM
To: Gary Saunders [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user2edd9500]; Strynar, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5a9910d5b38e471497bd875fd329a20a-Strynar, Mark]
CC: Lindstrom, Andrew [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=04bf7cf26aa44ce29763fbc1c1b2338e-Lindstrom, Andrew]; Kemker, Carol [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=765ad99166db4233bd15febf6e9917b3-Kemker, Carol]; France, Danny [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2ea6b0627f864f7aa4b237db0d581671-France, Danny]; Gettle, Jeaneanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d8e72aa7e1894faea44006fd9f22b637-Gettle, Jeaneanne]; Mundrick, Doug [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef7f9ffa108342448a86b49d631bb24a-Mundrick, Douglas]; Jones, Aaryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c2bed08a5bd54dc5a9d59c5a345c9892-Jones, Aaryn]; Allenbach, Becky [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fd8d7185973c44268441863f02a769d1-Allenbach, Becky]; George, Verne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8d8c394177af44b28b4ce452bccbc851-George, Verne]; Bookman, Robert [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1e8db468531a44949eec31f94db4f002-Bookman, Robert]; Vogel, Shannon [shannon.vogel@ncdenr.gov]; Michael Pjetraj [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userb4a70c7a]; Mitchell, Ken [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e49335e2f5a64cbfa97c39cbf1faff2b-Mitchell, Kenneth]
Subject: RE: [External] RE: Chemours Test Protocol

Gary....thanks for the follow-up. Very helpful!

Kenneth L. Mitchell, Ph.D. | Special Assistant to the Director |
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From: Saunders, Gary [mailto:gary.saunders@ncdenr.gov]
Sent: Wednesday, January 03, 2018 2:11 PM
To: Mitchell, Ken <Mitchell.Ken@epa.gov>; Strynar, Mark <Strynar.Mark@epa.gov>
Cc: Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>; Kemker, Carol <Kemker.Carol@epa.gov>; France, Danny <France.Danny@epa.gov>; Gettle, Jeaneanne <Gettle.Jeaneanne@epa.gov>; Mundrick, Doug <Mundrick.Doug@epa.gov>; Jones, Aaryn <Jones.Aaryn@epa.gov>; Allenbach, Becky <Allenbach.Becky@epa.gov>; George, Verne <George.Verne@epa.gov>; Bookman, Robert <Bookman.Robert@epa.gov>; Vogel, Shannon <shannon.vogel@ncdenr.gov>; Michael Pjetraj <michael.pjetraj@ncdenr.gov>
Subject: RE: [External] RE: Chemours Test Protocol

Just a couple of points:

We do need the company to get moving on some air emissions testing to quantify emissions levels. This is a place to start.

In our last meetings with Chemours personnel, we stressed our interests in having other compounds measured **AND** that we were looking at a testing campaign that might actually be a weekly testing process (not always for the same compound or the same stack, but for a suite of compounds, over time, to characterize what is being emitted). At one level, we (NCDAQ) understand why the focus is on only the one compound: It's the one in the news and it might be one of the compounds that is more easily measured.

For example, my sense of the original position of the company was that only the C3 Dimer acid was going to be investigated and quantified. There was some indication that the sampling procedure might also collect other compounds that might also show up on the LC/MS/MS. Initially, it seemed that the company position was to "ignore" the data because there might not be calibration standards to quantify the amounts found in those other peaks. There may have also been an argument about the other peaks being artifacts, but I don't recall that being a point that was raised in the discussions. NCDAQ has pushed for qualitative identification of these other peaks if they are observed in the analysis. I have written the sampling protocol approval letter to reflect that they shall provide that information to us. That other information might also suggest other investigative pathways.

But I also have a concern that the current sampling method and procedure may only "see" a relatively small number of compounds and that some other sampling methodology might actually be needed.

Part of this exercise might be methods development and methods enhancements process in order to quantify the emissions profile and to "validate" the emissions inventory as well as the use of the ASPEN model for process emission characteristics. In addition, what may work for water and soil sampling may not work all that well for air sampling (for lots of reasons). NCDAQ is stressing, at each opportunity, that we don't see this as a focus on only one compound and that there are other compounds to be considered, even though they are not currently regulated.

The discussion, however, continues.

Gary L. Saunders
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From: Mitchell, Ken [mailto:Mitchell.Ken@epa.gov]
Sent: Wednesday, January 03, 2018 1:19 PM
To: Strynar, Mark <Strynar.Mark@epa.gov>
Cc: Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>; Mitchell, Ken <Mitchell.Ken@epa.gov>; Kemker, Carol <Kemker.Carol@epa.gov>; Saunders, Gary <gary.saunders@ncdenr.gov>; France, Danny <France.Danny@epa.gov>;

Gettle, Jeaneanne <Gettle.Jeaneanne@epa.gov>; Mundrick, Doug <Mundrick.Doug@epa.gov>; Jones, Aaryn <Jones.Aaryn@epa.gov>; Allenbach, Becky <Allenbach.Becky@epa.gov>; George, Verne <George.Verne@epa.gov>; Bookman, Robert <Bookman.Robert@epa.gov>
Subject: [External] RE: Chemours Test Protocol

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Hey Mark....

Yes....they are only looking for the HFPO Dimer Acid (HFPO-DA) in this stack testing campaign.

We have encourage NCDAQ to push Chemours to test for a larger suite of chemicals (including HFPO). The state both agrees with that and, as I understand it, has pushed Chemours to do so.

For various reasons, including the time it has taken to develop a Sampling/test protocol for just HFPO-DA and the time within which the company wants to collect the samples (January 2018), the company has, as I understand it, declined to expand the scope of their analysis (at least for this go around).

That said, there are a couple of nuances that hopefully the test protocol contemplate (the following statements are based on my conversations with you....please let us know I got this wrong):

1. Any HFPO-DA Fluoride in the stack exhaust would likely be hydrolyzed in the sampling train to HFPO-DA. So, the HFPO-DA analytical result may be higher than the stack concentration by some unknown amount. To me, this is almost a moot point as any HFPO-DA Fluoride would likely hydrolyze quickly to HFPO-DA in ambient air.

2. HFPO-DA can esterify on prolonged exposure (a few days) to methanol (which is the extraction solvent*). I would think that, at a minimum, the analysis should also test for the methyl ester of HFPO-DA.

*Also....I presume the extraction solvent (which is actually a mixture of methanol and ammonium hydroxide) is formulated so as to produce the ammonium salt of the HFPO-DA for subsequent chromatographic elution. Is that correct?

Also also....just so you know (I think you do)....our Athens lab has agreed to run split samples with the company. The company apparently hasn't taken us up on the offer as of yet.

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From: Strynar, Mark
Sent: Wednesday, January 03, 2018 7:32 AM
To: Gary Saunders <gary.saunders@ncdenr.gov>; Mitchell, Ken <Mitchell.Ken@epa.gov>
Cc: Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>
Subject: RE: Chemours Test Protocol

Hi Gary. It still seems the only PFAS that is tested for in the samples that is NOT a legacy PFAS is HFPO-DA. Looking at the emission estimates from the Chemours report of many other acid fluorides, and the presence of other PFECAs in surface and ground water samples taken nearby the plant this seems very narrowly focused. Other analytes PFAS will

never be found if they are not looked for. This is a concern to me as the other PFAS emitted also have the potential for transformation to acid forms and wet/dry deposition. These will than contribute to local GW and SW contamination.

Mark

From: Saunders, Gary [mailto:gary.saunders@ncdenr.gov]
Sent: Tuesday, January 02, 2018 11:39 AM
To: Mitchell, Ken <Mitchell.Ken@epa.gov>; Strynar, Mark <Strynar.Mark@epa.gov>
Subject: Chemours Test Protocol

I have attached the most recent edition of the test protocol received from Chemours on Friday, December 22, 2018. It looks like they addressed the issues we identified in the initial draft and made some changes based upon analysis testing in the lab. They are looking to begin testing in early January. Based upon the information that we've discussed with Chemours, we are giving them the tentative approval to proceed to testing.

If you have any comments, please feel free to contact me.

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