H2GO, StarNews, WHQR, WWAY Brunswick County Forum on GenX and Water Quality Concerns
July 19th ● Odell Williamson Auditorium ● Bolivia, North Carolina

Professor at N.C. State University and part of the team of researchers who evaluated the presence of GenX in the Cape Fear River, Dr. Detlef Knappe

- The GenX levels on June 30th, so about nine days after Chemours said they would stop the discharge, were still on the order of 150-200 nanograms per liter. The state actually came out on Friday (July 14th) with a health advisory level on GenX of 140 nanograms per liter. We are still right on the edge of concern.
- The total fluorochemical load is right on the order of 300+ nanograms per liter.
- One thing that I have always emphasized when people ask me questions, is that GenX is really only a small part of the total.
    - For most of those (other fluorochemicals) we don't have standards, so I can't tell you what the concentrations are but you can see that the levels of those other chemicals are a lot higher than the levels of GenX.
    - If we want to reduce exposure to fluorochemicals as a whole, we have to get to these other chemicals as well.
- What we see sometimes in fact, is that Granulated Activated Carbon at some point starts releasing chemicals after you have had it in use for some time.
    - Basically, no removal for this system.
- The only system that worked well is the RO System.
- Emerging contaminants removal percentages:
    - RO 1: 96%
    - RO 2: 98%
    - RO 3: 98%
    - RO 4: 42% (old system, was not working as well.)
    - RO 5: 95%
    - GAC: <0%
    - GAC/IX: 50%
- The Cape Fear River is quite a bit more impaired (than other rivers) when it comes to industrial chemicals.
    - My research team is looking at 1,4 Dioxane, bromide (which is a precursor for cleaning disinfectants), flame retardants which are used by upstream industries.
    - One of the challenges of the Cape Fear River is several large communities are located in the headwaters of the river and they all produce wastewater, and that wastewater gets discharged into the river and there is very little dilution, so the concentration of these industrial chemicals tends to be a lot higher.
    - The Cape Fear River is in a category by itself, in my view.

Biological Oceanography Professor at UNCW, Dr. Lawrence Cahoon

- There is a mixture of compounds in the water. Those compounds have names, they have all been identified in the strictest sense of identifying their chemical formulas and chemical structures. What's missing in almost every case is any information on health effects.
    - We can make certain inferences from their structures and their basic natures. I wouldn't be happy about drinking any of them.
    - We know even less about those compounds than we know about GenX, which is remarkably poorly studied in comparison to some of the older compounds.
    - The unknowns here outweigh the knowns. An excess of caution would dictate that we need to be very cautious about those compounds as well and think about those when we talk about regulating these discharges, deciding what is safe and what isn't, etc.
- We haven't been able to study them (fish and shrimp).
    - Chances are, these compounds don't accumulate in these tissues (that we eat).
- The presence of GenX in our drinking water was not disclosed by Dupont or Chemours.
    - I can assure you that every single fact relevant to this situation will be brought out, probably in multiple courts of law.
- NC DEQ can develop their own regulations and requirements that are more stringent than federal guidelines. We don't need the EPA to tell us what to do.
- The discharge of GenX into the River is illegal, it has never been declared in any of their permits. It needs to be listed by its chemical name and it is NOT. So, its discharge is unlawful.
    - The State of North Carolina has the authority to reopen any permit that's currently in operation and to go back in and change any of their rules. That could include going from a voluntary cessation of the discharge, which is what's happening now, meaning they have the technical ability to do it and making it a requirement.

Aquatic Toxicology/Environmental Endocrinology Assistant Professor at UNCW, Dr. Susanne Brander

- The levels of GenX are decreasing, but as Detlef pointed out in his presentation there are many other perfluorinated compounds present in the water that we don't have studies on so we don't know what the health effects of these compounds may be.
- As far as bathing goes, most of these compounds are fairly hydrophilic, meaning they like water, they aren't necessarily going to penetrate the skin well. Bathing is likely to be relatively safe.
- A study done over two years in rats (funded by Dupont/Chemours) found a slight increase in certain types of cancer; testicular cancer, pancreatic cancer. Other studies have hinted at reproductive issues and effects on immune response.

    - There is only one long-term study done so far.
- The limited amount of data we have on GenX suggest that it doesn't bioaccumulate in foods.
- We know GenX levels are decreasing, but we know that there are six other chemicals that all belong to the same class of perfluorinated compounds and one would presume, although we don't have the data, that they may act via the same biological mechanisms and they may cumulatively cause the same types of health effects.

Cape Fear Riverkeeper, Kemp Burdette

- You will not find a list of pollutants being discharged via nonpoint sources, either storm water or agricultural storm water and that is a pretty significant list of herbicides, pesticides, animal waste- which includes bacteria-, and a host of other pollutants that have a serious impact on our drinking water.
    - And in this case, you may also run across pollutants that are considered 'emerging contaminants' that are not actually listed in permits at all, although they are being discharged.
- Chemours wasn't told to cut off their discharge, they did that voluntarily. They are permitted right now to discharge GenX.
    - It is important that we have a binding agreement, and that can come in a number of forms, it could come in their permit where they are told not to discharge PFC.
- We need to be looking at these chemicals before they are going into our water, before we are drinking them.
    - If we don't start doing that we will be seeing this story over and over and over again, the compound will just be called something else.

Executive Director of North Carolina Rural Water Association, Daniel Wilson, P.E.

- You are up against a lot of lobbying money.
- There are 70,000 KNOWN compounds in existence. Each test we take, tests for one. There is no feasible and affordable way for you to test for 70,000 chemicals.
- The only solution is the elimination of the discharges putting it in the water.
- Every household Reverse Osmosis system produces about 75-80% discharge.
- We will be surprised in the future. As long as man continues to progress, as long as we continue to drive economic development, as long as we continue to drive industry to provide jobs, as long as we continue to enjoy water proof material and clothes that don't break down in the sun and we continue to enjoy life in an improving atmosphere… There will continue to be new plastic, new chemicals, new contaminants that don't even exist today will exist tomorrow.

    - A few years ago, we probably thought changing these chemicals we were using to make Teflon was a good idea, now it's not such a good idea anymore. Whatever we change to and whatever process will continue to surprise us.

Director of Brunswick County Public Utilities, John Nichols

- Groundwater is a viable source (of drinking water).
- I go back to the statement from DHHS, they are not issuing a statement not to drink the water, so as long as that continues then we will be recommending people be utilizing the water.

Vice Chairman of Brunswick County Commissioners, Randy Thompson

- Our water supply is a prized resource. It affects the quality of life of each and every resident and business that calls Brunswick County home, and something we will never take lightly.
- We have and will continue to test our drinking water supply.
    - We are cautiously optimistic and will remain vigilant.

Brunswick County Health and Human Services Director, David Stanley

- You cannot make the correlation necessarily by the cancer studies made available by DHHS and GenX.
    - There would actually have to be a study for that.

Assistant Secretary for Environment with the N.C. Department of Environmental Quality, Sheila Holman

- We learned that there were some additional smaller sources of discharge.
- The data showed that the values were at or below the new health goal established by DHHS, with the exception of one site where the value was slightly over for one of our labs and slightly below for another.
- We aren't done yet, we recognize that we have a long way to go.
- We want to complete the investigation before we propose the new permit. There will be public hearings on the new permit.