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Via Email only:

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Ms. Audra Dickson
Environmental Protection Division
Georgia Department of Natural Resources
Wastewater Regulatory Program
2 MLK Jr. Drive
Suite 1152E
Atlanta, GA 30334

Re: **NPDES Permit Issuance – King America Finishing NPDES Permit No. GA0003280**

Dear Ms. Dickson:

Please accept the following comments on the draft National Pollutant Discharge Elimination System permit (“Draft Permit”) for the Milliken King America Finishing facility located in Screven County.¹ We submit these on behalf of Ogeechee Riverkeeper, which has members who rely on the surface and groundwater of the Ogeechee River Basin for drinking and recreation, as well as fish and shellfish to feed their families. We appreciate the opportunity to provide these comments.

The Ogeechee Riverkeeper (“ORK”) is dedicated to the protection, defense, and restoration of the water quality within the Ogeechee River Basin, including its rivers, streams, groundwater, and coastal marshes and estuary. The Riverkeeper works to fulfill the Clean Water Act’s goal of fishable, swimmable, and drinkable waters for the communities and recreational users within this important ecological region. Ogeechee Riverkeeper has approximately 625 members who support its work. The Riverkeeper’s Board of Directors, staff, and volunteers are committed to working with communities to achieve cleaner, healthier and more ecologically diverse waterways within the Ogeechee Watershed.

We appreciate your attention to these comments and also your decision to provide us the opportunity to review the permit before making it available for public comment. As we expressed to you at that time, we have serious reservations about the proposed revisions to this permit, which are outlined below.

¹ Although the facility is owned by Milliken, the permit is issued for the “King America Finishing” facility and we use the two names interchangeably herein.

Introduction

As set forth below, the draft Permit violates the Clean Water Act and Georgia water quality regulations because it improperly ignores one of the central purposes of the law: to protect the Ogeechee River from illegal pollution. As is well known and explained below, the King America facility has an unfortunate history with honoring its obligations to protect the River for the citizens who use this watershed. The River is a public resource, which Milliken pays nothing to discharge its waste into, and it owes the public an extra level of protection and security given the failures in the past from this facility.

Rather than strengthening or even merely maintaining the existing permit protections, the draft permit unfortunately weakens the permit in ways that are a substantial concern to the Riverkeeper and its members. For the reasons outlined below, the draft Permit must be withdrawn and significantly revised to correct these errors before it is reissued for public comment.

Background

In 2011, one of the largest fish kills in state history occurred at the King America plant in Screven County and extended for miles downstream. The King America textile plant plainly caused the fish kill, since the dead fish began just yards downstream of the facility and none were found upstream, nor were there any other possible sources of the kill. After an investigation, it was discovered the company had been operating a fire retardant line there without a permit even though a sophisticated facility such as the plant was well aware of its obligations to obtain such permits.

Finding no adequate relief coming from regulators, the Ogeechee Riverkeeper was forced to sue under the Clean Water Act, which produced a \$2.5 million settlement, a more frequent and transparent water testing protocol, and a discharge permit that the Georgia Environmental Protection Division deemed fully protective of the River. The Riverkeeper was proud to stand behind this agreement because it resulted in a strong permit that gave comfort to a skeptical public. The Riverkeeper was also proud to work with the then-owner of the facility in a collaborative way to ensure protection of the watershed.

However, subsequently, the plant was sold to Spartanburg-based Milliken & Company and renamed the Milliken Longleaf Pine Facility. This transaction has had an unfortunate effect on the ability of the public to trust that the River will continue to be protected. It is apparent that Milliken has worked successfully behind the scenes to roll back the protections from the prior permit. This is especially troubling because, in addition to the fish kill, Milliken has had continual permit violations over the past few years which have resulted in at least \$325,000 in penalties since 2014. Normally, one would expect that a facility with a history of a major fish kill and repeated fines for permit violations would be subject to vigorous enforcement actions and receive a stronger permit, not one that has been watered down.

For example, monitoring frequency for a number of parameters has been reduced. Monitoring is the only tool available to inform EPD and the public of the real-world situation at

the plant. The added marginal cost of this monitoring is minimal in the context of this plant, but the added benefit in information is not minimal; it is essential to allow the public and EPD to understand what is going on at the plant and, potentially, avoid a repeat of the fish kill or a similar event before it occurs.

As explained below, the Riverkeeper has specific concerns that relate to the rollbacks (backsliding) in the permit as well as other provisions that fail to ensure compliance with the applicable water quality laws.

Specific Comments

1. The draft permit does not adequately address toxicity concerns with the facility's discharge.

As you know, the toxicity of the effluent has been the Riverkeeper's primary concern since the fish kill, which was itself the result of a toxic discharge event. Since the last permit iteration, both the company and Riverkeeper have conducted toxicity sampling and both the company's and the Riverkeeper's sampling results have identified toxicity as an ongoing concern. Although a significant number of chronic toxicity tests have been either at the permit limit or have violated the limit, the draft permit has maintained the monitoring frequency for whole effluent testing established in the prior permit. Further, many of the testing frequency reductions have been justified because of ongoing aquatic toxicity testing; however, the permit does not increase this toxicity testing to ensure compliance. We believe that the frequency of the toxicity sampling must be increased as further explained below.

Given the high variability exhibited in the chronic tests and the number of periodic violations, we believe chronic toxicity testing must occur weekly. We agree and support the change to the permit that requires that if two test results violate the limit of $\geq 8\%$ effluent or are acutely toxic ($LC_{50} < 100\%$), a toxicity identification and reduction evaluation (TI/RE) be implemented in accordance with federal Environmental Protection Agency ("EPA") guidance. The initiation of a TI/RE should require the development of a compliance schedule. This schedule should establish milestones to identify the toxicants, develop and identify alternatives to remove the toxicants, and bring the facility back into compliance with the permit limit.

This request to increase chronic toxicity testing for the water flea, *Ceriodaphnia dubia*, to weekly is based on the following:

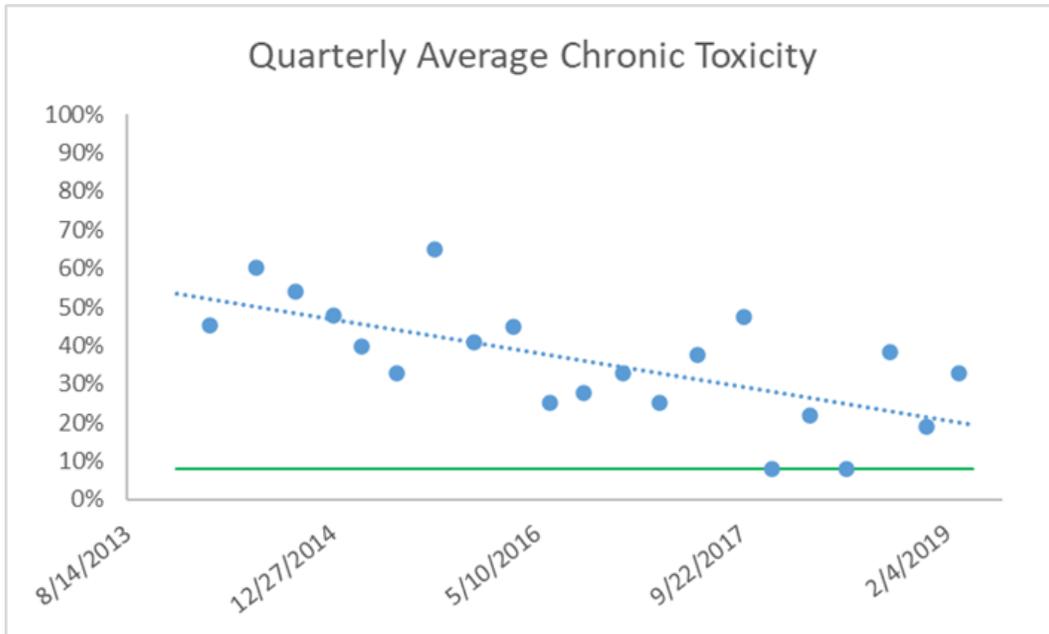
- the effluent has been observed to be chronically toxic and has become more toxic over time,
- the effluent exhibits substantial variability (coefficient of variation of 60%),
- the discharge has experienced long periods of time where the discharge NOEC (No Observed Effect Concentration) was at the limit of 8% effluent, and
- for tests in which inhibition concentration (IC25) data are available, the tests predict effects on reproduction at or near the instream waste concentration.

In the review of the May 2018 test report, it was noted that reproduction levels in both the 6.25% and 25% exposure concentrations were significantly different than the control while the 8% concentration was not significantly different. The report states that the NOEC is 8% for this test period. This scenario would be classified as a non-significant effect bracketed by significant effects (response 6 in the USEPA guidance (2002)). As such, the test would be considered valid and the NOEC should be reported as the concentration below the LOEC of 6.25%. Thus, the NOEC should have been reported as <6.25% effluent, not 8% as reported.

The available data illustrate the following:

- Since 12/12/2013 (and including the May 2018 report), there have been 4 permit limit violations of the chronic toxicity limitation (1 each in 2013 and 2014 and 2 in 2018).
- There is a high degree of variability in the data. Effluent NOEC values range from a low of 5% effluent (collected in December 2018) to a high of 84%. The calculated average of the NOEC values is 40% and the data exhibit a coefficient of variation of 60%.
- Between November 2017 and June 2018 (8 tests), the NOEC value was reported as 8% effluent for 7 of the tests.
- For the available data (94 tests plus 1 duplicate), there were 20 tests with results reported as NOEC of 8% or less. Note, for the duplicate test, that both tests indicated that the NOEC was below 8% effluent.

As noted above, there is extensive variability in the reported NOEC values. To determine if there are any data trends, the quarterly average NOEC value was calculated for the available dataset. Again, the lack of an IC25 value limits data interpretation; however, assuming that the test concentration series has not changed, **the data indicate that the effluent has become more toxic over time.**



During the period from November 2017 to June 2018 in which the NOEC was consistently reported at 8% (with the exception of January 2018), variability equivalent to that observed for the period of record would be expected; thus, it is likely that actual toxicity varied around 8% effluent – both above and below. This variability was not captured by the monthly data. Thus, we believe that **chronic aquatic toxicity testing should be increased to weekly** to understand the impact of the discharge on the Ogeechee River. Further, the fact that the endangered native Robust Redhorse fish has failed to establish a population downstream of the facilities effluent after restocking indicates that conditions are not ideal. Finally, in addition to reporting the NOEC, the permittee should also be required to report the chronic IC25 so that a better understanding of the effluent variability can be obtained and the potential for instream impact can be assessed. In summary, therefore, we support: weekly testing to ensure compliance given reduced chemical monitoring; NOEC reporting (because this is the state standard); and IC25 reporting because this is a superior metric.

We understand that the permittee will resist this increased testing and argue that other facilities in the state are not subject to similar testing requirements. But this facility is very different from other industrial dischargers in the state. The historical data and the history of the largest fish kill in the state justify whatever marginal additional cost this entails because of the importance of this issue.

2. The draft permit fails to place limits or monitoring requirements for PFOS/PFAS in violation of state and federal law.

As explained below, effluent and fish tissue sampling has established the presence of PFOS, PFAS and related compounds in the Milliken discharge even though no such pollutants were disclosed in the permit application. The permit must provide appropriate limits and monitoring to deal with this pollution, and the permittee must be required to re-apply for this permit in order to identify its levels of discharge of such pollutants.

A. EPD should require Milliken to disclose PFOS/PFAS in an amended application.

The discharge of a specific pollutant (or group of pollutants) cannot be permitted if it is not disclosed in a NPDES permit application. The Clean Water Act generally prohibits pollutant discharges to streams and rivers. The NPDES permitting program is a limited exception to that prohibition, and discharges under the program cannot be approved unless they are adequately disclosed. The Environmental Protection Agency has stressed the need for disclosure of pollutants during the permitting process:

[D]ischargers have a duty to be aware of any significant pollutant levels in their discharge. [...] Most important, [the disclosure requirements] provide the information which the permit writers need to determine what pollutants are likely to be discharged in significant amounts and to set appropriate permit limits. [...] [P]ermit writers need to

know what pollutants are present in an effluent to determine approval permit limits in the absence of applicable effluent guidelines.²

The EPA Environmental Appeals Board's decision in *In re: Ketchikan Pulp Company*³ further emphasized the importance of disclosure. In *Piney Run Pres. Ass'n v. Cty. Comm'rs of Carroll Cty., Maryland*, the court followed *Ketchikan* and stated:

The *Ketchikan* decision therefore made clear that a permit holder is in compliance with the [Clean Water Act] even if it discharges pollutants that are not listed in its permit, as long as it only discharges pollutants that have been adequately disclosed to the permitting authority. [...] **To the extent that a permit holder discharges a pollutant that it did not disclose, it violates the NPDES permit and the [Clean Water Act].**⁴

Milliken failed to disclose PFAS in its permit application, in violation of the Clean Water Act. Sampling discussed below establishes that the facility is discharging PFAS. The failure to disclose the presence of PFAS should result in EPD remanding the permit to Milliken to disclose fully such PFAS discharges.

B. Once properly disclosed, EPD should develop appropriate monitoring and permit limits for PFOS/PFAS.

For all pollutants, the Clean Water Act requires permitting agencies to impose technology-based effluent limitations.⁵ If these limits are not enough to ensure compliance with water quality standards, then water quality-based effluent limits must be included. EPD has apparently not evaluated any limits on PFAS, which is understandable since the permittee did not disclose them. But EPD should insist on such disclosure and develop permit terms accordingly.

Technology-based effluent limits are “the minimum level of control that *must be imposed* in a permit.”⁶ These limits “are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations.”⁷ As EPA has recognized, “technology-based limits aim to prevent pollution by requiring polluters to install and implement various forms of technology designed to reduce the pollution discharged into the nation’s waters.”⁸ When EPA has not issued a national

² Consolidated Permit Application Forms for EPA Programs, 45 Fed. Reg. 33,526-31 (May 19, 1980).

³ *In re Ketchikan Pulp Co.*, 7 E.A.D. 605 (EPA) (1998).

⁴ 268 F.3d. at 268 (emphasis added).

⁵ 40 C.F.R. § 125.3(a); *see also* 33 U.S.C. § 1311.

⁶ 40 C.F.R. § 125.3(a) (emphasis added).

⁷ U.S. EPA, NPDES Permit Writers' Manual, 5-1 (2010), included as Attachment 1. (All attachments can be found using this link: <https://southernenvironment.sharefile.com/d-s80b01720bb3e49d58527af640b0a1653>.)

⁸ U.S. EPA, Technical Analysis for Determination of Technology-Based Permit Limits for the Guaynabo Drinking Water Treatment Facility NPDES Number PR0022438, 2-1 (Mar. 2009) (“Guaynabo TBEL Analysis”), included as Attachment 2.

effluent limitation guideline for a particular industry, permitting agencies must implement technology-based effluent limits on a case-by-case basis using their “best professional judgment.”⁹

There are available technologies used to reduce the discharge of PFOAs from industrial wastewater. Although it is beyond the expertise of the Riverkeeper to design wastewater treatment systems, it has been widely reported that effective technologies include activated carbon treatment, ion exchange resins, and high pressure membranes, like nanofiltration or reverse osmosis.

In addition to analyzing technology-based effluent limits, EPD must ensure that Georgia water quality standards will not be violated by the discharge. If there is a “reasonable potential” that water quality standards will be exceeded, EPD must include water quality-based effluent limits in the permit as well. Georgia water quality standards provide: “All waters shall be free from toxic, corrosive, acidic and caustic substances discharged from municipalities, industries or other sources, such as nonpoint sources, in amounts, concentrations or combinations which are harmful to humans, animals or aquatic life.” Ga. Comp. R. & Regs. 391-3-6-.03(5)(e).

PFAS are known to harm human health, and they certainly qualify as toxic substances under state law. Two of the most commonly studied PFAS, perfluorooctanoic acid (“PFOA”) and perfluorooctane sulfonate (“PFOS”), have been found to cause developmental effects to fetuses and infants, kidney and testicular cancer, liver malfunction, hypothyroidism, high cholesterol, ulcerative colitis, lower birth weight and size, obesity, decreased immune response to vaccines, reduced hormone levels and delayed puberty.¹⁰

EPA established a lifetime health advisory of 70 ppt for the combined concentrations of PFOA and PFOS in drinking water.¹¹ Since then, in June 2018, the Agency for Toxic Substances and Disease Registry released an updated Draft Toxicological Profile for PFOA, PFOS, and other PFAS. The report suggested that many of the chemicals are much more harmful than previously thought. For instance, the minimum risk levels, or the amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health, was determined to be only 11 ppt for PFOA, and 7 ppt for PFOS.¹² Epidemiological studies show that many of these same health outcomes result from exposure to other PFAS. Given these harms, states like Michigan, New York, New Hampshire, New Jersey, and Vermont have acknowledged the dangers of these compounds and have either proposed or finalized drinking water standards for various PFAS at 20 ppt and lower.

⁹ 40 C.F.R. § 125.3; *see also* 33 U.S.C. § 1342(a)(1)(B)

¹⁰ Arlene Blum et al., *The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)*, 123 ENVTL. HEALTH PERSPECTIVES 5, A 107 (2015), included as Attachment 3; U.S. EPA, *Fact Sheet: PFOA & PFOS Drinking Water Health Advisories*, 2, included as Attachment 4.

¹¹ EPA, *Fact Sheet: PFOA & PFOS Drinking Water Health Advisories at 2*.

¹² Draft 2018 Toxicological Profile for Perfluoroalkyls at 5-6, 25-26, included as Attachment 5.

PFAS are also harmful to the environment. They have been shown to cause harmful effects in fish,¹³ amphibians,¹⁴ mollusks,¹⁵ and other aquatic invertebrates¹⁶—resulting in developmental and reproductive impacts, behavioral changes, adverse effects to livers, disruption to endocrine systems, and weakened immune systems. Moreover, they are extremely resistant to breaking down in the environment, can travel long distances, and bio-accumulate in organisms.¹⁷

EPD must ensure that residents who fish, boat, and swim downstream of the discharge are protected. Many people fish for sustenance and recreate downstream of Milliken’s discharge location. Emerging research is showing that PFAS—even at low levels—are harmful. In addition, one of the key characteristics of the class is that they bio-accumulate in many fish species. We have evidence, discussed below, that downstream fish are being contaminated with PFAS from the facility and thus are being caught and eaten by Georgia citizens.

¹³ Huang, et al., *Toxicity, uptake kinetics and behavior assessment in zebrafish embryos following exposure to perfluorooctanesulphonic acid (PFOS)*, 98 AQUATIC TOXICOLOGY 139–147 (2010); Jantzen, et al., *PFOS, PFNA, and PFOA sub-lethal exposure to embryonic zebrafish have different toxicity profiles in terms of morphometrics, behavior and gene expression*, 175 AQUATIC TOXICOLOGY 160–170 (2016); Hagenars, et al., *Structure–activity relationship assessment of four perfluorinated chemicals using a prolonged zebrafish early life stage test*, 82 CHEMOSPHERE 764–772 (2011); Du, et al., *Chronic effects of water-borne PFOS exposure on growth, survival and hepatotoxicity in zebrafish: A partial life-cycle test*, 74 CHEMOSPHERE 723–729 (2009); Rotondo, et al., *Environmental doses of perfluorooctanoic acid change the expression of genes in target tissues of common carp*, 37 ENVIRON. TOXICOLOGY & CHEM. 942–948 (2018); Liu, et al., *The thyroid-disrupting effects of long-term perfluorononanoate exposure on zebrafish (Danio rerio)*, 20 ECOTOXICOLOGY 47–55 (2011); Chen, et al., *Multigenerational Disruption of the Thyroid Endocrine System in Marine Medaka after a Life-Cycle Exposure to Perfluorobutanesulfonate*, 52 ENVIRON. SCI. & TECH. 4432–4439 (2018); Chen, et al., *Perfluorobutanesulfonate Exposure Causes Durable and Transgenerational Dysbiosis of Gut Microbiota in Marine Medaka*, 5 ENVIRON. SCI. & TECH. LETTERS 731–738 (2018); Chen, et al., *Accumulation of perfluorobutane sulfonate (PFBS) and impairment of visual function in the eyes of marine medaka after a life-cycle exposure*, 201 AQUATIC TOXICOLOGY 1–10 (2018), included as Attachments 6, 7, 8, 9, 10, 11, 12, 13, and 14 respectively.

¹⁴ Ankley, et al., *Partial Life-Cycle Toxicity And Bioconcentration Modeling of Perfluorooctanesulfonate in the Northern Leopard Frog (Rana Pipiens)*, 23 ENVIRON. TOXICOLOGY & CHEM. 2745 (2004); Cheng, et al., *Thyroid disruption effects of environmental level perfluorooctane sulfonates (PFOS) in Xenopus laevis*, 20 ECOTOXICOLOGY 2069–2078 (2011); Lou, et al., *Effects of perfluorooctanesulfonate and perfluorobutanesulfonate on the growth and sexual development of Xenopus laevis*, 22 ECOTOXICOLOGY 1133–1144 (2013), included as Attachments 15, 16, and 17 respectively.

¹⁵ Liu, et al., *Oxidative toxicity of perfluorinated chemicals in green mussel and bioaccumulation factor dependent quantitative structure-activity relationship*, 33 ENVIRON. TOXICOLOGY & CHEM. 2323–2332 (2014), included as Attachment 18.

¹⁶ Ji, et al., *Oxicity of Perfluorooctane Sulfonic Acid and Perfluorooctanoic Acid on Freshwater Macroinvertebrates (Daphnia Magna and Moina Macrocopa) and Fish (Oryzias Latipes)*, 27 ENVIRON. TOXICOLOGY & CHEM. 2159, included as Attachment 19.

¹⁷ EPA, *Technical Fact Sheet - Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)*, 1, 3 (Nov. 2017), included as Attachment 20.

As part of the ORK and Milliken sampling event in December 2018, two separate effluent samples were analyzed by 2 independent laboratories for 21 perfluoroalkyl substances (PFAS) including PFOS and PFOA using EPA Method 537 (Modified). This sampling indicated that 11 of 23 PFAS analytes were present at concentrations above the reporting limit. Further, these data indicated that the sum of PFOS and PFOA concentrations were between 203 and 227 ng/L (ppt). Although the effluent and the Ogeechee River are not drinking water sources, these concentrations greatly exceed EPA's established human health advisory level of 70 parts per trillion (ppt) for PFOS and PFOA combined in drinking water and indicate a continuous source of PFASs to the Ogeechee River which is utilized by residents for fish consumption. No plausible source of these pollutants other than this textile mill exists. The documented presence of these pollutants requires that EPD remand the permit to the permittee for full disclosure of its discharge of these chemicals.

In addition to effluent sampling, ORK has conducted, and is in the process of collecting, fish tissues representative of the type and size of fish typically consumed from the Ogeechee River and analyzing these representative fish species for PFOA and PFOS.

Fish were collected from the Ogeechee River between the Interstate 16 and Highway 80 bridges. This is approximately 38 miles downstream of the Milliken discharge. A total of 7 fish were collected and PFOS was detected in all 7 fish. The fish were filleted and submitted to an analytical laboratory for analysis for PFOS and PFOA. Results are shown below:

Species	PFOS tissue concentration (µg/kg)	PFOA tissue concentration (µg/kg)
Largemouth Bass	9.2	<0.88
Largemouth Bass	5.6	<0.94
Largemouth Bass	15	<0.97
Bluegill Sunfish	31	<0.93
Redbreast Sunfish	11	<0.93
Redbreast Sunfish	12	<0.78
Redbreast Sunfish	11	<0.72

Five of the 7 fish contained PFOS at concentrations in excess of 10 µg/kg.¹⁸ Based on the Consortium Best Practices guidelines, PFOS tissue concentrations in a majority of the samples would result in a fish consumption advisory for this section of the Ogeechee River of 2 meals per week to be protective of human health.

Using EPA's 2016 Drinking Water Health Advisory reference dose (RfD) of 2×10^{-5} milligrams per kilogram per day, a fish consumption limit can be developed. Specifically, the Great Lakes Consortium for Fish Consumption Advisories developed the Best Practice for

¹⁸ The fish tissue sampling data has been previously produced to you and is attached to this letter as Attachment 21.

Perfluorooctane Sulfonate (PFOS) Guidelines¹⁹ which contains recommendations for consumption of fish containing PFOS based on EPA’s RfD. The guidelines assessed a meal size of 227 grams (1/2 pound) of raw fish per meal for a 70 kg adult. Recommendations from this Consortium are as follows:

PFOS in Fish (µg/kg)	Meal Frequency
≤ 10	Unrestricted
> 10-20	2 meals/week
> 20-50	1 meal/week
> 50-200	1 meal/month
> 200	DO NOT EAT

This data calls for further action. Admittedly, this data is limited and more information is needed. It should not be the Riverkeeper’s job to collect this data. Rather, the State should require the company to collect this data and submit it to EPD as part of a proper disclosure of its PFAS-related discharges. Thus, the permit should be withdrawn and the company should be required to make a proper disclosure of its PFAS-related discharges and the results of a properly designed fish tissue sampling protocol at which point, if appropriate, TBELs, WQBELs, and appropriate monitoring conditions should be imposed.

3. The permit illegally weakens protections contained in the previous permit (“backsliding”).

Section 402(o) of the CWA prohibits backsliding, or the reissuance of a permit with “effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.” 33 U.S.C. § 1342(o)(1). The draft permit reduces and/or eliminates certain permit limits and also reduces and/or eliminates monitoring frequency for a number of parameters of concern. We oppose any such backsliding in the permit.

In 2013, EPD issued the current permit which set out certain limits and conditions. These permit conditions were imposed to ensure that the facility met the CWA and did not violate any applicable state water quality laws. Presumably, EPD believed these permit terms and conditions were necessary and appropriate to protect water quality in the Ogeechee River. The draft permit, however, contains lower effluent limitations for a number of parameters of concern including fecal coliform, formaldehyde, total suspended solids (TSS), color, total phenols,²⁰ and total chromium. It also weakens monitoring requirements for chemical oxygen demand (COD),

¹⁹ Great Lakes Consortium for Fish Consumption Advisories, November 2019. Best Practice for Perfluorooctane Sulfonate (PFOS) Guidelines, included as Attachment 22.

²⁰ With regard to phenols, the draft permit adheres to a 3-tier system based on production at the Milliken plant. Production tiers 2 and 3 allow for higher daily averages of total phenol discharge than did the 2013 permit, at 5.6 lb/day and 6.4 lb/day, respectively, and are therefore weakened to that extent.

TSS, total phenols, total chromium, total Kjeldahl Nitrogen, total Nitrogen, color, sodium, peroxide, total mercury, and sulfide.

Riverkeeper opposes all such instances of backsliding and requests that EPD maintain or strengthen the permit terms and conditions as they existed in the previous permit. We particularly believe that the permit should not be weakened given that the permittee has failed to meet the terms of the current permit as evidenced by the numerous permit exceedances it has reported.

4. The permit inadequately protects the Ogeechee River from fecal coliform pollution.

With specific regard to fecal coliform, as noted above, the draft permit weakens the protections from the prior permit. The 2013 Milliken permit included a concentration-based discharge limitation for fecal coliform, which allowed a daily maximum discharge of 200 colonies per 100 milliliters (200 cfu/100mL) and a 400 cfu/100mL daily maximum. EPD's new proposed permit allows an increase of this discharge, permitting for the months of May through October a daily average of 500 cfu/100mL and a daily maximum of 500 cfu/100mL. During the months between November and April, the permit allows a daily average of 1,000 cfu/100mL and a daily maximum of 4,000 #/100mL. We object to this change in permit terms based upon the anti-backsliding law cited above.

Additionally, for water bodies where contact recreation activities are anticipated to occur, the Georgia water quality standard provides that fecal coliform are not to exceed a geometric mean of 200 cfu/100mL. If it can be demonstrated that fecal coliform levels from non-human sources exceed 200 cfu/100mL *occasionally* (emphasis added), then the allowable geometric mean for fecal coliform shall not exceed 500 cfu/100mL in free-flowing streams during the summer recreational months (May to October). In July of 2017, Milliken conducted a Quantitative Polymerase Chain Reaction (qPCR) DNA test to determine the amount of human-based fecal coliform present in the sample. The result of this single test was that no human-based fecal coliform was detected. The amount of human-derived fecal coliform in all other samples is unknown. One test should not be the basis for this weakening of the permit. To demonstrate compliance with this regulation, the permit should be modified to include additional qPCR testing a minimum of monthly to demonstrate that the discharge continues to contain no human-based fecal coliform counts.

Based on the permit application data, it further appears that the summer standard of 500 cfu/100mL will also be consistently (not occasionally) exceeded. Thus, EPD should establish a compliance schedule requiring Milliken to identify and implement alternatives to achieve the Georgia water quality standard of 500 cfu/100 mL as daily maximum and daily average limitations. Without a compliance schedule, the discharge is likely to continue to exceed the established permit limitation without any clear date when the facility will be compliant with the permit.

5. The instream monitoring locations are inadequate to provide the information sought and need to be adjusted.

ORK requests that downstream samples be collected in a manner that ensures samples are collected within the discharge plume, are representative of downstream conditions, and allow the calculation of percent effluent in the sample. Currently, the draft permit requires only measurement of conductivity and collection of a sample at any location within 25 feet of the discharge pipe. The data will be utilized by EPD to determine if the downstream sampling is representative of sampling within the effluent plume. While we agree with the objective of the requirement, ORK believes that the requirement is too vague. Specifically, the language only requires Milliken to monitor the conductivity of the sample but does not require Milliken to locate the effluent plume and then sample directly from the plume. Given that there is over an order of magnitude difference in receiving water and Milliken effluent conductivity, location and identification of the plume based on conductivity alone is possible.

Part I A.4 of the permit requires the permittee to collect a sample 25 feet downstream of the outfall pipe for aquatic toxicity testing. Depending on stream flow conditions, this results in a highly variable sample. We understand that this sampling location was selected to monitor actual instream conditions associated with the effluent discharge. However, based on a limited review of sampling data, the collection of a sample which contains a representative concentration of the effluent is often a hit or miss proposition. For example, the May 2018 receiving water toxicity test was conducted with a downstream sample which contained essentially no effluent. The Ogeechee River flow for this sample period was less than the harmonic mean flow for which Milliken modeled expected effluent concentrations downstream of the discharge. Data for this test are presented below:

Sample Day	Conductivity (µmhos/cm)			River Flow (cfs)	Predicted Dilution at 25' Downstream for Harmonic Mean Flow (335 cfs)	Predicted Downstream Conductivity (µmhos/cm)
	Upstream	Discharge	Downstream			
5/15/2018	104	4040	103	212	19.8	303
5/17/2018	112	2830	109	249	19.8	249
5/18/2018	119	3890	99	410	19.8	309

This data indicate that none of the downstream samples contained effluent from the Milliken discharge. Specifically, the samples collected 25 feet downstream of the outfall were more representative of upstream conditions than downstream. Further, based on modeling conducted by Milliken, samples collected within the discharge plume 25 feet downstream of the discharge should have had conductivity of between 249 and 309 µmhos/cm under harmonic mean flow conditions. In contrast, the downstream samples used for testing contained only one-

third of the conductivity and were representative of upstream conditions, not downstream discharge conditions.

To remedy this situation, we recommend the following improvements in sampling methodology:

- Prior to collecting the downstream sample, the sampler shall conduct a conductivity survey of the cross-section of the receiving stream at a point 25 feet downstream of the outfall. The objective of the survey is to identify the location of the effluent plume. The survey shall be conducted from top to bottom and from bank to bank at representative intervals across the stream.
- Once the location of the plume has been identified, the sampler shall collect a vertically proportional sample; specifically, the sample shall be collected representative of the bottom third, middle third and top third of the receiving stream within the discharge plume.
- Based on upstream and effluent conductivity values, the percent effluent in the sample shall be calculated.

6. The TBEL-based mass limits should be modified.

The permit establishes three tiers of TBEL mass-based limits which are related to production. However, it is unclear how those limitations are to be applied. This will result in confusion regarding the status of compliance at the facility. The permit requires that the average daily production (in terms of pounds of product/day) be reported each month and could result in the limits changing on a monthly basis as production changes. For daily average discharge limitations, this approach is straightforward. Once the average daily production is known for the month, the average discharge load is calculated and compared to the daily average limitation for the appropriate tier. However, this approach is problematic for the daily maximum limitation. Since production may change from day to day, compliance with the daily maximum limitation should be based on the limitation established for the tier based on production for that day, not the tier based on the average daily production value which may allow a higher discharge load. This will make it challenging to determine if the facility is in or out of compliance. The permit should be modified to define how the limit changes and provide a justification for using average daily production values to establish daily maximum limitations.

7. The permit should include limits for cyanide.

The Draft permit does not include limitations for cyanide and uses the highest reported cyanide concentration (18 µg/L) as a basis for a reasonable potential analysis. However, during a joint sampling event between ORK and Milliken, cyanide was detected at 120 µg/L. Using the reasonable potential approach detailed in Ga. Comp. R. & Regs. 391-3-6.-06(4)(d)5(ii), the permittee is required to monitor for cyanide for a period of 10 months. Specifically, there are less than 10 data points (only 1 result of 18 µg/L for cyanide was reported in the permit application). The resulting instream concentration of 5.83 µg/L (based on the 120 µg/L result) is greater than half of the chronic cyanide criterion of 5.2 µg/L. Thus, additional monitoring is required. If additional data has been generated, the data should be made public and the Fact

Sheet for the permit should be updated describing the results of a reasonable potential analysis for cyanide in the discharge.

8. The permit improperly uses the whole river as an unofficial mixing zone.

The reasonable potential analysis for various parameters assumes rapid and complete dilution with the entire river flow to determine instream concentrations. This presumes a mixing zone of unspecified and unlimited size, without designating or physically defining a mixing zone. Clearly, based on the downstream monitoring that has been conducted, the mixing is neither rapid nor complete. Had complete mixing been rapidly achieved, conductivity measurements for the May 2018 sampling event discussed above would have ranged between 158 and 182 $\mu\text{mhos/cm}$ not 99 – 109 as reported by Milliken. Further, assuming complete mixing and providing the entire river flow for dilution, when this is not the case, allows for areas where water quality criteria are exceeded. Without delineation of the size of the mixing zone, the impact of the discharge on the receiving stream is unknown. Georgia regulations allow for properly identified and circumscribed mixing zones, but only with limitations and restrictions that have not been met or addressed.

Conclusion

In sum, Ogeechee Riverkeeper requests that EPD withdraw the draft permit, require proper disclosure of all pollutants, and then significantly revise the permit to address our concerns discussed above.

We appreciate your attention to this matter and are available to discuss this with you.

Sincerely,



Hutton Brown

Cc: Damon Mullis