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July 24, 2020

VIA E-MAIL

Ms. Brianna Young
N.C. Division of Water Resources
1617 Mail Service Center, Raleigh, N.C. 27699
publiccomments@ncdenr.gov

**Re: Southern Environmental Law Center Comments on T.Z. Osborne WWTP
Special Order by Consent**

Dear Ms. Young:

The Southern Environmental Law Center offers the following comments on the draft Special Order by Consent (“agreement”) proposed by the City of Greensboro (“Greensboro” or “the City”) and the North Carolina Department of Environmental Quality (“DEQ”) for wastewater discharges from the City’s T.Z. Osborne Wastewater Treatment Plant. These comments are submitted on behalf of Haw River Assembly, Cape Fear River Watch, North Carolina Conservation Network, Center for Environmental Health, North Carolina Coastal Federation, and the North Carolina Chapter of the Sierra Club.

Greensboro’s T.Z. Osborne Wastewater Treatment Plant (“T.Z. Osborne” or “treatment plant”) treats wastewater from industrial facilities in Greensboro and parts of Guilford County, North Carolina. Some of these industries use or produce 1,4-dioxane in their processes and send wastewater containing the chemical to T.Z. Osborne. Because the City’s treatment plant has not been removing 1,4-dioxane as part of its wastewater treatment process, it discharges the chemical into the Cape Fear River Basin. And because drinking water utilities cannot remove 1,4-dioxane with conventional treatment, downstream communities are forced to drink water contaminated by Greensboro’s pollution.

Since at least 2015, Greensboro and DEQ have known that the City has been contaminating downstream drinking water supplies with 1,4-dioxane pollution. Yet the discharges continue at concentrations that threaten human health. Under the agreement, DEQ would allow Greensboro to continue to taint the drinking water of downstream communities for years to come.

Instead, DEQ must use its authority under the Clean Water Act to impose strict limits in the City’s National Pollutant Discharge Elimination System (“NPDES”) permit for 1,4-dioxane. As required by the Clean Water Act, Greensboro would in turn properly regulate its industries and stop them from releasing 1,4-dioxane into the City’s treatment system. Only then can Greensboro and DEQ protect the health and safety of those downstream.

I. The public cannot wait for Greensboro to stop its toxic discharges of 1,4-dioxane.

Greensboro's discharges of 1,4-dioxane have been going on for years, if not decades. The public should not have to wait any longer for meaningful action. Voluntary actions taken by industry are not sufficient when, as a result, downstream communities must involuntarily drink contaminated water.

A. 1,4-dioxane is toxic.

1,4-dioxane is a man-made chemical that is a byproduct of many industrial processes.¹ The chemical is toxic to humans,² causing liver and kidney damage.³ EPA itself classifies it as "likely to be carcinogenic,"⁴ and California lists it as known to cause cancer.⁵ Not only is 1,4-dioxane toxic, but it does not degrade and moves quickly through the environment.⁶ Because of the harms 1,4-dioxane causes, EPA established a drinking water health advisory with an associated estimated lifetime cancer risk of one in a million at a concentration of 0.35 micrograms per liter ("µg/L").⁷ The health advisory is set at the level at which there would be no more than one case of cancer per one million people exposed ("one-in-a-million cancer level"). DEQ has similarly established a human health criterion of 0.35 µg/L for 1,4-dioxane in water supplies.⁸

B. Greensboro and DEQ have known about Greensboro's 1,4-dioxane pollution since at least 2015.

Greensboro and DEQ have known about the City's pollution for years. Data collected under EPA's Unregulated Contaminant Monitoring Rule 3 from 2013 to 2015 showed that North Carolina's Cape Fear River Basin had some of the highest levels of 1,4-dioxane in drinking water in the country, including downstream of Greensboro.⁹ Researchers at N.C. State University also alerted DEQ to 1,4-dioxane pollution in the Haw River downstream of Greensboro.¹⁰ Around that time, DEQ's own sampling further revealed "hot spots" of the

¹ *Technical Fact Sheet – 1,4-Dioxane*, EPA 1-2 (2017), https://www.epa.gov/sites/production/files/2014-03/documents/ffiro_factsheet_contaminant_14-dioxane_january2014_final.pdf ("EPA, *Technical Fact Sheet – 1,4-Dioxane*"); Detlef Knappe, *1,4-Dioxane Occurrence in the Haw River and in Pittsboro Drinking Water*, N.C. STATE UNIV. (Sept. 23, 2019) ("Knappe 2019 Presentation").

² EPA, *Technical Fact Sheet – 1,4-Dioxane*, *supra* note 1, at 1.

³ *Id.*; EPA, *Integrated Risk Information System, Chemical Assessment Summary: 1,4,-dioxane* at 2, https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0326_summary.pdf (last visited on July 10, 2020).

⁴ EPA, *Technical Fact Sheet – 1,4-Dioxane*, *supra* note 1, at 1.

⁵ *1,4-Dioxane*, CAL. WATER BOARDS (June 26, 2019),

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/14-Dioxane.html.

⁶ EPA, *Technical Fact Sheet – 1,4-Dioxane*, *supra* note 1, at 1-2.

⁷ *2018 Edition of the Drinking Water Standards and Health Advisories*, EPA OFFICE OF WATER 4 (2018), <https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>.

⁸ *NC_Stdstable_09222017*, N.C. DEPT. ENVTL. QUALITY (2017), <https://deq.nc.gov/nc-stdstable-09222017>.

⁹ *Occurrence Data for the Unregulated Contaminant Monitoring Rule*, EPA, <https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule> (last visited July 10, 2020).

¹⁰ Rebecca Sadosky, *NC 1,4-Dioxane Study: A SDWA/CWA Collaboration*, N.C. DEPT. ENVTL. QUALITY 12 (June 5, 2018) ("Sadosky Presentation").

chemical downstream of the City.¹¹ DEQ’s stream monitoring data, collected from 2014 through 2016, found concentrations as high as 543 µg/L downstream of Greensboro’s treatment plant—far higher than the average concentration of 1.8 µg/L measured immediately upstream of the plant.¹²

As a result of the data, Greensboro was identified as a major source of 1,4-dioxane contamination. The City in turn began investigating the cause of its pollution in 2015, including the industries that were releasing the chemical into Greensboro’s sewer system.¹³

Starting in December 2017, DEQ also required Greensboro to monitor T. Z. Osborne’s effluent for 1,4-dioxane.¹⁴ The results of these monitoring activities regularly showed the presence of the chemical at concentrations many times higher than its one-in-a-million cancer level.¹⁵

C. Despite five years of study, the contamination continues.

The years of voluntary collaboration between DEQ and Greensboro to reduce 1,4-dioxane in the City’s treatment plant has not removed the threat of the chemical. As recently as August 2019, Greensboro’s wastewater discharges into the Cape Fear River Basin contained 1,4-dioxane levels of 957.5 µg/L.¹⁶ This caused a severe increase of 1,4-dioxane in Pittsboro’s finished drinking water to concentrations of 114 µg/L—325 times higher than EPA’s health advisory.¹⁷ No one told the people in Pittsboro about the contamination at the time. By the time Greensboro reported the discharge to DEQ on September 27, 2019,¹⁸ the polluted water had passed through Pittsboro’s drinking water system and into people’s homes. DEQ acknowledged the threat that Greensboro’s discharges posed to human health by issuing a notice of violation, stating that the City violated state rules requiring that waste “shall not render the waters injurious to public health”¹⁹

¹¹ *1,4-Dioxane and Bromide Monitoring Plan*, N.C. DEPT. ENVTL. QUALITY 1 (Mar. 28, 2017), <https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/Dioxane/BromideDioxaneSamplingPlan20170328.pdf>.

¹² Sadosky Presentation, *supra* note 10, at 25; *1,4-Dioxane Monitoring in the Cape Fear River Basin of North Carolina*, NC DEPT. ENVTL. QUALITY 11 (Feb. 22, 2017), <https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/Dioxane/DioxaneYear2ReportWithMemo20170222.pdf>.

¹³ N.C. Dept. of Env’tl. Qual., Draft Special Order by Consent at 2 (“SOC”), included as Attachment 1.

¹⁴ *Id.*

¹⁵ See May 2018 T.Z. Osborne Discharge Monitoring Report – Permit No. NC0047384 (“May 2018 DMR”) (reporting a monthly average concentration of 331.833 µg/L); August 2018 T.Z. Osborne Discharge Monitoring Report – Permit No. NC0047384 (“August 2018 DMR”) (reporting a monthly average concentration of 408 µg/L); March 2019 T.Z. Osborne Discharge Monitoring Report – Permit No. NC0047384 (“March 2019 DMR”) (reporting a monthly average concentration of 24.2 µg/L). These reports are included as Attachment 2.

¹⁶ N.C. Dept. of Env’tl. Quality, Notice of Violation & Intent to Assess Civil Penalties, NOV-2019-PC-0728 (Nov. 6, 2019) (“NOV”), included as Attachment 3.

¹⁷ Knappe 2019 Presentation, *supra* note 1; HAW RIVER ASSEMBLY, *How Safe is Pittsboro’s Drinking Water?*, <http://hawriver.org/wp-content/uploads/2018/10/How-Safe-is-Your-Drinking-Water.pdf> (last visited July 10, 2020).

¹⁸ Press Release, N.C. Dept. of Env’tl. Quality, *DEQ Investigating 1,4 Dioxane Release* (Oct. 15, 2019), <https://deq.nc.gov/news/press-releases/2019/10/15/deq-investigating-14-dioxane-release> (last visited July 20, 2020).

¹⁹ NOV, *supra* note 16, at 1 (stating that the City violated North Carolina regulation 15A N.C. Admin. Code 02B .0211(12)).

Further downstream, Fayetteville and Wilmington have also had 1,4-dioxane in their drinking water.²⁰ Frustrated by DEQ’s delays in addressing 1,4-dioxane pollution, members of the Fayetteville Public Works Commission have urged DEQ to take immediate action.²¹

The situation is even more urgent because Greensboro is not the only source of 1,4-dioxane in the Cape Fear.²² Other municipalities also contribute to the pollution that flows into downstream communities’ water supplies.²³ As discussed below, the existence of multiple sources emphasizes the need to control and eliminate Greensboro’s discharge.

II. The agreement between DEQ and Greensboro will not result in meaningful reductions anytime soon.

The agreement between Greensboro and DEQ is wholly inadequate. Both the City and DEQ have been investigating the City’s discharges for years—yet the agreement sets an unenforceable, insufficient goal and does not require the City to take action to protect the communities downstream.

Even though Greensboro has known about, and been investigating, its pollution since at least 2015, the agreement gives the City more time to study its pollution. After the first year, the City can comply with the agreement by showing through a daily maximum grab sample that the 1,4-dioxane in its discharge falls below 60 ug/L.²⁴ Then after a second year, the City can comply with the agreement by showing through a daily maximum grab sample that the 1,4-dioxane in its discharge falls below 35 ug/L.²⁵ Throughout this time, any violation of these sampling targets results only in additional investigation into the City’s pollution and negligible penalties. These requirements are insufficient for many reasons.

First, if the City fails to meet these targets, there are no real consequences. The City would have to pay a small penalty, state the reasons for its noncompliance, and describe any actions taken in response.²⁶ Even if *over a quarter* of the City’s discharge data exceeds 60 ug/L at the end of the first year, Greensboro would be allowed to delay any action once again by

²⁰ Knappe 2019 Presentation, *supra* note 1.

²¹ Greg Barnes, *Fayetteville water has rising amounts of probable carcinogen. Why aren’t regulators stopping it?*, THE FAYETTEVILLE OBSERVER (Jun. 9, 2018), <https://www.fayobserver.com/news/20180609/fayetteville-water-has-rising-amounts-of-probable-carcinogen-why-arent-regulators-stopping-it>.

²² Pittsboro and other downstream communities are also suffering from other industrial toxins, including per- and polyfluoroalkyl substances (“PFAS”). In the absence of action from regulators and upstream municipalities, affected communities have been forced to find solutions themselves—including installing expensive filtration systems or providing bottled water at schools. Greg Barnes, *Duke to study PFAS health effects in Pittsboro residents*, N.C. HEALTH NEWS (July 29, 2019), <https://www.northcarolinahealthnews.org/2019/07/29/pfas-health-effects-in-pittsboro-residents-studied/>.

²³ *1,4-Dioxane in the Cape Fear River Basin of North Carolina: An Initial Screening and Source Identification Study*, N.C. DEPT. OF ENVTL. QUALITY 4 (Jan. 25, 2016), https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/ECO/DioxaneReport_Yr1Final-20160127.pdf (“DEQ 2016 1,4-Dioxane Report”).

²⁴ SOC at 4.

²⁵ *Id.* at 6.

²⁶ *Id.* at 5 (asking the City to make a “statement of the reason(s) for noncompliance, remedial action(s) taken, and a statement on the extent to which subsequent dates or times for accomplishment of listed activities may be affected”); *Id.* at 7–8 (providing for minimal penalties).

further investigating its pollution problem.²⁷ If the City cannot “consistently achieve[.]” the second year goal of 35 µ/L, then it need only “develop a Best Management Practices/1,4-dioxane Minimization Plan.”²⁸ There are no specific requirements for that plan—omitting any requirement that Greensboro or its industries install treatment technology or implement other pollution controls.

Moreover, the agreement’s sampling goals are not protective: 60 µg/L is over 170 times higher than the one-in-a-million cancer level adopted in EPA’s health advisory for 1,4-dioxane. The target applicable after the second year—35 µg/L—is still 100 times higher than the health advisory level. Neither would protect the public even if Greensboro were the only source of 1,4-dioxane in the river. Given the reality that other sources continue to contribute 1,4-dioxane to the river, both goals are plainly insufficient. As discussed below in section III(D), they also violate North Carolina’s water quality standards.

Finally, a grab sample is taken at one point in time. The City’s 1,4-dioxane discharges have had spikes that, in turn, cause spikes of the chemical in drinking water downstream.²⁹ The grab samples required by the agreement would not capture those extreme events that have endangered communities in the past.

This agreement between the City and Greensboro does nothing to protect the people living in Pittsboro, Fayetteville and other communities that drink water from the Cape Fear River. It continues to allow the City to delay action, elevating Greensboro’s interests over those of downstream communities.

III. DEQ must issue a permit with strict 1,4-dioxane limits based on available treatment technology and compliance with water quality standards.

The Clean Water Act prohibits the discharge of any pollutant without a National Pollutant Discharge Elimination System (“NPDES”) permit.³⁰ As conceded by the order, Greensboro is discharging a pollutant from a point source without a NPDES permit authorizing that discharge.³¹ The Clean Water Act does not allow DEQ to circumvent the permitting process to allow pollution without conducting a proper permitting analysis.

As courts have stated, “[o]nly Congress may amend the [Clean Water Act] to create exemptions from regulation[.]”³² and in the case of the Clean Water Act, “Congress intended the NPDES permit to be the only means by which a discharger from a point source may escape the total prohibition of [§] 301(a).”³³ Accordingly, “[A State] has no authority to create a permit

²⁷ *Id.* at 7 (asking the City to “submit a report that *considers . . . 1) Investigation of alternate/additional treatment processes . . . at major industrial sources[;] 2) Investigation of the . . . feasibility of treatment technology . . . at wastewater treatment plants[; and] 3) Investigation of the . . . feasibility of treatment technologies . . . at drinking water treatment facilities*”) (emphasis added).

²⁸ *Id.* at 6–7.

²⁹ *See infra* Section I(C).

³⁰ 33 U.S.C. §§ 1311(a), 1342(a)(1).

³¹ SOC at 1 (“NPDES Permit NC0047384 does not currently contain discharge limitations for 1,4-dioxane.”).

³² *N. Plains Res. Council v. Fid. Expl. & Dev. Co.*, 325 F.3d 1155, 1164 (9th Cir. 2003) (citing *Am. Mining Congress v. E.P.A.*, 965 F.2d 759, 772 (9th Cir.1992)).

³³ *Nat. Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369, 1374 (D.C. Cir. 1977).

exemption from the [Clean Water Act] for discharges that would otherwise be subject to the NPDES permitting process.”³⁴

Instead of relying on a voluntary agreement that does not include any enforceable limits to regulate Greensboro’s discharge, DEQ must issue the City a NPDES permit under the Clean Water Act. As discussed below, the permit must include strict limits on 1,4-dioxane based on available treatment technology and compliance with water quality standards.

A. Greensboro’s discharge of 1,4-dioxane is an unpermitted discharge in violation of the Clean Water Act.

The most recent NPDES permit for the T. Z. Osborne WWTP—NPDES Permit No. NC0047384—was issued by DEQ in June 2014.³⁵ Greensboro applied for renewal of this NPDES permit in 2013.³⁶ Greensboro’s application did not disclose its discharge of 1,4-dioxane,³⁷ nor did the permit issued by DEQ authorize the discharge of 1,4-dioxane.³⁸ Therefore, Greensboro’s 1,4-dioxane discharges are unpermitted discharges in violation of the Clean Water Act.

DEQ has acknowledged that disclosure of toxic pollutants, including 1,4-dioxane, is required by the Clean Water Act and state water quality laws. The agency has stated that “the permit applicant’s burden [...] is to disclose [...] the presence of known constituents in a discharge that pose a potential risk to human health.”³⁹ Without such disclosure, the application’s permit would not “shield the permittee from liability,” since the discharged pollutant would not be “within the ‘reasonable contemplation’ of the permitting agency when it issued the permit due to nondisclosure by the permittee.”⁴⁰ The EPA Environmental Appeals Board’s decision in *In re: Ketchikan Pulp Company* further emphasized the importance of disclosure,⁴¹ and this decision has been adopted by the Fourth Circuit. In *Piney Run Pres. Ass’n v. Cty. Comm’rs*, the Fourth Circuit stated: “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].”⁴²

Moreover, municipalities that own and operate wastewater treatment plants are required to “fully and effectively exercise[] and implement[]” their authority to

³⁴ *N. Plains Res. Council*, 325 F.3d at 1164; see also *W. Va. Highlands Conservancy, Inc. v. Huffman*, 651 F. Supp. 2d 512, 518 (S.D.W. Va. 2009).

³⁵ NPDES Permit No. NC004784 for the T.Z. Osborne Wastewater Treatment Plant, N.C. DEPT. OF ENVTL. QUALITY (June 6, 2014) [hereinafter “NPDES Permit No. NC004784”], included as Attachment 4.

³⁶ Permit Renewal Application No. NC004784, N.C. DEPT. OF ENVTL. QUALITY (Nov. 26, 2018), included as Attachment 5.

³⁷ *Id.*

³⁸ NPDES Permit No. NC004784, *supra* note 35.

³⁹ Amended Complaint, *N.C. Dept. of Env’tl. Quality v. Chemours*, 17 CVS 580, 6–7 (N.C. Super. 2018) (citing 33 U.S.C. § 1342(k), *Piney Run Pres. Ass’n v. Cty. Comm’rs*, 268 F.3d 255, 265 (4th Cir. 2001)).

⁴⁰ *Id.*

⁴¹ See *In re Ketchikan Pulp Co.*, 7 E.A.D. 605 (EPA) (1998).

⁴² *Piney Run*, 268 F.3d. at 268.

“[i]dentify the character and volume of pollutants contributed to the [publicly owned treatment works]” by their industries.⁴³

Because Greensboro did not disclose the presence of 1,4-dioxane in its NPDES permit application, it does not have a NPDES permit authorizing it to discharge 1,4-dioxane from these point sources into the Cape Fear River Basin. Therefore, Greensboro has violated, and continues to violate, the Clean Water Act.

B. DEQ and Greensboro must exercise their authority to require industries to stop discharging 1,4-dioxane.

Federal and state laws do not allow for mandatory pollution control requirements to be supplanted by voluntary agreements. In particular, the Clean Water Act pretreatment program mandates that DEQ and Greensboro use their authority under the Act to prevent industries from releasing chemicals that cannot be removed by the City’s treatment plant, and that threaten human health—it does not allow DEQ to rely on the “cooperative institutional resolve of all affected parties”⁴⁴ before the agency addresses toxic contamination in drinking water supplies. The continued discharge of 1,4-dioxane from the City of Greensboro’s treatment plant after years of voluntary action demonstrates why.

DEQ has stated that treatment technologies for 1,4-dioxane “are anticipated to be prohibitively expensive for local governments and the citizens served by public utilities,” and that the best way to stop 1,4-dioxane pollution is “reduction, elimination and/or capture and treatment at industrial sources using or generating 1,4-dioxane.”⁴⁵ The agreement between DEQ and Greensboro similarly acknowledges that “source reduction will be the primary and most effective means of reducing 1,4-dioxane concentrations”⁴⁶ The Clean Water Act provides how industrial sources are eliminated—it mandates that DEQ and Greensboro require industries to stop their 1,4-dioxane pollution. For instance, as discussed further below in Section III(C), the permitting process includes analysis of available technology that enables the agency and City to determine how to prevent or control discharges.⁴⁷ The agreement between Greensboro and DEQ bypasses that process.

The Clean Water Act pretreatment program governs the discharge of industrial wastewater to publicly owned treatment plants. These industrial wastewater discharges require permits, known as pretreatment permits.⁴⁸ Once appropriate limits are included in a treatment plant’s NPDES permit, the municipality that runs the treatment plant—in this case, Greensboro—is required to regulate its industries so that they do not cause the treatment plant to violate its own NPDES permit.⁴⁹ This is how the Clean Water Act “assures the public that [industrial] dischargers cannot contravene the [Clean Water Act’s] objectives of eliminating or at

⁴³ 40 C.F.R. § 403.8(f)(1)(vi)(B).

⁴⁴ SOC at 3.

⁴⁵ See DEQ 2016 1,4-Dioxane Report, *supra* note 23, at 5.

⁴⁶ SOC at 3.

⁴⁷ See *infra* Section III(C).

⁴⁸ See 40 C.F.R. § 403.

⁴⁹ 40 C.F.R. § 403.8(f)(1).

least minimizing discharges of toxic and other pollutants simply by discharging indirectly through [wastewater treatment plants] rather than directly to receiving waters.”⁵⁰ As is appropriate, the pretreatment program is intended to place the burden of treating polluted discharges on the entity that creates the pollution—rather than on the taxpayers that support municipally owned treatment plants, or downstream communities that depend on rivers as public water supplies.⁵¹

Moreover, municipalities that own and operate wastewater treatment plants, such as Greensboro, are required to “immediately and effectively to halt or prevent any discharge of pollutants to the [publicly owned treatment works] which reasonably appears to present an imminent endangerment to the health or welfare of persons.”⁵² Together, these laws ensure that municipally owned treatment plants do not become dumping grounds for uncontrolled industrial waste. DEQ has an oversight role under the program. DEQ’s obligations under the pretreatment program include the “[r]eview, approval, denial and oversight” of pretreatment programs.⁵³

Greensboro, therefore, cannot allow industries to discharge pollutants that will endanger human health,⁵⁴ or allow industries to cause the City’s treatment plant to violate its own NPDES permit.⁵⁵ Greensboro must include limits on pollutants in pretreatment permits so that the City does not exceed its own permit limits.⁵⁶ At the same time, DEQ must issue NPDES permits with strict 1,4-dioxane limits based on available treatment technology that also comply with water quality standards.⁵⁷ These permit limits force municipalities like Greensboro to properly regulate its industries, because the City is required to “fully and effectively exercise[] and implement[]” its regulatory authority over its industries to meet such limits.⁵⁸ The pretreatment program, therefore, mandates that DEQ and Greensboro strictly regulate 1,4-dioxane; and is structured to put the burden of cleaning up the pollution on the industries that create it.

Greensboro has begun to address the 1,4-dioxane pollution coming from its industries, but the City and DEQ’s failure to use their full authority under the pretreatment program has resulted in years of delay and has endangered downstream communities. In 2015, the City was already investigating its industrial sources of 1,4-dioxane.⁵⁹ One industry reduced its 1,4-dioxane discharge, which somewhat reduced the 1,4-dioxane in the City’s effluent.⁶⁰ But Greensboro did not require 1,4-dioxane limits in any industrial pretreatment permits, and DEQ did not force the City to regulate the chemical by including limits in the City’s NPDES permit, as

⁵⁰ General Pretreatment Regulations for Existing and New Sources, 52 Fed. Reg. 1586, 1590 (Jan. 14, 1987) (codified at 40 C.F.R. § 403).

⁵¹ *Id.*

⁵² 40 C.F.R. § 403.8(f)(1)(vi)(B).

⁵³ Memorandum of Agreement Between the State of North Carolina and the United States Environmental Protection Agency Region 4, 24 (Oct. 15, 2007), included as Attachment 6.

⁵⁴ 40 C.F.R. § 403.8(f)(1)(vi)(B).

⁵⁵ *Id.* at § 403.8(f)(1).

⁵⁶ *Id.* at § 403.5(d).

⁵⁷ *See infra* Sections III(C), (D).

⁵⁸ 40 C.F.R. § 403.8(f).

⁵⁹ SOC at 2.

⁶⁰ *Id.*

required by the Clean Water Act. As a result, Pittsboro and other communities downstream continued to receive contaminated water.⁶¹

The consequences of that failure continue to be evident. The City continued to discharge 1,4-dioxane.⁶² In August 2019, Greensboro was caught discharging a particularly large amount of 1,4-dioxane that caused unprecedented spikes in drinking water supplies downstream.⁶³ One of the City's industries—Shamrock Environmental Corporation—was found to be responsible.⁶⁴ The company now touts that it has installed technology to remove the chemical.⁶⁵ This voluntary action, however, comes after people downstream had already consumed Shamrock and Greensboro's toxic wastewater.⁶⁶ If Greensboro had included 1,4-dioxane limits in its industries' pretreatment permits after the City found out about its pollution in 2015, people downstream would not have had to drink water contaminated by the City's pollution for the past five years.

The proposed agreement between Greensboro and DEQ still does not require 1,4-dioxane limits in the City's NPDES permit, or in any industrial pretreatment permits.⁶⁷ Not only does the agreement violate the mandate of the Clean Water Act pretreatment program, it continues to threaten communities downstream by failing to require action from Greensboro and its industries.

C. DEQ should issue a NPDES permit with strict 1,4-dioxane limits based on what the technology can achieve.

The agreement between Greensboro and DEQ states that “significant future reductions will require [] technological advances.”⁶⁸ But the Clean Water Act does not allow DEQ to wait for technological advances. The Act is a technology-forcing statute. It is designed to stimulate technological improvements, and not to allow harmful pollution to continue to be discharged in hopes that someday someone will find a better solution. The Act, therefore, requires DEQ to assess technology available now to remove pollutants, and to set permit limits based on that technology.

⁶¹ See Knappe 2019 Presentation, *supra* note 1; HAW RIVER ASSEMBLY, *supra* note 17.

⁶² DEQ only started to require regular of monitoring of 1,4-dioxane in the past couple of years, but monitoring reports regularly showed the presence of the chemical in the City's effluent. See May 2018 DMR, *supra* note 15 (reporting a monthly average concentration of 331.8 408 µg/L); August 2018 DMR, *supra* note 15 (reporting a monthly average concentration of 408 µg/L); March 2019 DMR, *supra* note 15 (reporting a monthly average concentration of 24.2 µg/L). These reports are included as Attachment 2.

⁶³ Greg Barnes, N.C. Health News, *DEQ identifies Greensboro company responsible for discharging chemical*, CAROLINA PUBLIC PRESS (Oct. 16, 2019), <https://carolinapublicpress.org/29409/deq-identifies-greensboro-company-responsible-for-discharging-chemical/> (last visited July 10, 2020).

⁶⁴ Taft Wireback, *Greensboro dioxane settlement looms to environment's distress*, GREENSBORO NEWS & RECORD (July 3, 2020), https://www.greensboro.com/news/local_news/greensboro-dioxane-settlement-looms-to-environments-distress/article_aa64e73f-9cd5-5c23-83fc-6b4431df0231.html.

⁶⁵ *Id.*

⁶⁶ See Knappe 2019 Presentation, *supra* note 1; HAW RIVER ASSEMBLY, *supra* note 17.

⁶⁷ The SOC contains general language that Greensboro “[m]odify SIU permits or develop other pretreatment program mechanisms as necessary,” but it does not actually require that the City impose limits that comply with the Clean Water Act or that will be protective. SOC at 5-6.

⁶⁸ SOC at 3.

The Clean Water Act requires permitting agencies to, at the very least, incorporate, technology-based effluent limitations on the discharge of pollutants.⁶⁹ Technology-based effluent limits are “the minimum level of control that *must be imposed* in a permit.”⁷⁰ North Carolina water quality laws further state that municipalities must be treated like an industrial discharger if an industry “significantly impact[s]” a municipal treatment system.⁷¹ In this situation, the agency must assess technology-based effluent limits for Greensboro, even if effluent limits and guidelines have not been published and adopted.⁷²

Treatment technologies for 1,4-dioxane are available. For instance, the chemical can be removed using advanced oxidation processes, such as using ultraviolet light in combination with hydrogen peroxide.⁷³ Such a process has been used at the Tucson International Airport Area Superfund Site to remove legacy 1,4-dioxane contamination.⁷⁴ That treatment system is able to remove over 97 percent of the chemical from polluted water.⁷⁵ One of Greensboro’s industries, Shamrock Environmental Corporation, claims to have installed technology to eliminate not only 1,4-dioxane, but other pollutants as well.⁷⁶ DEQ must assess treatment technology available for Greensboro and its other industries.

D. State law on toxic substances requires that Greensboro’s discharge does not result in levels above .35 ug/L in South Buffalo Creek.

The state toxic substances standard mandates that Greensboro’s discharge does not cause levels downstream of the plant to exceed .35 µg/L in South Buffalo Creek—a drinking water supply. The agreement between Greensboro and DEQ, on the other hand, only asks that the City *try* to get to 35 µg/L—100 times higher than the level mandated by the standard.⁷⁷

In addition to including technology-based effluent limits in the permit, Greensboro must affirmatively demonstrate, and DEQ must ensure, that water quality standards will not be violated. If there is a “reasonable potential” that water quality standards will be exceeded, DEQ must include water quality-based effluent limits in the permit.⁷⁸

1,4-dioxane is a likely carcinogen and is regulated under the North Carolina toxic substances standard. The standard requires that “the concentration of toxic substances, either alone or in combination with other wastes, in surface waters shall not render waters injurious to

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

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

⁷¹ 15A N.C. ADMIN. CODE 02B .0406 (a), (e).

⁷² *Id.*

⁷³ Amie C. McElroy, et al., *1,4-Dioxane in drinking water: emerging for 40 years and still unregulated*, 7 Current Opinion in Env'tl. Science & Health 117, 119 (2019), included as Attachment 7.

⁷⁴ *See Advanced Treatment for 1,4-Dioxane – Tucson Removes Contamination Through UV-oxidation*, TrojanUV CaseStudies (2019), included as Attachment 8.

⁷⁵ *Id.* at 2; *see also Educational Brochure*, Tucson Airport Area Remediation Project, included as Attachment 9.

⁷⁶ Wireback, *supra* note 64.

⁷⁷ SOC at 6. As previously discussed, there are no real consequences if the City does not achieve this goal.

⁷⁸ 40 CFR § 122.44(d)(1)(i), *see also* 33 U.S.C. § 1311(b)(1)(C); 15A N.C. ADMIN. CODE 2H .0112(c) (stating that DWR must “reasonably ensure compliance with applicable water quality standards and regulations.”).

[...] public health, or impair the waters for any designated uses.”⁷⁹ The standard further mandates that “[t]he concentration of toxic substances shall not exceed the level necessary to protect human health...”⁸⁰ It is Greensboro’s burden to demonstrate that it can meet this standard—the discharge authorized by the agreement does not.

For carcinogens, in particular, the state toxic substances standard requires that concentrations “shall not result in unacceptable health risks,” which is further defined as “more than one case of cancer per one million people exposed (10⁻⁶ risk level).”⁸¹ For 1,4-dioxane, that level is .35 µg/L.⁸² Therefore, in order to comply with the toxic substance standard, Greensboro must demonstrate, and DEQ must reasonably ensure, that the City’s discharges do not cause levels in South Buffalo Creek to exceed .35 µg/L.

DEQ must also reasonably ensure compliance with North Carolina’s prohibition against allowing “[o]ils, deleterious substances, colored, or other wastes” in waters classified as Class C waters—which include the waters that would receive Greensboro’s discharge⁸³—“to render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses.”⁸⁴

Consequently, DEQ must use its authority under the Clean Water Act to issue Greensboro a permit with strict 1,4-dioxane limits based on available technology and compliance with water quality standards.

IV. The failures in Greensboro and DEQ’s agreement will mean that people downstream will continue to drink contaminated water.

Greensboro’s efforts to protect its industries and delay action—and DEQ’s complicity in those efforts—have had severe consequences for people downstream: they have been drinking water polluted with a likely carcinogen for years. This agreement continues on that path, with wholly inadequate goals for pollution reduction and no meaningful requirement to achieve those goals. We therefore urge DEQ to use its full authority under the Clean Water Act to require the City to properly regulate its industries so that downstream communities are protected.

⁷⁹ 15A N.C. ADMIN. CODE 2B .0208(a). North Carolina regulations define toxic substances broadly as “any substance or combination of substances [...], that, after discharge and upon exposure [...], either directly from the environment or indirectly [...], has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions or suppression in reproduction or growth) or physical deformities in [] organisms or their offspring.” 15A N.C. ADMIN. CODE 2B .0202(54) (emphasis added).

⁸⁰ 15A N.C. ADMIN. CODE 2B .0208(a)(2).

⁸¹ *Id.* at 2B .0208(a)(2)(B).

⁸² SOC at 2 (“EPA risk assessments indicate that the drinking water concentration representing a 1 in 1,000,000 cancer risk level for 1,4-dioxane is 0.35 µg/L.”).

⁸³ 15A N.C. ADMIN. CODE. 02B .0211(12). Greensboro’s treatment plant discharges to Water Supply V waters, which are also protected as Class C waters. SOC at 1; 15A N.C. ADMIN. CODE 02B .0218.

⁸⁴ 15A N.C. ADMIN. CODE 02B .0211(12) (“[o]ils, deleterious substances, colored, or other wastes shall not render the waters injurious to public health, secondary recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated uses”).

Thank you for considering these comments. Please contact me at 919-967-1450 or jzhuang@selcnc.org if you have any questions regarding this letter.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jean Zhuang".

Jean Zhuang

A handwritten signature in cursive script, appearing to read "Tirrill Moore".

Tirrill Moore

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Attachments