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Compliance specialist Bill Burdick caps a sample of effluent water – water that has been treated and is leaving the plant – from the cascades at the T.Z. Osborne Water Reclamation Facility in Greensboro on Tuesday. The water will be tested for 1,4-dioxane at two different independent laboratories.

Water treatment plant again releases toxin

Doesn't affect city; poses considerable concern downstream

KENWYN CARANNA
kenwyn.caranna@greensboro.com

GREENSBORO — On the eve of the 22nd Earth Day, the city of Greensboro continues its own fight on the environmental front: eliminating discharges of a

harmful industrial chemical into the Cape Fear River Basin.

Three times since May, excessive amounts of 1,4-dioxane have been released from the city's T.Z. Osborne Water Reclamation Facility into South Buffalo Creek, a tributary that feeds into the Haw River and the Cape Fear River Basin.

Identified by the U.S. Environmental Protection Agency as likely to induce cancer, 1,4-di-

oxane is a clear liquid that mixes readily with water and has a smell sometimes described as pleasant.

And while the release doesn't affect Greensboro water users, it poses considerable concern for nearly a million people who live downstream. Communities such as Pittsboro, Chatham County and Fayetteville draw their drinking water from the Cape Fear River Basin.

The toxin, a heavily-used chemical found in a variety of manufacturing processes as well

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WATCH: Take a tour of the T.Z. Osborne Water Reclamation Facility in Greensboro.

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Dioxane

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as household items like shampoo, body wash and cosmetics, is not removed through the traditional drinking water treatment process.

Greensboro's most recent incident occurred April 5, when 52.2 micrograms per liter of 1,4-dioxane was released. This is higher than the 35 micrograms per liter allowed under an agreement — called a special order by consent — the city has with the N.C. Environmental Management Commission.

Greensboro reported much higher levels of 1,4-dioxane released last year on June 30 (615 micrograms per liter) and Nov. 3 (823 micrograms per liter).

Unlike the two previous releases, however, Greensboro's Water Reclamation Manager Elijah Williams said workers this time were able to determine the source of the toxin coming into the city's wastewater treatment plant.

Williams

They traced it to Lanxess, a chemical company that operates a polymer additives business employing 50 people in Greensboro.

"LANXESS does not use or

store 1,4-dioxane as a raw material on site, though it can be formed inadvertently during certain production processes," the company said in a written statement to the News & Record.

"In this particular case," Williams said, "Lanxess identified a product that generated 1,4-dioxane as an unintended byproduct during the production reaction process."

Company spokesman Mike Mackin said it is still investigating to determine exactly what caused 1,4-dioxane to occur in its effluent.

In its statement, Lanxess said it is "reviewing production procedures with employees, contractors, and other on-site staff, as well as recent maintenance functions and cleaning activities that may have been contributing factors."

So why was the city able to trace the source in the April case, but not the two that happened last year?

Geoff Gisler, senior attorney with the Southern Environmental Law Center, attributes this to a settlement reached in November that amended the original special order by consent.

SELC, on behalf of the Haw River Assembly — a nonprofit environmental group — and the city of Fayetteville, legally challenged the original order to make it stricter.

The resulting settlement im-

poses stricter 1,4-dioxane discharge standards, higher penalties for violations and requires sampling by industries using the city's Osborne plant. It also requires Greensboro to publicly post sampling data and information about its investigation of pollution sources, and to sample water at Pittsboro's drinking water intake on the Haw River and in Jordan Lake.

"I think the most significant thing that the settlement changed is the industrial sampling," Gisler said. "The earlier special order by consent did not require Greensboro to sample the industries. And the reason that makes such a difference is they now know what industries to go to when they get these sample results, because they know who the likely sources are."

Williams said after the June event, the city began surveillance sampling in the various collection systems, called trunklines, to determine what areas showed higher levels of 1,4-dioxane.

"We didn't have enough data to really understand where that (June pollution) came from," Williams said.

"The one in November showed us that it was possibly ... from the Patton Avenue area, and that's when we started working with the industries," he said.

That meant having higher-risk

industries collecting and dating their own wastewater samples and holding them to be tested if 1,4-dioxane was detected in the city's system.

"It's a process," Williams said, "an investigative process ... but I feel like our staff did a great job of tracking down where potential sources are."

With the April event, "we saw that Patton Avenue area again and that's when we were able to work with Lanxess," Williams said.

Lanxess said it also tests its wastewater discharge weekly and immediately notified the city when it detected 1,4-dioxane.

"They are working with us proactively to reduce or eliminate the 1,4-dioxane," Williams said of the company.

The city's sample taken Tuesday showed its discharge is back to normal, with results of 2.24 micrograms per liter of 1,4 dioxane, Williams said.

Still, when levels are high, the additional testing can cost up to \$7,000 per week, he said. And the city likely will pay a penalty of \$1,000 for this month's release.

"We're hoping by working with the different companies and them being able to figure out what products are creating byproducts that could have 1,4-dioxane, that we're able to constantly improve so that we don't have these high values

come out," Williams said.

In Pittsboro, the closest drinking water plant affected by effluent from Greensboro's Osborne plant, an official said the latest discharge didn't exceed the EPA drinking water safety recommendations.

Greensboro officials notify Pittsboro and other downstream water users when high levels of 1,4-dioxane are released.

Still, Cory Saulsbury, Pittsboro's water plant superintendent, said the city kept its water tanks low earlier this month.

"We will shut down operations and just let the river flow by a little bit," he said. "We don't want any of that in our system."

If the pollutant does enter the system in high levels, Saulsbury said the city drains its tanks as low as possible until the Haw River testing shows lower levels.

"It's definitely a big issue," he said. "It's just the health risks and stuff like that over time."

Contact Kenwyn Caranna at 336-373-7082 and follow @kcaranna on Twitter.



VIEW: See photos of the testing process at TT.Z. Osborne Water Reclamation Facility in Greensboro. Point your smartphone camera at the QR code, then tap the link. **NEWSVU**