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UT finds chemicals in creek sediment

Elevated levels of benzene compounds, lead detected in tests

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Nearly half of recent tests of sediment in Waller Creek on the University of Texas campus have detected elevated levels of benzene-based chemicals that are considered possible or probable carcinogens.

At one location where the creek flows over a small dam in a park-like setting just north of 24th Street, the test result for benzo(a)pyrene and six of its most toxic benzene-based relatives was more than 28 times the level at which federal agencies begin assessing for possible cleanup in residential and recreational settings.

A block to the south, where the creek begins to pass the football stadium, lead was found in sediment in concentrations that exceed federal soil safety guidelines for public health in residential settings.

The tests, which were conducted by the university in early February at 11 locations along the creek's 1.4-mile north-south run through the campus, showed elevated levels of the polycyclic aromatic hydrocarbons, or PAHs, at five sites between Dean Keeton Street on the north and Martin Luther King Jr. Boulevard on the south.

Overall, the tests showed low levels of the toxic chemicals in sediment both as the creek enters and leaves the campus. However, as the creek winds through the dense campus development, the PAH indicators climb to elevated levels and remain high.

Erie Janssen, UT's director of Environmental Health and Safety, says the results, which are similar to city tests conducted from 1998 to 2000, warrant additional testing and a search for sources. He and others involved in the testing say they don't think there is enough human exposure to sediment along the creek to represent a threat to human health.

Officials with the Texas Commission on Environmental Quality, who received the test results Thursday, said the results warrant investigation of the sites with the highest levels of PAH and lead contaminants to determine if people are being exposed and whether aquatic life is at risk.

"To see a level of (16,000 parts per billion of) benzo(a)pyrene, that raises a question in my mind why that one location is higher by a couple orders of magnitude than the other locations along the creek," said Michael Honeycutt, a senior toxicologist at the state agency.

"I'll also need need to ask the question: What is the potential for human exposure?" Honeycutt said. "Regardless of what the answer is . . . this is well above the level that can affect aquatic animals."

The highest PAH levels were recorded just north of 24th Street at a spot that draws students to benches for reading and that has been considered for a park. That location is bounded by the university service and chemical transfer buildings on the west and northwest, Simkins Hall dormitory to the northeast and San Jacinto Boulevard and a large parking garage on the east.

Philip Bennett is a professor of geology and one of three faculty members appointed to a task force to evaluate pollution levels in Waller Creek. Bennett said there is no evidence that children or students or anyone else plays in the creek, and that, he says, eases public health concerns about the creek.

PAHs are formed during the incomplete burning of coal, oil, gas, wood, garbage and other organic materials, including tobacco and charbroiled meats. Although there are nearly 100 chemicals in the PAH family, environmental officials and scientists regard seven as probable or possible human carcinogens and the most common concern for health.

Another point of inquiry for UT and the environmental agency might be the test site just south of the 23rd Street bridge, where lead was recorded at levels that exceed state and federal criteria for cleanup if found in residential soils.

This site is southeast of, and downstream from, the Hal C. Weaver power plant and the power plant annex. UT's power plant once was coal-powered.

The site also is one block downstream from the Waller Creek location where the city found the highest concentrations of lead and PAHs anywhere in Austin during tests in August 2000.

As with the PAH test results, Honeycutt said the lead readings would only become a public health issue if children are in frequent contact with the sediment.

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University officials said they couldn't reach any conclusions about the source of the contaminants, although the location with the highest PAH level is just below a stone dam where a stormwater pipe empties in the creek. The pipe is thought to drain the area east and north, which includes parking lots and the site of a long-closed gasoline station, UT officials said.

Bennett said the levels of PAHs that were slightly above or below the EPA's informal guideline for considering a cleanup are probably the result of rainwater washing off roads and parking lots, picking up oil, bits of asphalt and other materials that can contain PAHs.

"What we're seeing in those results may be the background level for streams in a highly developed urban setting," Bennett said. "There were some bits of material that looked like asphalt in the sample, the one that was higher than what you would expect to see in a city setting."

University officials said this round of tests was in response to Austin American-Statesman articles in January that reported elevated levels of PAHs in the soils and sediments of nearly a dozen bodies of water, including Barton Creek, Barton Springs Pool, Waller, East Bouldin and Shoal creeks, Taylor Slough and the Central Park ponds near North Lamar Boulevard and West 45th Street.

The articles said city tests of sediment in several of those bodies of water had recorded levels of PAHs that exceeded those recorded at sites elsewhere in the country where federal or state authorities required cleanups under the federal Superfund program. Waller, Barton and East Bouldin creeks and the Central Park ponds were among those bodies of water.

"The levels reported by the city concerned us," Janssen said.

Although elevated, the new test results from Waller Creek are about 15 times lower than the peak level of PAHs previously detected at the 24th Street site and 2.7 times lower than the peak lead level detected by the city in August 2000.

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