Barton development linked to algae bloom

Report details accidental effluent discharge

By Mike Todd
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A massive algae bloom along Barton Creek coincided with an accidental discharge of almost half a million gallons of mixed lakewater and effluent from Barton Creek Properties' sewage-treatment system, according to government records.

City and state officials said they have not determined exactly what caused the growth of dense green algae that covers 80 to 90 percent of the creek bed for about three miles. But the manager of the Barton Creek Properties development said Friday that the effluent discharge apparently was a trigger.

The bloom is about twice as large as one last year, city investigators said, and it starts where a tributary draining the development's Fazio golf course enters the creek. That was the site of the effluent discharge in February.

While environmentalists cite the algae as a reason to restrict development in the area, Barton Creek Properties Manager Barry Allison said his company is living up to its promise to develop in an environmentally responsible manner.

"We've done everything we've said all along that we would do," Allison said. "We detected a problem, chased down the cause and have done everything possible to prevent it from happening again."

The discharge was reported in March to the Texas Water Commission. Agency records show 440,300 gallons of a mixture of treated sewage effluent and raw water from Lake Austin overfilled a pond and flowed

See Barton Creek, A10

Barton Creek algae linked to accidental release of effluent

Continued from A1

into the tributary.

A Barton Creek Properties memo in the Water Commission file said a worker mistakenly used water containing effluent to fill the golf course pond Feb. 7 and left the fill valve open overnight.

"It could have been as little as one-fifth or as much as maybe 40 percent (treated effluent)," Allison said. "Certainly some made it into the creek, and that's what created the initial algae."

He said other factors such as seasonal use of fertilizer along the creek helped maintain the algae.

"The combination of the time of year and the additional load into the creek washing off lawns, including our lawns and the golf course, and the incident in February, created enough of a slight imbalance in the creek to create this algae," Allison said.

The company memo said the golf course superintendent did not realize state law required an immediate report of the discharge.

Allison said company officials noticed the algae bloom in March and discovered the discharge when they searched for possible causes. They reported the discharge March 15, records show.

Nancy McClintock, a city scientist who has been investigating the algae bloom and took water samples April 20, said she was unaware of the discharge until contacted by a reporter Friday. The Water Commission does not routinely pass along discharge reports to the city, an agency official said.

McClintock said the nutrient-rich effluent could have triggered the algae bloom. Certainly it is associated with the tributary draining the golf course, she said.

The development's golf courses use fertilizer and are irrigated with treated sewage effluent. The algae, a species called cladophora, commonly feeds on nitrogen such as that from sewage and fertilizer, McClintock said.

Tim Jones, an environmentalist who opposes the Barton Creek development and has studied the creek in detail, said that while the discharge helps explain the algae bloom, it was not the sole cause. The overall problem is development in general and routine operation of the golf courses, he said.

"These accidents, the result of them can be long-lasting," Jones said. "When you have development, the incidence of accidents is going to increase until . . . it never goes away. You're going to lose Barton Creek."

Jones has filed complaints with the Texas Water Commission and made a videotape the Save Our Springs Coalition used Tuesday in a news conference about the algae. He said he, too, was unaware of the discharge until Friday.

"Now we know for sure that it was a spill of water coming off the golf course," he said.

A city report says the dense algae growth spans bank to bank from the Barton Creek Properties golf courses downstream to Lost Creek Country Club. A similar but smaller bloom occurred about this time last year, McClintock said.

"Maybe if this did happen once a year and it went away, it wouldn't be that big of a deal," she said. "But are we going to see a pattern of increased duration of algae blooms or a pattern of increased extent?"

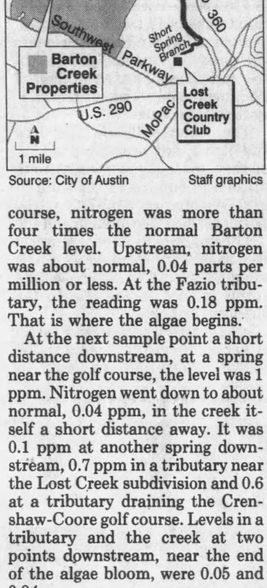
Allison said smaller blooms occurred in 1990 and 1991. Algae is a natural part of the ecosystem, he said, and is not caused by his development's golf courses.

"Two miles upstream from this particular tributary we have golf holes along the creek, and . . . you won't see a speck of algae," he said.

The algae is ugly, its bloom represents a dramatic change in the creek's biological makeup, and it can harm tiny critters that live there, McClintock said. But people who swim in the creek downstream probably won't notice it, she said.

McClintock and other Environmental and Conservation Services Department investigators took water samples at 16 points along the creek, from above the Barton Creek Properties development to the Lost Creek Country Club below it. In addition to the large bloom, they also found a smaller bloom, about three-fourths of a mile long, upstream from Barton Creek Properties.

Sample results show that in the tributary draining the Fazio golf course, nitrogen was more than four times the normal Barton Creek level. Upstream, nitrogen was about normal, 0.04 parts per million or less. At the Fazio tributary, the reading was 0.18 ppm. That is where the algae begins.



Source: City of Austin Staff graphics

At the next sample point a short distance downstream, at a spring near the golf course, the level was 1 ppm. Nitrogen went down to about normal, 0.04 ppm, in the creek itself a short distance away. It was 0.1 ppm at another spring downstream, 0.7 ppm in a tributary near the Lost Creek subdivision and 0.6 at a tributary draining the Crenshaw-Coore golf course. Levels in a tributary and the creek at two points downstream, near the end of the algae bloom, were 0.05 and 0.04.

Allison said tributaries and springs historically have higher levels of nitrogen than the creek.

He said Barton Creek Properties plans to remove the algae once it stops growing, as the company has done in the past. Further, Allison said, the company has proposed building a pollution-control pond at the Fazio tributary.

A memo in the Water Commission files, dated March 15 and from Allison to other Barton Creek Properties officials, ordered additional training for the staff and new controls on the irrigation system to prevent accidental use of water containing effluent. It also said environmental violations would be grounds for dismissal.

Jones said he fears for the creek.

"Now they're looking at putting 5,000 (residences) up there," he said. "The cumulative impact on the creek . . . of unintentional episodes is going to be enough to destroy the creek."