The State

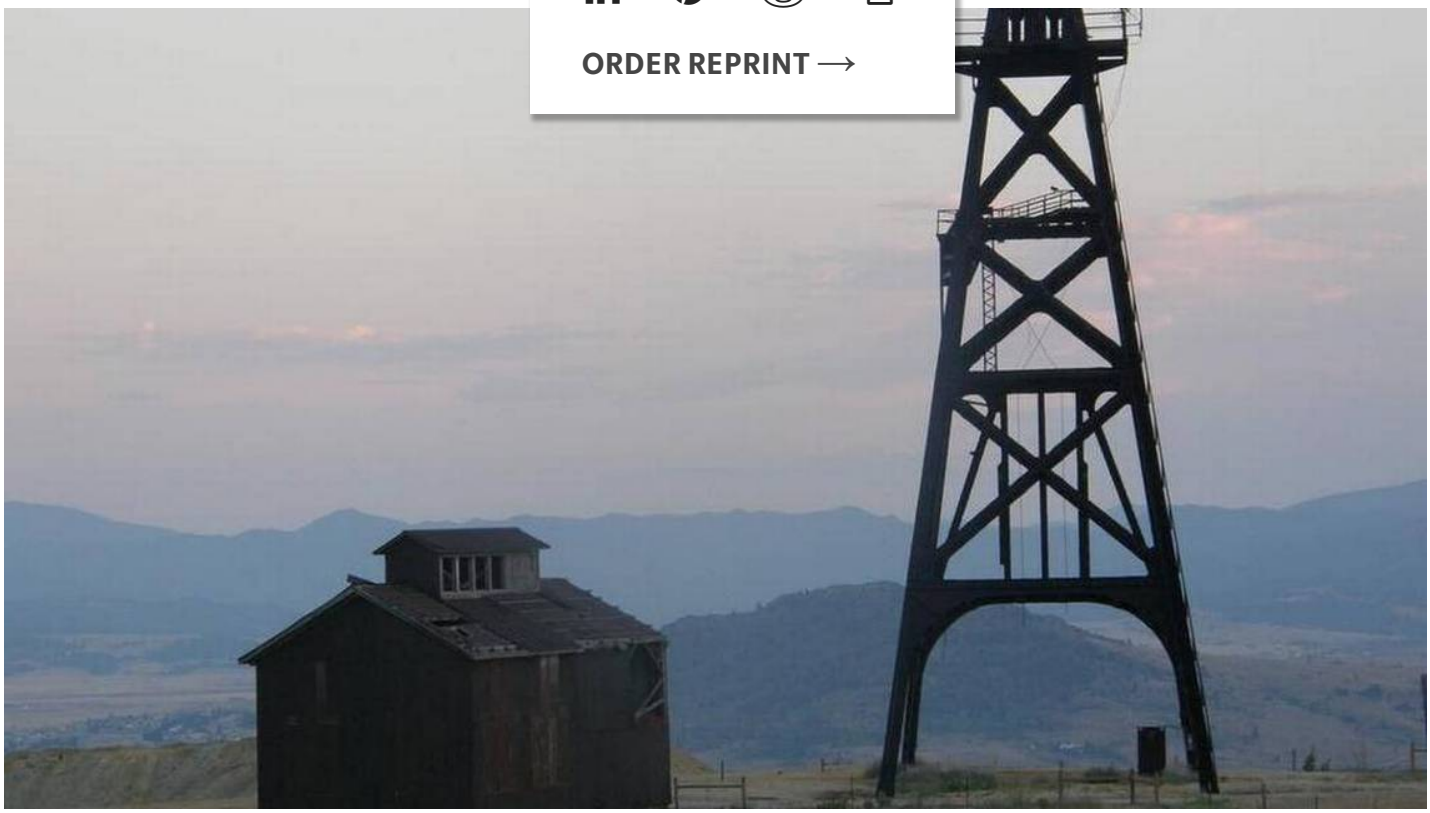
LOCAL

Gold legacy haunts Montana

BY SAMMY FRETWELL

SFRETWELL@THESTATE.COM

SEPTEMBER 23, 2015 10:58 AM, UPDATED SEPTEMBER 23, 2015 10:58 AM



Old mining structures at Butte, Mont., show the area's history of gold and copper mining.

Sheared off mountain tops, towering piles of rubble and deep pits make it hard to ignore Montana's recent history of gold mining.

Dominant on the landscape, industrial-scale gold mines provided jobs and tax revenues for parts of three decades in small communities that came to depend on the economic support. But big open-pit gold mines had such an impact on the environment that Montana effectively banned new ones 16 years ago.

Now, as a Canadian corporation looks to develop an industrial-scale gold mine in South Carolina, Montana is struggling with the mess these massive operations left behind. Bankruptcies, sloppy mining practices and sometimes lax oversight created expensive and dangerous problems that other states could learn from as a new wave of gold exploration extends to the Southeast, Montana regulators say.

"We have had long and painful lessons," said Warren McCullough, a bureau chief with the Montana Department of Environmental Quality. "I would hope other states would look at that and keep that in mind."

#READLOCAL

State and federal taxpayers have spent at least $40 million in Montana to clean up environmental problems caused by four gold strip mines that shut down in the 1990s, according to the Department of Environmental Quality and the U.S. Forest Service.

The Beal Mountain mine, in southwest Montana's Beaverhead Deer Lodge National Forest, has cost taxpayers about $13 million to maintain since it closed. The Zortman and Landusky mines, next to an Indian reservation in north central Montana, have cost nearly $24 million. And the Basin Creek mine near Helena has cost the public more than $3 million to clean up.

Regulators say completing cleanup work could cost taxpayers tens of millions of dollars more. Each of the mines was owned by Pegasus Gold, a company that filed for bankruptcy in 1998.

Meanwhile, a fifth industrial-scale gold mine is being cleaned up by its owners, but the closed site continues to anger ranchers because of water pollution.

And a sixth open-pit mine – the last gold operation of its kind still in business – is trying to keep polluted groundwater from spreading off the property.

Montana's gold mines touted strict environmental safety plans when they opened, but later failed to contain toxins.

Some of the open-pit gold mines have unearthed sulfide-rich rock that, when exposed to air and water, creates sulfuric acid. The acid can drain for hundreds, if not thousands, of years.

GOLD FROM CRATERS

The mine proposed for South Carolina, which would be larger than any gold digging operation in the eastern United States, would be an open-pit mine similar to those in Montana.

Unlike underground shaft mines, open-pit gold mines are massive operations that rely on blasting huge craters in the earth's crust to extract microscopic gold particles that are embedded in rock.

Gold mines that began to develop in the late 1970s in Montana created cuts in the ground

gold, Montana miners relied on deadly cyanide to separate the precious metal from rock – a process that proved difficult to manage. Some mines spilled cyanide because they were careless, McCullough said.

Similar problems were occurring at three open pit mines that started quietly in South Carolina in the 1980s. Those mines also spilled contaminants and today, closed gold mines in Chesterfield and McCormick counties are federal Superfund cleanup sites. A third site in Fairfield County – which drew opposition from community groups – also had environmental issues.

But mines in the Palmetto State generally weren't on the same scale as many of their counterparts in Montana and other areas of the West.

That will change if federal and state regulators issue environmental permits for a new industrial-scale gold mine in Lancaster County. At 2,612 acres of land involved in the operation, the South Carolina mine would be virtually the same size as the still-operating Golden Sunlight mine, near Whitehall, Mont., and bigger than closed mines in Montana and South Carolina.

Romarco Minerals' foray into South Carolina is being watched by other mining companies aware that gold still exists in a slate belt mined long ago from Virginia to Georgia. Key questions are how difficult it will be to get environmental permits and whether gold prices remain high enough to warrant more mines.

Romarco received good news last week when the S.C. Department of Health and Environmental Control issued a water quality permit and major environmental groups dropped their opposition to the mine after Romarco agreed to protect land for an endangered species. The company still needs a federal wetlands permit and a state mining permit.

Jim Arnold, a senior vice-president with Romarco, said his company is aware of Montana's problems and is committed to doing a better job in South Carolina.

"There's not going to be any toxic legacy," Arnold said. "We have learned a lot. We've taken a look at the mistakes and made very certain they are not going to happen again."

The company says it will use the latest open-pit techniques when digging for gold. Areas most

diluted before their release to a tailings pond, a reservoir of mining waste. While the company could damage up to 1,100 acres of wetlands, officials say many of the depressions should recover after miners stop pumping groundwater to keep excavation pits dry.

Others question whether open-pit industrial scale gold mining is ever worth the risk, saying no mine can guarantee it won't leak pollution. Montana's experience is proof of that, they say.

"What we've found is that with most mining operations, the predictions they have for the environmental outcomes are way off," said Bruce Farling, who heads Montana Trout Unlimited.

A 2006 consulting report found that 60 percent of the hard rock mines researchers examined in the West had degraded the quality of groundwater and surface water nearby. Most of the mine owners had predicted only low to moderate impacts from their operations, according to the study by consultants in Colorado and Montana.

THREE MINES

Three of the most problematic gold mines in Montana were dug in a national forest west of Butte and next to an Indian reservation in the state's north central region.

Developed in 1989, the Beal Mountain mine near Fairmont extracted 14 tons of gold that, by today's standards, would be worth more than $500 million.

Before opening, mine owner Pegasus Gold hired a spokesman to assure the public that the company would run an efficient and non-polluting business. Pegasus also promised 70 jobs and a $2 million annual payroll. State regulators were so impressed they did not require extensive environmental studies, Trout Unlimited's Farling said.

Within three years of cranking up, however, pollution had leaked from the property. By 1993, selenium, a metal associated with mine waste, began to show up in German Gulch, where an almost pure strain of native cutthroat trout lives.

Tests later found that the creek's fish and water bugs were contaminated with selenium, which can hurt the ability of cutthroat trout to reproduce. German Gulch Creek remains unsuitable for aquatic life and for drinking water, according to a recent state water quality report.

"We're really, really concerned about it," Farling said. "These native cutthroats are 100 percent genetically pure. It's the best population in the watershed, yet they are below this ticking time bomb. Beal Mountain is seeping selenium into the system."

The old Beal mine doesn't look much like the surrounding national forest and high, picturesque mountains of southwest Montana. Much of the site is cleared and dominated by mounds of waste rock that have been grassed over to repel rain, which can cause pollution to spread. Toxin-tinged ponds are scattered around the property. A rickety building has been turned into a makeshift groundwater treatment plant to help keep pollution from spreading.

While the U.S. Forest Service already has spent $13 million on the site, the agency estimates it could take another $39 million to fully restore the land for public use.

"We are stuck – the taxpayers are stuck," said Tony Schoonen, a retired school principal and trout fisherman whose children used to camp along German Gulch Creek. "This will be an ongoing thing to deal with unless you get $40 million to $50 million to haul all that contaminated stuff out of there. It's going to be an unbelievable amount of money."

More than five hours away from Beal, in the Little Rocky Mountains of north central Montana, American Indians are dealing with creeks polluted by two other Pegasus Gold sites, the Zortman and Landusky mines.

Acid drainage from the Zortman and Landusky mines, which leveled surrounding mountains to get gold, has turned some streams orange.

Mine pollution outraged the Gros Ventre and Assiniboine tribes when environmental problems surfaced in the early 1990s. But some tribal members say they now are resigned to living with the legacy of the mines. Members of both tribes are hesitant to drink water from the area, said Ina Nez Perce, who manages environmental issues for both tribes at the Fort Belknap reservation.

"A few years back, when the mines were still running but then started to fall apart, people were mad," she said. "Now, it's more like 'What can you do about it?' I don't know if sadness is the right word, but everyone knows it's not going to be the same or how it was before."

Water quality data show that a nearly two mile section of Swift Gulch Creek, which runs

pollutants include cyanide, arsenic, cadmium, aluminum and iron, each of which can hurt fish and people exposed to elevated levels.

The Montana Department of Environmental Quality reports that this section of the creek isn't suitable for aquatic life or drinking.

GOLDEN SUNLIGHT

During a late summer drive through the rolling pastures his family has owned for generations, 46-year-old Kipp Huckaba pointed out a tailings waste pond just below the Golden Sunlight mine near Whitehall. The pond catches cyanide residue and other contaminants generated by the mine.

Then he nodded toward his house, cradled in a small gulch just downhill.

"We've owned this property, our family has, since the mid-1900s," he said. "It's kind of important to us."

Back at his office, Huckaba said he worries about how a dam break would affect his land and whether the mine could affect his drinking water.

"Water to me is a big issue, and it flows this way. Someday, (the mine) could pollute this whole area down here. Then what?"

Golden Sunlight officials said there's nothing to worry about. Learning from past problems in hard rock mining, company executives said they regularly inspect the dam and rely on a variety of other safe practices to run the 32-year-old gold-digging operation.

The company's cyanide treatment process sharply reduces the toxicity of the material before wastewater is put into the tailings pond, said Mark Thompson, environmental manager at the Golden Sunlight. The Golden Sunlight also has a new, lined tailings waste pond, goes by the international cyanide code, and routinely checks private wells to make sure mine pollution hasn't leaked into drinking water, company officials said.

"We test people's wells that have absolutely no potential for mine impacts," Thompson said. "It's just a service we provide to make people more comfortable with the mine."

Still, past pollution from the mine remains a concern. The site had a series of cyanide spills in the 1980s. At least 10 areas at the Golden Sunlight show increasing or high levels of pollutants, according to 2013 data supplied by the Montana Department of Environmental Quality.

Contaminants in some monitoring wells include metals, nitrate and ammonia, the DEQ reports. Some of the pollution results from acid rock drainage.

As a result of contamination, the mine must regularly pump contaminated groundwater uphill for treatment so that toxins don't spread onto private land. The pumping is expected to be required for generations and after the mine closes.

CYANIDE BAN

Many of Montana's problems with mine pollution resulted from a process that emerged in the late 1970s and is still used today in Nevada which produces about three-quarters of the gold in the country.

That process, known as heap leaching, revolutionized the gold-mining industry by making it easier to pull microscopic amounts of gold from ore buried deep beneath the surface. That meant mining companies were able to expand sharply the size of their gold-digging operations by going after low-grade ore. In many cases, companies reopened at small gold mining sites.

Heap leaching involves sprinkling cyanide onto ore, after the rock has been crushed and piled on the ground. Cyanide washing through the ore causes even the smallest particles of gold to separate from the rock. The gold is then captured for eventual processing into bullion.

The heap leaching process, however, has a downside, particularly in areas with more rainfall than arid Nevada. Precipitation makes it more likely cyanide will wash away from the processing area and into the environment. And cyanide that spills can be deadly to wildlife.

So in 1998, the citizens of Montana voted to ban cyanide at open-pit gold mines – a vote that stands today and has effectively stopped the expansion of large gold strip mines in the state. South Carolina has no such law.

"I don't know that we'll have any more open (gold) pits in Montana," said Jim Jensen, an environmentalist who engineered the campaign to ban cyanide at the big mines. "We have

After the vote, the Golden Sunlight stayed open because the ban did not affect existing open-pit gold mines. The mine recently received state permission for a modest expansion, allowing it to stay open until at least 2017.

Neither the Golden Sunlight nor the proposed proposed Haile Gold site in South Carolina relies on outdoor heap-leaching, but they still will use cyanide in a process that applies the material in tanks, inside milling facilities. Cyanide is far more efficient than other chemicals at separating gold from rock, many miners say.

While safer, the tank process doesn't reduce all chances a spill could occur – and cyanide makes it possible for companies such as the Golden Sunlight and the Haile mines to dig up massive amounts of sulfide-rich rock that can release acid to the environment when exposed to air and water. Many mines, including the Golden Sunlight in Montana and the Haile mine, have that type of rock.

Like the Golden Sunlight, the Haile mine will have a tailings waste pond that critics say could be a problem if not maintained.

Not all of the environmental issues surrounding gold mining in Montana have resulted from open pit gold extraction, the method that grew popular in the 1980s.

Montana has about 300 other places where historic mining for gold, silver and copper has either polluted the environment or created safety hazards that regulators say must be addressed. All told, the state has more than 3,000 abandoned hard rock mining sites. Some of those are old shaft mines, copper pits or placer mines, the latter of which pull gold from stream beds.

Contamination from abandoned mines has impaired 2,100 miles of rivers in Montana, regulators say.

At least 11 of the 16 federally listed Superfund sites in Montana also are tied to hard rock mining or metals smelting, according to records from the U.S. Environmental Protection Agency.

Mine-related wastes are a major reason for an ongoing, $1.3 billion Superfund cleanup along a 120-mile stretch of bottom land between Butte and Missoula. The area includes Anaconda,

McCullough said one of the most important lessons the Department of Environmental Quality has learned from its struggle with mining pollution is to make sure companies leave enough money to close and clean up sites if they abandon a mine. He also said keeping mining areas dry is vital to prevent leaking contaminants.

“A lot of this has been economic pain because we didn’t have sufficient resources in place to deal with the problems,” he said. “Plus, there is some professional embarrassment about not getting it right the first time.”

Industrial-scale gold mines in SC

Brewer mine, Chesterfield County. Operated from 1987-95. Encompassed 230 acres. Produced 6 tons of gold. Listed as federal Superfund site for cleanup because of metals contamination. The owner abandoned site in 1999.

Kennecott mine, Fairfield County. Operated from 1987-99. Encompassed 900 acres. Produced 45 tons of gold. Being cleaned up by site owner. In 1988, 56 birds died after landing on a toxic pond.

Barite Hill mine, McCormick County. Operated from 1989-94. Encompassed 135 acres. Produced 1 ton of gold. Listed as federal Superfund site for cleanup because of metals contamination. Owner filed for bankruptcy.

Haile mine, Lancaster County. Proposal to reopen and expand a mine near Kershaw for 15 years. Small-scale mining at the site dates to 1827. An open pit mine was operated at the site in the 1980s and early

1990s. The new, working mine would encompass 2,612 acres. Projected to produce up to 60 tons of gold. Mine would affect up to 1,100 acres of wetlands, but owner Romarco Minerals says it will use latest pollution control techniques.

Selected industrial-scale gold mines in Montana

Beal Mountain mine, Fairmont. Operated from 1989-98. Encompassed 429 acres. Produced 14 tons of gold. Being cleaned up by U.S. Forest Service because of metals pollution. Owner filed for bankruptcy.

Zortman and Landusky mines, Harlem. Operated from 1979-98. Encompassed 1,215 acres. Produced about 50 tons of gold. Being cleaned up by U.S. Bureau of Land Management and the state of Montana because of acid drainage and metals pollution. Owner filed for bankruptcy.

Golden Sunlight mine, Whitehall. Operated from 1982-present. Encompasses 2,640 acres. Produces about 3 tons of gold annually. Mine has had cyanide spills and acid drainage issues. Owners are pumping groundwater to keep pollution from spreading.

ABOUT THIS SERIES

Large gold mining companies are looking to the Southeast, and South Carolina in particular, as a source of gold as new mining techniques become available. One Lancaster County mine, in fact, could become the largest on the East Coast. What can South Carolina learn from states with large mines and more experience?

TODAY: Montana's mining legacy

MONDAY: The town that loves the mine

TUES: Gold's cost: pollution and taxpayers

WEDNESDAY: Gold's legacy in SC

ABOUT THE WRITER

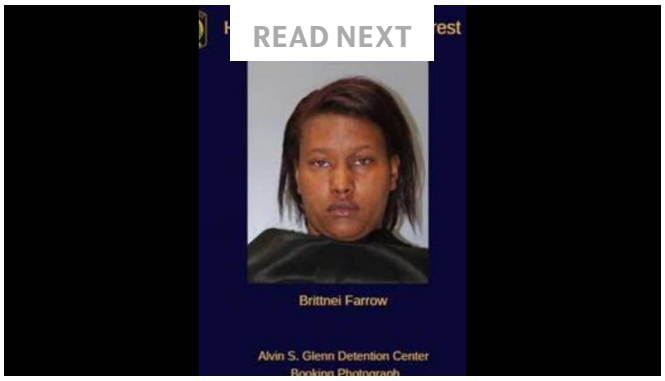
Sammy Fretwell covers environmental issues for The State newspaper. He grew up in Anderson County and graduated from South Carolina's journalism school. He can be reached at

numerous reporting awards and has written about most major environmental matters in South Carolina since coming to The State in 1990.

His work on these stories was funded in part by the Institute for Journalism and Natural Resources, a nonprofit journalism organization.

Comments

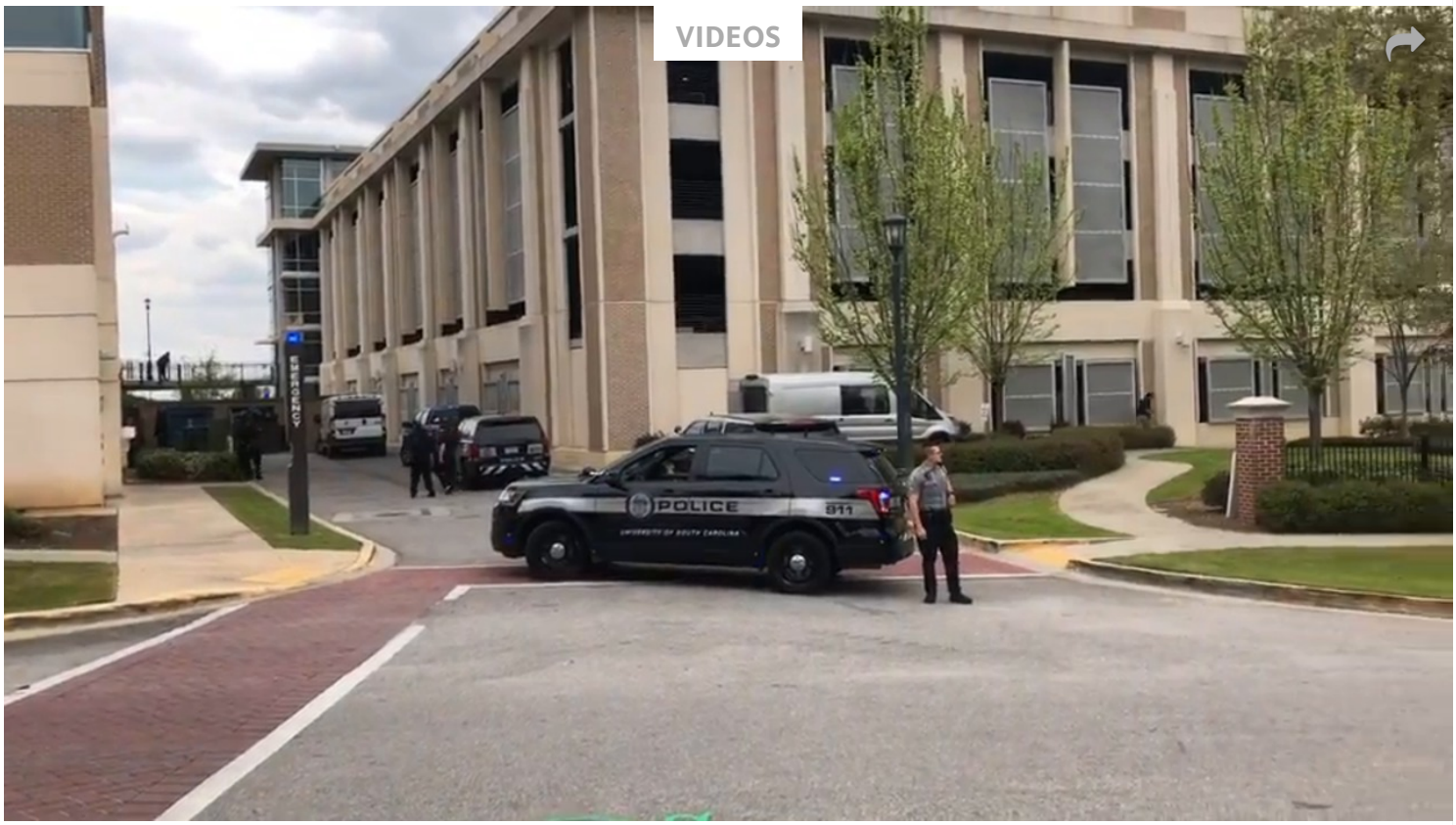
READ NEXT



CRIME & COURTS

Driver charged in hit-and-run of teen bicyclist in Columbia crosswalk

MARCH 27, 2019 12:26 PM



The scene Monday outside closed USC parking garage

Tattooed bank robber gets bond hearing

VIEW MORE VIDEO →

TRENDING STORIES

Fifth-grade girl dies after fight in SC elementary school classroom, police say

MARCH 27, 2019 10:58 AM

Drunk driver sprayed Axe in his mouth to mask the smell of alcohol, SC deputies say

MARCH 25, 2019 12:55 PM

Pray for injured fifth-grader airlifted after school fight, SC school district says

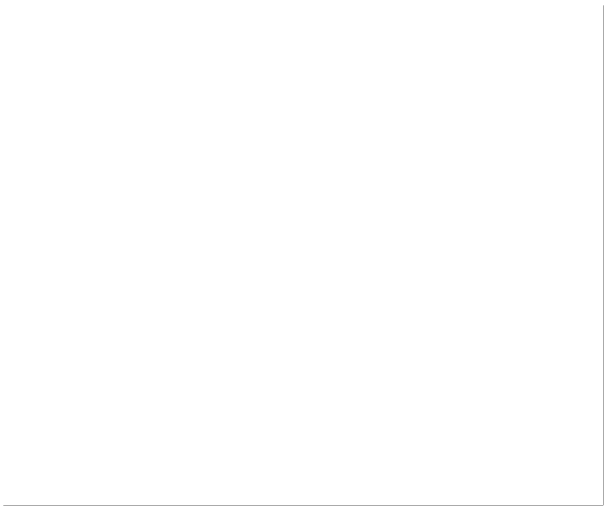
MARCH 26, 2019 07:29 PM

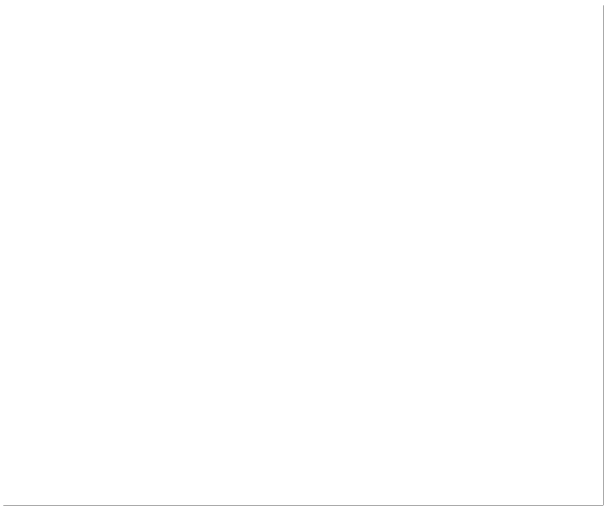
He was bored at a Gamecocks camp. And that showed USC coaches why they wanted him

MARCH 26, 2019 01:29 PM

Former SC pastor arrested on six charges of sex with children

MARCH 27, 2019 08:06 AM





MORE LOCAL

CRIME & COURTS

USC Upstate student from Columbia killed in shooting, coroner says

MARCH 27, 2019 11:25 AM

LOCAL

Knox Abbott Drive business sells for $6 million

MARCH 27, 2019 10:26 AM

CRIME & COURTS

1 injured, suspect on the loose after shooting near Lake Carolina in northeast Richland

MARCH 27, 2019 05:44 AM

CRIME & COURTS

Former SC pastor arrested on six charges of sex with children

MARCH 27, 2019 08:06 AM

CRIME & COURTS

Pack of dogs attacks 76-year-old woman attending funeral at gravesite, SC officials say

MARCH 26, 2019 09:53 PM

LEARN MORE

About Us

Contact Us

Newsletters

News in Education

Archives

ADVERTISING

Information

Place a Classified

Local Deals

Special Sections