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More options for Hattiesburg wastewater treatment?

Haskel Burns, American Staff Writer 6:34 p.m. CDT September 17, 2016



(Photo: Susan Broadbridge/Hattiesburg American)

About nine months ago, Hattiesburg City Council seemed to have pulled the trigger on a possible solution for Hattiesburg's wastewater woes. Council voted 4-1 to go with a land application system to get the city in compliance with permit levels established in August 2015 by the Mississippi Department of Environmental Quality.

Those plans changed last month, with council's decision to pursue a mechanical treatment system rather than land application.

But with the city's south lagoon mostly meeting current permit limits for about a year, officials are pausing to research all wastewater treatment options — including using just the lagoons rather than building a new

system.

"The way the lagoons are operating right now seems to be in substantial compliance with the permit limits, which is a good thing," said Chris Wells, chief of staff at MDEQ. "We have an opportunity here to allow the city to maybe evaluate some options that were not evaluated before.

"The Department of Environmental Quality does not mandate particular technology under the Clean Water Act. What we do is set permit limits based on water quality standards — what's necessary to protect human health and the environment. We put those limits in the permits, and it's up to the permit holder to demonstrate to us how they can intend to comply with that permit."

Although there is no estimated cost for just using the lagoons, that option likely would be far less expensive than the alternatives. Land application was estimated to cost about \$120 million, while the mechanical system was expected to run about \$135 million.

By the numbers

According to studies of the south lagoon, although the site is not 100 percent in compliance, activity at the lagoon has only violated current permit levels six times between August 2015 and June 2016.

"We're in compliance with the major concerns of MDEQ and the ([Environmental Protection Agency](#))," city engineer Lamar Rutland said. "We still have what we consider minor violations that tend to happen that are due to the lagoon system itself. There's nothing wrong with the way we're operating — it's just got to do with what lagoons can achieve."

The majority of the violations involve the percentage of removal of total suspended solids, which failed to hit the minimum of 65 percent on four occasions: October 2015 (8 percent), November 2015 (21 percent), January 2016 (58 percent) and April 2016 (60 percent). The other two current permit violations came in the category of effluent pH, which fell out of the permit range of 6.0-9.0 in September 2015 (9.5) and June 2016 (9.6).

According to documents from Rutland, those violations are considered minor, meaning "in the eyes of MDEQ (they) are of concern but not a great threat to the citizens or the environment."

In addition to current permit levels, the lagoon also had eight instances that violated a consent judgment given to the city by a federal court. That included two violations in percentage of removal of biological oxygen demand, four violations in monthly average of effluent total suspended solids and two violations in maximum weekly average of effluent total suspended solids.

Rutland, who sends in the values monthly to MDEQ, said he couldn't pinpoint an exact date or timeline when officials were aware that the lagoon's current levels might allow for other options.

"It's like anything else — you have to have a break-in period for a short period of time to make sure everything is working properly," Rutland said. "It's probably hard to tell the day that you wake up and say, 'It's up and running' — there was just not all of a sudden a certain day where it happened."

"Before you start approaching it, you want to make sure it works. I would think that within probably six months, we're saying that it works, and then we're having meetings with MDEQ and (Gulf Restoration Network), and that was brought up in that meeting."

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Mayor Johnny DuPree referred all applicants to build a wastewater treatment plant to the City Council. City Council President Carter Carroll also said the levels needed to be monitored for a certain period of time before determining the lagoons could be used on their own.

"It wouldn't have done us any good to go to the court the first month or two that we were in compliance and say, 'Look, we're in compliance,'" he said. "We needed a track record, and now we have a track record of that."

It's been a slow crawl back to compliance for the lagoon, which was severely damaged when USA Yeast was allowed to dump untreated waste effluent into its waters. The problem was compounded after [Hurricane Katrina](#) hit in 2005, when power to the aerators was knocked out for nearly two weeks.

The volume of high-strength industrial waste eventually led to an order from MDEQ, fining the city for violating effluent limits in the lagoon's discharge. The order fined the city \$32,500 for the violations and set a deadline for the city to have identified a wastewater solution that would bring it in compliance.

Between October 2013 and May 2014, the lagoon hit seven minor violations and 11 major violations. Those major violations — which are described as being of great concern to MDEQ and capable of harm to the environment — included mostly effluent biological oxygen demand levels.

In summer 2014, repairs were made to the lagoon's aerators, which documents state restored aeration to more than 85 percent. From September 2014 to July 2015, the lagoon hit only three minor violations under an interim permit that had been established.

What's next?

On Aug. 18, a meeting was held with officials from the city, MDEQ and GRN to discuss the lagoon's compliance and an update on possibilities for the city's wastewater treatment.

According to a memo issued to DuPree from MDEQ, officials noted during that meeting that the south lagoon has demonstrated "substantial compliance" with [National Pollutant Discharge Elimination System](#) discharge limitations.

"As a result of the facility's performance, and guarantees from the City to develop procedures assuring future operation of the facility to maintain optimal performance, all parties agreed to enter negotiations for a revised compliance schedule," the memo states. "The revised schedule would account for, among other things, a Leaf River stream study that is currently being conducted, the results of which could affect the design basis for a long-term engineering solution for the City to maintain NPDES Permit compliance."



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[What's next for Hattiesburg's mechanical system?](#)

[\(http://www.hattiesburgamerican.com/story/news/local/hattiesburg/2016/08/10/whats-next-hattiesburgs-mechanical-system/88403698/\)](http://www.hattiesburgamerican.com/story/news/local/hattiesburg/2016/08/10/whats-next-hattiesburgs-mechanical-system/88403698/)

Prior to the meeting, the city had accrued a penalty of \$163,500 — racked up in \$1,500-per-day fines — for failing to meet construction deadlines on a new wastewater system. After discussing the matter during the meeting, MDEQ officials agreed to forego collection of any additional penalties that might accrue subsequent to Aug. 18 for a period of 60 days "pending successful negotiation of the revised compliance schedule, the drafting of an amendment to the Order, and any necessary court pleadings."

"We started calculating what those stipulated penalties are, but we have not yet collected those stipulated penalties," Wells said. "When we met ... we made no formal agreements, but everybody understood that the performance of the lagoons since last August kind of changes the landscape a little bit."

"So we all agreed to push the pause button, if you will, on those stipulated penalties as of Aug. 18. But if we're going to negotiate a new compliance schedule, which is what we're talking about, we don't want to linger on it — we don't want it to drag out. As long as we all work in good faith and work toward whatever amended order we're going to enter, then we won't collect any stipulated penalties after Aug. 18."

With that break in the action, Hattiesburg officials will now wait on updated requirements from MDEQ before definitively going forward with a wastewater

decision.

"It all depends upon what those future requirements are going to be — the numbers that we have to make," Carroll said. "As long as it has to do with (biological oxygen demand) and things like that, our lagoons can work. When they start talking about having to restrict the amount of nitrogen or the amount of phosphorus or something like that which goes into the river, that takes mechanical to eliminate those sources. Just aeration can't do that.

"So it's going to totally depend on what those future requirements are that we'll have to put in place."

Rutland said he wasn't yet sure whether the lagoons will be able to be used as Hattiesburg's sole means of wastewater treatment.

"And the reason I say that is, if the lagoons continue to meet the requirements that are put on us by MDEQ and the EPA, then, yes, this is a solution," he said. "But if their requirements for what we're emptying into the Leaf River ever change and become more stringent, then there's a possibility that we're going to have to do something else.

"We're pushing the limits at the lagoons right now, as far as what they can treat. If (the limits) ever become tighter, we're going to have to consider something else. Right now, we can meet the requirements that are being placed on us, but we are really pushing the limits of the lagoons to do that."



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Barker: Explore all wastewater options

(<http://www.hattiesburgamerican.com/story/news/local/hattiesburg/2016/08/17/barker-explore-all-wastewater-options/88901074/>)

Rod Dickerson, engineer with Dickerson Consultants in Homer, Louisiana, stopped by a recent City Council meeting to discuss an option that may help the lagoons: a patent-pending microbiological technology that he said would save the city a substantial amount of money on wastewater treatment.

"He talked about putting the (microbes) in the lagoon, and it will help eat the sludge," Carroll said. "It will also help eliminate some of our power usage to where we could save some money on aeration because we could cut back on some of the aerators or whatever.

"I don't know whether that's true or not, but it's worth looking into."

For MDEQ's part, all that matters is that the permit limits are met, whether it comes from the lagoons themselves or from a new system.

"Not in this case, or in any other case, did we ever mandate specific technology," Wells said. "If, from an engineering standpoint, (the city) can't demonstrate to us that the lagoons can consistently comply in the future, there may need to be some things done where they can't just keep operating the lagoons the way they've been operating them in the past.

"But MDEQ never mandated that the city build a mechanical plant, we never mandated that they build a land application system, and we never mandated that they do anything in particular. If they can come in here and demonstrate to us ... that some upgrades to the lagoon system will make them workable for the future, then that's something that we would certainly have to consider approving."

Wastewater timeline

2001: A contract signed by Hattiesburg officials agreed to take USA Yeast's untreated waste effluent for no extra fee. The company had been allowed for almost a decade to discharge up to 800,000 gallons per day of untreated waste into the city's south lagoon.

2005: In the wake of Hurricane Katrina, the south lagoon's aerators were without power for nearly two weeks. According to a report on the lagoon system, the lack of aeration, coupled with the untreated waste and a large buildup of sludge, began the significant odor problems for the lagoon.

2011: The volume of high-strength industrial waste eventually led to an order from the Mississippi Department of Environmental Quality, fining the city for violating effluent limits in the lagoon's discharge. The order fined the city \$32,500 for the violations and set a deadline for the city to have identified a wastewater solution that will bring it in compliance. The order set May 31 as a deadline for the city to "decide upon an engineering solution for ... effluent limit compliance, whether that be the construction of a new mechanical treatment plant, the retrofitting of the existing lagoon system, or other options as recommended."

May 2013: Council voted to pursue a land-application process to disperse treated wastewater over a more conventional mechanical system.

November 2013: Council unanimously voted to begin contract negotiations with a newly created company, Hattiesburg-based Groundworx, LLC, to design, create and operate the land-application system.

January 2014: Council voted 4-1 to enter into a contract with Groundworx, an agreement signed by Mayor Johnny DuPree on Jan. 21. The contract called for the company to issue up to \$142 million in bonds for the design and construction of the system. Over 30 years, the city would provide the money to pay off those bonds. ✕

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February 2014: To meet those obligations, council voted 3-2 to amend an ordinance that would lead to sharp hikes — 150 percent in the first year alone — in sewage rate charges that comprise a portion of residents' water bills. Council members voted the ordinance, saying the increases were too much for too many residents to handle. **TOUCHDOWN! (HTTP://OFFERS.HATTIESBURGAMERICAN.COM/SPECIAL-OFFER?GPS_SOURCE=BEXITSEPTEMBER&UTM_MEDIUM=OVERLAY&UTM_SOURCE=BOUNCE-EXCHANGEQUIN_CAMPAIGN-SEPTEMBER&utm_content=navbar)**

June 2014: Groundworx sued the city in Forrest County Chancery Court, claiming breach of contract.

August 2014: Council voted to allow DuPree to terminate the Groundworx agreement.

January 2015: Chancery Court Judge M. Ronald Doleac ruled that the contract between the city and Groundworx violated due process clauses in both the federal and state constitutions. Doleac ruled that the agreement that would have built the wastewater system was declared unconstitutional, making moot the \$6 million breach of contract suit against the city.

June 2015: Council voted to instruct its consultant, Neel-Schaffer Inc., to officially work up a request for land-application systems that would take partially-treated wastewater and spray it over acres and acres of fields. This move came after the city conducted an engineering evaluation while looking into a mechanical option.

September 2015: \$1,500-per-day fines began for the city for missing a deadline to have plans submitted for a new wastewater system.

December 2015: City Council voted 4-1 to implement a land-application system, which is expected to run in the neighborhood of \$120 million. Ward 2 Councilwoman Deborah Delgado provided the sole vote against the measure.

January 2016: The daily fines stopped after Hattiesburg officials submitted plans for the land-based system to the MDEQ. Officials from Groundworx withdrew the company's applications for conditional use permits for spray fields on Tatum Camp Road, and placed responsibility to the city for construction and operation of the system.

April 2016: City Council members vote to raise water and sewer rates by about 55 percent to help pay for a new wastewater system.

August 2016: City Council votes to switch to a mechanical treatment system after deciding land application was no longer a viable option.

August 2016: Fines accrued by the city for failing to meet construction deadlines on a new system are put to a halt for 60 days, dependent on compliance.

September 2016: After a meeting with MDEQ — and revealing that the city's lagoons are mostly in compliance with current permit levels — council members reduce the city's water and sewer rates while city officials wait on new permit levels from MDEQ.

South lagoon violations under current permit limits

From August 2015-June 2016

- Sept. 2015:** Effluent pH was 9.5 (should be between 6.0-9.0)
- Oct. 2015:** Removal of effluent total suspended solids was 8 percent (should be a minimum of 65 percent)
- Nov. 2015:** Removal of effluent total suspended solids was 21 percent
- Jan. 2016:** Removal of effluent total suspended solids was 58 percent
- April 2016:** Removal of effluent total suspended solids was 60 percent
- June 2016:** Effluent pH was 9.6

Source: Gulf Restoration Network and city engineer Lamar Rutland

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