



South Carolina  
**Office of Regulatory Staff**

# THE WATER WELLSPRING

*A Flowing Source of Information for Water and Wastewater Utilities*

*Summer 2017*

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## **Busy Hurricane Season Expected**

The National Oceanic Atmospheric Administration (NOAA) forecasters are predicting a busier-than-normal hurricane season. Hurricane season begins June 1 and ends November 30 each year.

Gerry Bell, Ph.D., lead seasonal hurricane forecaster with NOAA's Climate Prediction Center, states that he expects a weak or non-existent El Nino. ("Above-Normal Atlantic hurricane season," 2017). El Nino is defined by the National Ocean Service as "large-scale ocean-atmosphere climate interaction linked to a periodic warming in sea surface temperatures across the central and east-central Equatorial Pacific." ("What are El Nino and La Nina?" 2016). According to NOAA, strong El Ninos and wind shear typically suppress development of Atlantic hurricanes, so the prediction for weak conditions points to more hurricane activity this year.

The NOAA is offering new programs this hurricane season, including new forecast and communication tools. Forecasters will issue Storm Surge Watches and Warnings, in addition to issuing advisories, watches, and warnings for disturbances that aren't yet a tropical cyclone but still threaten land with tropical storm or hurricane conditions within 48 hours of landfall. The NOAA's website added a new experimental visualization tool so the public can easily see when damaging winds are forecast to reach their community. Also, beginning this year, the public will be able to click on the hurricane track cone graphic and see how far outside of the cone hurricane and tropical-storm-force winds extend, which can be hundreds of miles.

The NOAA will update this outlook in early August, just prior to the peak of the season.

Cite:

Above-normal Atlantic hurricane season is most likely this year. (2017, May 25). Retrieved June 14, 2017, from <http://www.noaa.gov>

What are El Niño and La Niña? (2016, June 28). Retrieved June 14, 2017, from <http://oceanservice.noaa.gov/facts/ninonina.html>

# Tank and Lagoon Covers Aid Environment and May Reduce Operation Costs

Odor control, algae growth, and worker safety at the worksite are three of many concerns for water and wastewater utilities. Odors emanating from a wastewater treatment facility may result in complaints from nearby neighbors and businesses built in the vicinity of the plant. Algae growth can be found in surface water treated for drinking or in wastewater treatment plants in conditions with adequate nutrients (mostly phosphorus but nitrogen is important too), light levels, pH, and temperature. Algae, if not properly removed, may result in a bad taste and odor of drinking water and customer complaints.

Worker safety should be first priority for all utilities. An open tank to gather water samples or check operations is an invitation for an employee accident. Tank and lagoon covers are options to reduce odors and algae and provide an additional safety measure for employees. Many companies -- such as Geomembrane Technologies, Inc. (GTI) -- design, fabricate, and install tank and lagoon covers for water and wastewater applications.

GTI works with national and international water and wastewater systems to offer covers, which may last 20+ years, making them well worth the investment. Various uses of tank and lagoon covers include:

- Control foul odors
- Lower operational costs
- Collect and store biogas
- Reduce greenhouse gases
- Block sunlight to control algae growth
- Increase workplace safety



Lagoon Gas Collection Cover (courtesy of GTI)

The covers are gastight, reliably containing odors from wastewater treatment. In water treatment applications, the covers block sunlight to control algae growth and lower chemical costs and disinfectant byproducts. These covers come with a guardrail system option to enhance workplace safety.

GTI also offers covers for biogas collection from anaerobic digestion, as well as biogas control systems to safely deliver collected biogas into a pipeline. Biogas can be used to generate process heat or electricity, helping to offset energy costs and reduce greenhouse gases. GTI also supplies gasholders to safely store excess biogas for later use.



Tank Gas Collection Cover



Structurally Supported Cover

# Drone Use Intersects with Water Utilities

*By John Doughty, Vice President, RETTEW*

For water and wastewater operators, a drone, or unmanned aerial vehicle, can make your job easier. Drones collect information that can be used in updating facility designs, overseeing construction, or even updating existing facility plans. There are some challenges to using them, but working with a surveying firm that uses drones can save your operation much time and energy, and increase efficiency.

Drones provide data that is used in updating maps and site plans. Because of the drone's ability to quickly collect large quantities of measurements, photos, and video, the cost of updating these plans is lower than traditional ground surveys or aerial photos. The information gathered can help operators guide future plans during pre-construction by gathering precise measurements of exterior facilities and site layouts. It can also be useful during and after construction, collecting data on volume and completing as-built records. In general, there are two main types of drones you can use: fixed wing or multi-rotor. The fixed wing has cameras suited for mapping and can be more efficient for creating a contour map. It also can take longer flights. If you're looking for high-quality photos and shorter flights, a multi-rotor drone is the better choice. Drones bring many benefits:

- They feature a variety of camera systems for aerial photos and documentation.
- They reduce the need for manpower on surveys or construction oversight inspections.
- They decrease risk for employees by providing visuals in hard-to-reach places or high-risk spots. They provide highly accurate data for 3D modeling or comprehensive mapping.

A trained drone team can take all those plans, and the institutional knowledge of your people, from fragmented to integrated. Using photos and video taken by drones, and working with a qualified survey group, you can get a digital representation of your infrastructure. You can view progress of construction as it is happening. You can inspect parts of your facility that are dangerous or hard to get to. You can see a concept plan attached to your existing facility plans. Along with the benefits of working with drones come some challenges as well, such as:

- A licensed pilot is required to operate a drone for commercial purposes.
- A company must be granted permission from the Federal Aviation Administration to use a drone for commercial (instead of personal) use.
- A drone cannot be flown over people who are not involved in the project, unless they are in enclosed vehicles or buildings.
- Flying a drone in urban areas is challenging because of radio interference, aerial obstacles, pedestrians, and traffic. There are also increased legal restrictions.
- A drone is best suited for collecting data from outdoor facilities or infrastructure, as capturing visuals of indoor water facilities can be complicated.

If you plan to investigate how a drone can help your operations, look for a reputable surveying firm that:

- Is insured for drone operations
- Has one or more licensed pilots on staff
- Has a versatile drone program to give you more options
- Can demonstrate experience in taking data gathered by a drone and making it useful for water or wastewater operators

As you work to meet regulations, expand operations, or update processes, consider how a drone can help.

*John Doughty is vice president of land development and surveying at RETTEW. He has more than 35 years of experience as a survey director, senior project manager, and geospatial data coordinator. He oversees the day-to-day operations of his groups as they provide services such as topographic surveys, land development plans, and as-built surveys. Mr. Doughty specializes in*

*developing environmentally sensitive land use projects and has been instrumental in keeping RETTEW at the forefront of survey technology, including remote sensing, terrestrial photogrammetry, and high-definition scanning.*

## **What to Expect on an ORS Audit Examination**

When a utility files for a rate increase, the ORS Audit Department is charged with performing a regulatory examination of the company's application. This process entails three basic steps:

- 1) Verifying that the operating experience and rate base reported in the company's application are supported by the company's accounting books and records for the test year. The ORS must have access to the company's general ledger and trial balance, and the company should provide a reconciliation or map from the per-book application numbers to the general ledger.
- 2) Testing the underlying transactions in the books and records for the test period to ensure that the transactions are adequately supported, had a stated business purpose, were allowable for ratemaking purposes, and were properly recorded. The ORS tests those transactions by sampling and scanning various expense and plant accounts and requesting supporting documentation such as invoices, contracts, and supporting spreadsheets. The ORS verifies the company's roll-forward of plant-in-service from the Public Service Commission of SC's (PSC) order in the company's most recent rate application.
- 3) Reviewing, proposing, and making adjustments to revenues, expenditures, and capital investments to normalize the company's operating experience and rate base in accordance with generally accepted regulatory principles and prior PSC orders. If a company proposes various adjustments in its application, detailed supporting documentation is required to verify each adjustment.

The ORS conducts an orientation meeting or conference call with the company to discuss the filing and hearing dates set by the PSC, internal deadlines for the ORS Audit Department, contact personnel, data requests, and other items. Good communication and timely exchange of information between all parties is important throughout the entire examination process.

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## **THE WATER WELLSPRING**

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