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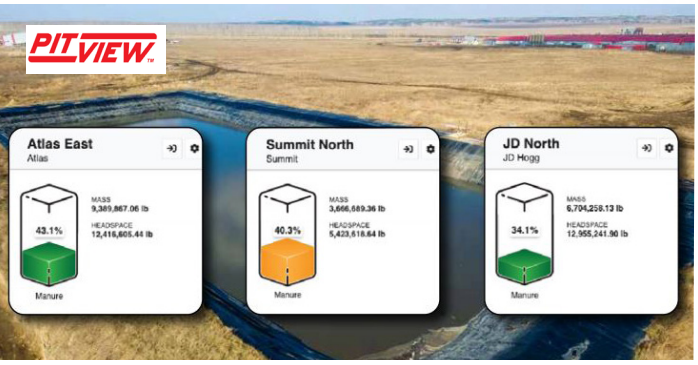
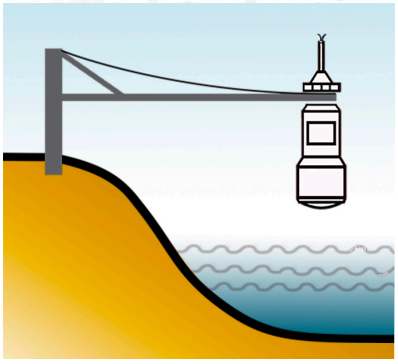
Whitepaper

PIT & LAGOON MONITORING

Costly fines come from breaking regulations for waste management

How much poop does a pig produce in a day? Aside from being one of the nastiest jobs on the farm, measuring animal waste is potentially one of the costliest dangers of managing livestock. In an industry where margins are slim to begin with, the price of non-compliance with regulations for waste management can put an operation in jeopardy. Pigs poop 11 pounds a day...by the way. We won't even get into dairy cattle waste.





ANIMAL WASTE LAGOON BREACH IS NOT AN OPTION

“The thought of the fines and the publicity that could come from improper waste management is my worst nightmare,” said an agriculture operations manager. “We simply cannot afford to experience a breach. Monitoring and prevention are really my only choice. I could lose my business with a single breach.”

When animal waste lagoons experience a breach, major implications can occur to the environment. Fines and costs skyrocket.

In one case, a lagoon ruptured due to weather. Failure to monitor levels resulted in 25 million gallons of liquid swine waste to enter a nearby river and its estuary. It affected miles of river with fish kills and algae blooms. It was reported that the state’s division of environmental management discussed fining the farm $10,000 for every violation found.

MEASURING AND MONITORING LAGOONS KEY TO PREVENTION

Government regulations on the management of animal waste are stringent. While most in the industry are vigilant with animal waste management in pits and waste lagoons, the challenges of weather and other factors make oversight a challenge. The cost of a mistake could put an operation at severe risk and even create bankruptcy.

AUTOMATED WASTE MEASUREMENT, ALERT SYSTEM

The case for applying technology is a solid one. Animal waste automation makes it easier to comply with regulations. Sensors can alert agriculture managers to high levels of animal waste in a lagoon. Alerts are sent to staff via a text or email. You will know when it is time to empty your pit allowing for a proactive approach in scheduling equipment and manpower. This reduces the risk of spills or breeches. Exportable measurement history streamlines report preparation.

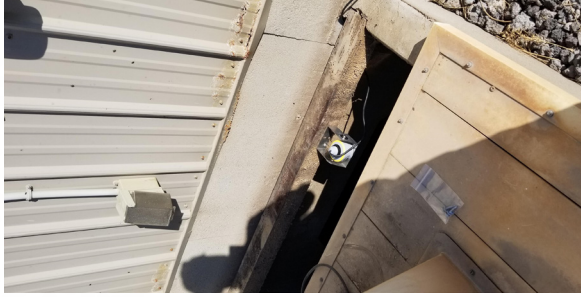
BOOSTING OVERSIGHT WHILE REDUCING LABOR

By employing BinMaster sensors and software, staff can reduce trips to the lagoon to monitor levels. In fact, more oversight of lagoon levels can be encouraged because reports are easily found on any PC or cloud device.

WHAT’S THE BEST WASTE MONITORING EQUIPMENT FOR MY LAGOON?

A BinMaster radar-level sensor performs reliably in challenging environments thanks to a rugged enclosure impervious to dust and weather extremes. Radar measures more consistently than ultrasonic sensors with very high accuracy. If the lagoon gets choppy or wind bounces the sensor, software will average measurements. Solar-powered options are ideal if there is no electrical service available at the lagoon.

The weather-tight non-contact radar level sensor measures pit and lagoon livestock waste at distances up to 26 feet. It works reliably in turbulence or foam. A flood-proof


IP66/68 enclosure ensures maintenance-free, continuous operation. For lagoons, posts are mounted on either side of the lagoon with the sensor mounted on a bracket attached to taut wires. Another lagoon mounting option is to suspend the sensor on a boom arm attached to a post.

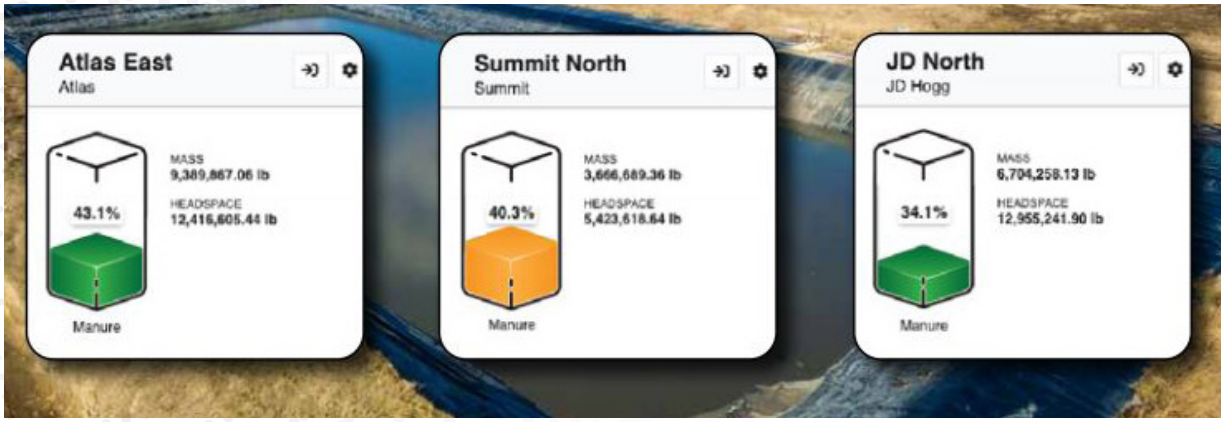
Q: HOW DO I GET A REPORT OF ANIMAL WASTE LEVELS IN MY LAGOON? A: PITVIEW

Taking the level history and making it useful is the next step. Data from the sensor is processed in the cloud and accessed using a phone, tablet, or computer with an internet connection. The data is available through a platform called PitView® by BinMaster.

Viewing the PitView report, each site and sensor location are uniquely named, with the software able to incorporate multiple sites. Time intervals for measurement frequency and alert conditions are set up in the software. Reports can be run on demand for specified date ranges. Staff on or off the farm view the same data to make decision-making faster and easier.

If an alarm is triggered, designated staff automatically receive a text or email allowing them to intervene before a breech occurs.

PitView® with radar-level sensors let you plan application sites and schedule trucks in advance. You'll know how much waste is available, so you can arrange for the equipment and manpower to manage application sites. PitView can also be added to BinMaster's FeedView® cloud application to allow you to monitor levels in feed bins, pits, and lagoons, all in one easy-to-use program.



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BINMASTER

Sensors and software for YOUR industry

Industry	Bulk Material	Sensors	Software	Applications
 Agriculture Farming Livestock	Grain Flour Beans Fertilizer Seed Liquids Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D sensors Ultrasonic Flow detector	BinCloud BinView AgriView Binventory FeedView 3D Multivision	Prevent overflows Process control Inventory management Remote monitoring Monitor piles Flow detection Bin aeration Dust detection Aeration Ag Chemical Storage
 Bioenergy	Corn DDG Biomass Wood pellets Wood fiber Forest residue Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic Flow detector	BinCloud BinView Binventory 3D Multivision ResinView	Prevent overflows and outages Process control Inventory management Remote monitoring Flow detection Slurry tank detection Measure DDGS
 Cement	Sand Gravel Clinker Rock Powder Bins, clinker silos, tanks, piles, domes, chutes, crushers	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Plugged chute detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Prevent overflows and outages Process control Inventory management Remote monitoring Monitor piles and bunkers Inventory domes Plugged chutes Measure crusher levels ESPs or clinker silos Prevent conveyor overloads Silo aeration
 Food processing	Brewing Foodstuffs Solids Slurries So much more... Silos, mixers, batching tanks, conveyors, pipelines	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView AgriView Binventory 3D Multivision	Prevent overflows Inventory management Remote monitoring and VMI Process control Sanitary level measurement Detect levels in mix or slurry tank Detect levels on conveyors Flow detection Silo aeration
 Mining	Lump coal Ores Aggregates Fine alumina powder Silos, crushers, conveyors, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Inventory management Monitor piles Prevent overfills or outages Detecting plugged chutes Measuring inventory in domes Level measure in crushers or bins Prevent overloading Process tanks Remote monitoring Silo aeration Dust detection
 Plastics	Resins Flakes Powders Granules Regrind Silos, bins, containers, hoppers, tanks	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView ResinView Binventory 3D Multivision	Prevent silo overfill Eliminate outages Inventory management Remote monitoring Vendor managed inventory Flow detection Bin Aeration Dust Detection


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