



Application Case Study

Effluent Pond Monitoring

The Application

Effluent is defined as any pollutant that exits from a process into either the environment or a holding area. Effluent can be anything from consumer wastewater to industrial by-products. The one thing that is consistent about effluent is that it is never consistent! By its nature, it is constantly changing in content and composition.

Effluent is pollution, which must be collected into a controlled area for proper processing to avoid contamination of the environment. It is important that these holding areas (tanks, sump pits, ponds, etc.) be monitored to avoid spills or leaks. This requires a good, reliable level transmitter.



Because effluent is always changing, level detection can be difficult for contact-type devices that rely on the electrical properties of the liquid. That leads to non-contact technologies. However, effluent will typically have varying levels of foam and can often have fog and condensation present. This causes problems for most ultrasonic transmitters, and in some cases even radar can be confused by foam.

The Solution

Many industrial sites have effluent ponds or holding tanks. One chemical plant has an outdoor effluent pond that is uncovered. All of the plant drains – rainwater and washdown – empty into this pond. Since it is outdoors and uncovered, the level in the pond must be closely monitored. If it overflows, the spill will go directly into the ground.

Because of the mixtures of different chemicals, this pond frequently has some foam on it. The foam can be thick or thin, dense or airy. Other ultrasonics were tried, but the foam blocked or confused the signal. Because of the pond location, there is frequently fog and condensation present. This completely blocks the signal of other products.

The echOsonix U71/BDP is designed for conditions of this nature. It reads through foam by using a lower frequency, higher power sensing signal. This allows the sound to penetrate through the foam and return an echo from the liquid beneath. Fog, condensation and dense foam are compensated with adaptable gain that adjusts the sensitivity of the device according to the current conditions.



The Results

The U71/BDP was placed in service at the beginning of winter. The warm effluent being dumped during cold, damp weather created a great deal of fog, condensation and even ice. The following spring also produced much fog. Summer is now here and the U71/BDP is still operating seamlessly. It has never lost signal and the pond has never overflowed since it has been in service.

Ordering Information

Electronics Model **U71-CL7J-00-30**
Integral 110VAC/24VDC Line-powered transmitter
2 x SPDT Relays adjustable over entire range
Explosion-proof electronics housing

Sensor Model **BDP-3A-00-0**
30 kHz Transducer for integral unit
3" NPT process connection