

## UV Pure® Case Study

Application:	Industrial/Commercial Projects
Solution:	Hallett® System for Wastewater
Location:	Asheboro, North Carolina



Pure, safe water.  
*Always.*

### Aquapoint's AquaCell and Hallett® H-30's Perfect Partners on Zooland Project

Aquapoint is a valued UV Pure® engineering solutions partner, headquartered in New Bedford Massachusetts. Aquapoint custom designs decentralized wastewater treatment systems to meet the discharge standards required by their clients, using selected treatment processes for their simplicity, reliability and versatility.

Zooland is a resort/campground site in the Asheboro North Carolina area. They have a relatively high strength waste stream (800 mg/l BOD, 160 mg/l TKN) and they are permitted for a surface discharge meaning they had to achieve very high effluent standards (< 10 mg/l BOD and TSS, < 0.5 mg/l ammonia, < 200 mpn/fecal, etc...). This is an existing campground but a new treatment plant. Aquapoint was not sure of the exact situation but determined they must have either been forced to remedy a failing system or septic system. One way or another they had a need for a new wastewater plant. Obviously cost is always an issue because private clients especially, don't want to spend money on wastewater.

The system consists of a primary settling/sludge storage tank and flow equalization tank to remove heavy solids and debris plus pace water to the plant. AquaCELL is the trade name of what they call a moving bed biofilm reactor (MBBR). It is a fixed film process where they submerge hundreds of thousands of pieces of HDPE media with significant protected internal surface area. A bacterium grows on the surface area and eats the organics and nutrients in the wastewater as the basins are aerated and the media is randomly mixed. This ensures contact of the substrate (waste or food) and the biofilm (bacteria on media). After biological treatment where BOD and ammonia are removed, the water flows to a secondary clarifier to settle secondary solids. After the clarifier the effluent is < 20 mg/l BOD and TSS so they then needed a sand filter (physical barrier filter) to polish down to < 10 mg/l BOD and TSS. The sand filter is a pressure fed filter so they can then use the same pressure to feed the pressure of the UV Pure®'s H-30 Hallett® Units. In this case they used two Hallett®s in parallel. After disinfection the water goes to a re-aeration tank to make sure they drive up the dissolved oxygen before they discharge to the stream.



Josh Lindell, Executive Vice President, Sales and Marketing, Aquapoint explained that they have employed this sand filter to UV Pure®'s pressure system on about 5-6 projects and the data from the field is always promising. "The reality," says Lindell, "is that standards are becoming more and more stringent. That means we need filtration and UV in conjunction with one another after our biological processes. The sand filter and Hallett® system is a perfect match because we don't need a second lift station (filter feed pumps will also pressurize UV). Plus we are looking for easy to operate systems and the self-cleaning nature of the Hallett® design is a perfect fit."

The solution, Lindell explained was designed by an engineer who frequently works with Aquapoint and there are two or three similar upcoming projects that will use the combination of the sand filter and UV design with the Hallett® systems after a biological design on his applications.

The Plant went operational late in March and has been treating wastewater for only a few weeks.

However, upon completion the engineer told Aquapoint that the entire package quote (including UV) was about 20% lower than the competitors they had looked at before the design process. So, UV Pure® contributed to saving the client significantly over other options. To find out more visit: <http://www.aquapoint.com/>.