

## Bowling Green Water and Water Management Services Choose Multi-Mag

Established in the early 1980's to provide specialized water and wastewater engineering services to public and private clients, Water Management Services, LLD (WMS) located in Nashville, Tennessee offers over 25 years of experience to its customers. Their range of services include engineering and planning reports, utility rate studies, construction drawings and specifications, plant operations assistance as well as capital expenditure planning and development. When the Bowling Green (Kentucky) Municipal Utilities had a requirement to modify and expand their existing water treatment plant from a 22.5 million gallon per day (MGD) capacity to a 30 MGD capacity, WMS was the consulting engineering firm selected to oversee the project



Bowling Green Municipal Utilities provides drinking water, and wastewater treatment services to nearly 17,000 customers. Drinking water is supplied via 300 miles of water lines throughout their distribution system. Through the years, Bowling Green's original water treatment plant, built in 1924, has undergone numerous upgrades in an effort to keep up with increased population demands in Bowling Green and Warren County. Drinking water is sourced from the Barren River to the water plant where they currently process an average of 17 MGD. Their distribution system stores 16.5 million gallons in storage tanks and nearby reservoirs. The water plant has received multiple awards for their operations excellence.



The Multi-Mag (highlighted above) is ideal for applications where space and straight pipe runs are at a premium.

While investigating flowmeters to be used in the project, WMS personnel knew that they had a difficult challenge. Restrictive piping configurations including short pipe runs and nearby hydraulic disturbances would prove difficult for most available meters. Dave Kuhlman, Project Engineer for WMS explains, "We looked at different meters and realized there were not that many available that would work in these situations. All of the meters are being installed in areas where there are short runs of pipe before you get to the meter and then there are hydraulic disturbances after you pass the meter locations making it difficult to achieve

decent accuracy." Kuhlman credits a visit from Marsh-McBirney's local rep, Chris Paris with Southeastern Automation, for introducing him to an insertable magmeter that was designed to work in hard to meter applications such as those found at Bowling Green's Water Treatment Plant.

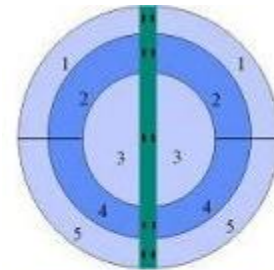
The insertable magmeter, Multi-Mag, provides highly accurate flow measurements in the simplest to most difficult full pipe flow monitoring applications. It's uniqueness lies in its ability to constantly profile the flow using multiple electrodes strategically placed on the

sensor to provide highly accurate flow readings unlike traditional spool piece meters that only provide a single-point measurement. Multiple electrodes allow for the automatic correction of shifting profiles. The sensor utilizes proven electromagnetic sensor technology and can be installed in minutes via a “hot-tap” process without the need for system shutdown or additional construction costs for by-pass piping. Multi-Mag’s unique streamlined sensor shape provides minimal pressure drop and significantly reduces overall energy costs. A 5-year sensor warranty is standard on the Multi-Mag.

Kuhlman adds, “We specified four Multi-Mag’s for the Bowling Green Municipal Utilities Water Treatment Plant to be installed by the general contractor, Building Crafts Inc. (BCI).” Since the early 1970’s BCI has specialized in the construction of water and wastewater treatment facilities. Kuhlman adds, “We chose the meters due to their simplicity of construction and the accuracy range of the meter. All of these factors came into play. We looked at other types of meters but because of the installation situation for these meters Multi-Mag’s particular design seemed to be most appropriate.”

Three of the meters are currently monitoring the flow on one 30” and two 24” treated water lines prior to the distribution of water to the flocculation and settling tanks. The fourth meter will be installed soon on a backwash flow line to the plant filters in an area of the facility that is currently undergoing construction. Kuhlman comments, “We are pleased with the accuracy of the meters and there could be potential for more.”

Bowling Green’s mission statement reveals their desire to provide their customers with reliable services at reasonable rates while using sound business practices. Their commitment continues with the selection of the engineering expertise provided by Water Management Services and highly accurate, cost-saving Marsh-McBirney Multi-Mag Magmeters.



Each Multi-Mag sensor is custom-built to the exact specifications supplied by the customer. Building sensors to exact inside pipe diameter ensures the highest possible accuracy.