



USG WATER
— SOLUTIONS —

Protecting concrete tanks from the inside out with proper maintenance in Hendersonville, TN

HENDERSONVILLE, TN



Project Summary

Customer:

Hendersonville Utility District, TN

Type of Project:

Concrete Tank Asset Management

Results:

- Preservation of critical assets
- Cost-effectiveness and more predictable budgeting
- Turnkey asset maintenance and management

“With USG providing asset management in our industry for over 50 years, it provides a high level of comfort and less stress on my capital project budgets.”

— Joe Rewa, General Manager,
Hendersonville Utility District

Founded in 1948, Hendersonville Utility District in Tennessee has always been committed to providing its customers – now more than 18,000 homes and businesses – with superior potable water and sanitary sewer services. Over the years, Hendersonville has earned many awards and accolades including a Grand Award from the Tennessee Environmental Council for the design of its technologically advanced water plant that utilizes two 400,000-gallon pre-stressed concrete tanks as clearwells dating from 1983 and 1989.

Hendersonville has taken an even more forward-thinking approach by implementing an asset management program to protect and extend the lifespan of its concrete tanks, large and critical pieces of infrastructure in its system.

The traditional mindset about concrete tanks has been that they are maintenance-free and do not need coatings. However, experience shows that concrete tanks do, indeed, require maintenance, and proper coating eliminates a host of problems. Cracks and leaks can occur when the tanks are not properly maintained, leading to structural degradation. Moreover, concrete is a very porous material; if these tanks are left uncoated, they are susceptible to build-up of biofilm and other problems. Uncoated concrete in contact with potable water can trap gasses and lead to water quality issues such as nitrification and the occurrence of coliform bacteria, as well as compliance issues resulting from high disinfection byproduct (DBP) levels.

In 2017, Hendersonville met with USG Water Solutions (USG) to discuss its comprehensive Asset Management Program (AMP™) and has been working with the company ever since. USG provides a wide range of turnkey concrete tank services to keep water storage tanks in the best possible condition, custom-designing the approach according to the condition of each tank.

“I know that with the Asset Management Program, I can make one phone call and any issues will be taken care of while eliminating any unexpected cost I do not have budgeted.”

– John Wunner, Water Plant Superintendent at Hendersonville Utility District

Services include:

- Condition assessment to review the tank’s safety, sanitary, security, substrate and coatings conditions to determine its rehabilitation and maintenance needs, as well as prepare project specifications.
- Cleaning and rehabilitation including high-pressure washing and chemical cleanings to etch and disinfect concrete substrates, plus treatment and remediation of active leaks.
- Preservation. To protect surfaces and enhance long-term water and chemical resistance, high-performance coating systems are applied. These systems are ANSI/NSF Standard 61-approved and meet AWWA standards.

USG paid attention to every detail during this process. Mil thickness testing was done during the application process to ensure the proper thickness of the coating. Coating operations were undertaken when temperatures were stable or descending to minimize outgassing and ensure the coating will last as long as it should. In addition, the initial prime coat was spray transferred and then back rolled to force material into the surface, creating a monolithic glaze-like surface. This same epoxy was used on the interior ductile iron piping to provide corrosion resistance.

In addition to the initial rehabilitation and lifetime coatings warranty, USG’s asset management services for Hendersonville include annual concrete tank inspections and condition assessment reports, emergency services, and the design and execution of regular cleanings/ disinfections and repairs. Its program spreads the cost, providing a predictable, controllable amount that can be budgeted for every year. It also removes all risk and liability with perpetual maintenance and lifetime replacement of coatings.



“The coating in the clearwell tanks has really eased my mind by knowing we have reduced the risks associated with biofilm growth and trihalomethanes (THM) production, while protecting tank assets themselves from the inside out. In addition, the look of these tanks now makes me feel good when people come to our innovative plant for tours.”

– John Wunner, Water Plant Superintendent at Hendersonville Utility District.

Hendersonville anticipates this program will extend the lifecycle of their valuable assets and in the process, create some of the best quality water available.

Putting this into financial context, “The lifecycle of a tank is based on depreciation, which is generally 30-40 years when it comes to accounting. But with coating and proper maintenance of the tanks, they can last indefinitely,” says Bert Gore, Water System Consultant, USG.



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