References

A sewage solution for future demands

Uponor involvement

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A sewage solution for future demands

A new Weholite pump station – one of the largest high-density polyethylene pump stations in North America – meets the existing increase and future sanitary sewer demands in the Montgomery Borough of Pennsylvania, United States.

Project Facts:

Location

Montgomery, USA

Vrsta objekta

Industrial

Project Type

Renovation

Montgomery Borough of Pennsylvania has experienced a substantial rise in population within the last few years. In the mid-2000s, the Montgomery region was facing difficulty dealing with an aged and failing sanitary sewer infrastructure. The West Branch Regional Authority (WBRA) in Montgomery is responsible since its creation in 2010 for finding ways to improve the efficiency and sustainability of the sanitary sewer and drinking water systems. Recently, WBRA required a new pump station to meet the existing increase and future sanitary sewer demands in Montgomery.

One of the most robust materials

Uponor supported the WBRA's project team by providing an 11' diameter x 30' deep Weholite RSC250 structural polyethylene quad submersible pump station wet well, one of the largest PE-HD pump stations in North America.
The Weholite pump station wet well was selected due to its high-density structural polyethylene

construction meeting the ASTM F894 standard, making it one of the most robust and chemically inert materials available in the market today.
Material of the system is extremely important while dealing with sewage applications as it is highly corrosive. Sewage contaminants can easily dissolve and corrode materials such as concrete and steel, whereas PE-HD remains inert.
The completely prefabricated polyethylene wet well offers a 100-year design life and is immune to H2S, pH, corrosion, and abrasion. Selecting a material which is 100% chemically inert and not corrosive signifies that over the 100-year design life of the material, operations and maintenance costs would remain low as there would be no requirement for protective linings, as is the case with other materials.

A custom designed solution

The Weholite wet well is extremely versatile and this system was custom designed to meet WBRA's requirements. Uponor worked with the Excel Fluid Group to custom design and prefabricate the Weholite wet well to support a total of four submersible pumps, surfacemounted valve assembly and subsurface, low pressure discharge. The Weholite system's discharge piping, inlets, outlets, break-away fittings, guiderails and buoyancy countermeasure base were completely prefabricated under strict ISO 9001 quality control standards. All fabricated welds were pressure-tested to ensure they were free of leaks prior to shipment.
The Weholite wet well was delivered to the project requiring no internal plumbing or cast-in-place base work. Uponor's Weholite wet well vessel was ready to be set, connected, and backfilled immediately upon delivery.

Easy to transport, handle and install

Due to the high strength-to-weight ratio of Weholite, the submersible pump station was easier to load, transport, handle and install by comparison to concrete, which is extremely heavy and cumbersome to handle. For example, a 25-foot (7,62m) length of Weholite weighs 4,750 lbs (2154kg). An 8ft. (2,44m) length of concrete pipe weighs 20,000 lbs (9071kg).
The light weight of Weholite resulted in an increase in installation efficiency and a decrease in machinery and labour costs. This rapid installation of the Weholite system decreased the overall project cost and improved project safety.
In summary, Uponor successfully provided wet well design, fabrication and on-site support during installation for this project.

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