Lake Ridge Parkway Lift Station Coating Rehabilitation

April 10, 2025



Location: Grand Prairie, TX
Client Type: Municipal
Carylon Operating Company: ACE Pipe Cleaning, Fort Worth, TX

From Delamination to Durability: Restoring a Vital Infrastructure Asset

The City of Grand Prairie, Texas, faced a critical challenge with the deteriorating coating within their Lake Ridge Parkway Lift Station. The existing polymer coating, originally installed in 2009, had failed, resulting in delamination and exposure of the concrete substrate to corrosive elements and high levels of H2S.

This 40’ x 19’ x 40’ deep rectangular wet well required complete rehabilitation, and the city, through a Texas Buy Board contract, selected Ace Pipe Cleaning for the turnkey project, which included bypass pumping and the application of a new protective epoxy coating. The scope mandated a 250-mil application of Warren Environmental’s 301-14, a semi- structural epoxy.

Surface preparation was a critical component of the rehabilitation. Ace Pipe Cleaning meticulously vacuumed debris, performed high-pressure water washing, and hand-chiseled the remaining delaminated coatings. Sandblasting was used to remove stubbornly adhered coatings, and concrete repairs were performed in corrosion- impacted areas caused by the H2S gas.

The epoxy application, conducted from the roof down, required multi- level scaffolding for full access. Any touch-ups were completed with Warren Environmental's mastic, which involved sanding and cleaning before application. Post-application included spark testing across the entire coated surface.

PROJECT CHALLENGES

The location of the lift station, situated within a gated field and accessed via a road that had been cut open for bypass setup, presented logistical challenges. Several truckloads of gravel were required to access the structure. Heavy rainfall at the project's onset further complicated access, making it difficult for the vacuum trucks to access the project location. Additionally, cold weather conditions during the application phase required careful management of the epoxy material circulation.

The high flow rate of 2,800 gallons per minute (GPM) demanded a robust bypass system. The bypass selected could handle 4 million gallons per day (MGD) and included two 4-inch pumps capable of directing flow in two separate directions. One of the owners primary concerns was the cost of the bypass operation. This challenge was addressed through the applicator's proactive planning and backup options developed with the bypass contractor.

PROJECT SUCCESSES

The coating portion of the project took approximately a week and a half. While the overall project schedule was slightly extended due to scaffolding installation, the difficulty of removing the old coating at the lift station's bottom, and the holiday season, the final inspection results exceeded the customer's expectations.

The bypass system remained in place over the holidays and plugged while the owner performed pump repairs. Warren Environmental's 301-14 provided superior, long-term protection for the concrete lift station against H2S corrosion. Despite scheduling challenges, the project's successful execution exceeded the owner's expectations. This solution demonstrated the combined value of Ace Pipe Cleaning's skilled workmanship and Warren Environmental's high-performance product, and ultimately will extend the lift station's service life for decades to come.