VORTEX

CASE STUDY


PROJECT SNAPSHOT

**PROJECT**
Central Valley Water Reclamation Facility

**CONTRACTOR**
Cardinal Coatings

**PROBLEM**
A two-week pump bypass project extended to nearly three months with approximately $210,000 in pump bypass costs that were escalating on a daily basis.

**DIMENSIONS**
- Inlet box siphon was 22vf x 5′ W x 12′ L
- Metering vault was 10vf x 5′ W x 15′ L

**OVERVIEW**
Water reclamation facility saves at least $35,000 in avoided pump bypass costs and ends extended bypass installation in just two days.

# Structure Guard® Installation Eliminates Costly & Extended Bypass Pumping in Two Days, Saving a Minimum of $35,000

## PROVEN EPOXY COATING SYSTEM BETTER SUITED FOR APPLICATION IN ADVERSE CONDITIONS, WHILE ALSO DELIVERING LONG-TERM PROTECTION

**VORTEX PRODUCTS USED**

Structure Guard®

### THE CHALLENGE

The Central Valley Water Reclamation Facility (CVWRF), the largest water reclamation facility in the central Salt Lake County, Utah region, is a state-of-the-art facility that treats wastewater using a trickling filter/solids contact process for secondary treatment. Every day, 50 to 60 MGD (million gallons/day) of wastewater are collected and piped into the facility from multiple surrounding areas, and clean water is returned to the Jordan River system.

CVWRF's massive plant expansion required the rehabilitation of several thousand feet of large diameter interceptor pipelines, which dropped down into a stipend before extending under the river. Years of adverse conditions, such as high levels of $CO_2$, $H_2S$ and NH3 gases and humidity led to the structure's deterioration. Additionally, since it was so close to the river, the only option for repair was trenchless rehabilitation. CVWRF's subcontractor set up a bypass, which was planned to be in place for only two weeks to allow for necessary repairs. However, the bypass was in place for nearly three months – and on pump watch 24/7 at a cost of approximately $5,000 per day – due to the subcontractor using a urethane coating that didn't suit the needs of the environment and a general misunderstanding of the structure's condition and repair needs.

With quickly escalating costs and extended disruptions to businesses near the pump bypass, CVWRF sought a fast and effective resolution of this ongoing issue.

# CASE STUDY


## IMPACT

**1** Provided comprehensive design recommendation to identify the best solution for the damp environment

**2** Enabled quick return to service after solving 3-month problem in just two days

**3** Stopped approximately $5,000/day in escalating bypass costs

## THE SOLUTION

The Vortex team moved quickly to provide an alternate solution that included a comprehensive 36-page design recommendation featuring structure shape and dimensions, ground water table, traffic load, safety considerations and more to arrive at the best solution to the problem. Compared to the competitor's one-page calculation based on only material thickness, Vortex's consultative approach and deep expertise helped the applicator correctly advise CVWRF that the inherent performance features of epoxies were superior to urethanes in these conditions.

Within two days, Vortex (in partnership with its certified installation partner Cardinal Coatings) applied Structure Guard®, a 100% solids epoxy coating to provide long-term corrosion protection and structural enhancement. Structure Guard's hydrophobic properties and impermeability to hydrogen sulfide gas also enable it to thrive in moist environments, while ensuring a safe, tenacious bond to whichever substrate it's applied. In contrast, when urethanes are applied in damp conditions, they create a microbubble layer which causes interface and delamination issues that can produce toxic hydrogen sulfide gas and deposit gypsum into the wastewater treatment process.

## THE RESULTS

As a result of applying Structure Guard to the metering vault and inlet siphons, the bypass – which had been in place nearly three months – was dismantled after two days.

This saved CVWRF a minimum of $35,000, because it avoided the need for the bypass operation and pump watch to continue for another week, in addition to solving the original challenge of a corroded and deteriorating siphon. It also eliminated disruption to local businesses, enabling semitrucks to easily access businesses' loading docks.

## THE INNOVATION

Structure Guard is a 100% solids, self-priming, high-build epoxy coating formulated to provide long-term corrosion protection and structural enhancement for manholes, pump stations, treatment plants or any wastewater infrastructure subject to high levels of corrosion or abrasion. It sets fast for a quick return to service, even in the most aggressive and turbulent environments, minimizing community disruptions and costs for pump bypass installations.

Vortex's deep knowledge and consultative approach enable it to provide the correct solution, tailored for each project's unique needs, faster than competitors' custom options.

*Years of exposure left the interceptor pipeline and siphons in a highly deteriorated condition.*