



DIP Wouldn't Do For The Wastewater Double Wash Crossing

Partnering on a Wastewater Regional Optimization Master Plan led to a serious survey of options and stringent test requirements. Result: Innovative and more reliable approach earned Department of Environmental Quality approval and saved \$320K with welded steel pipe with DuraShield lining and coating.

AWWA C222 industry standard compliant for interior and exterior of steel water pipe and fittings.

Case Study: Wastewater Transmission

The Pima County Regional Wastewater Reclamation Department was tasked with creating a Regional Optimization Master Plan (ROMP) program to forecast wastewater needs of their system through 2030. A portion of the plan was the Plant Interconnect Project, a 5-mile pipeline, consisting of 60-inch and 72-inch pipe included a critical section of 42-inch pipe that crossed two wash basins.



Twin Siphon 42" Welded Steel Pipe with DuraShield 210 Lining and Coating



In Field Joint Coating with Heat Shrink Sleeves

Brown and Caldwell was the engineering firm, Sundt-Kiewit (joint venture) was the contractor. The procurement method for the project was Construction Manager at Risk. This encouraged a tightly coordinated effort between the Owner, Contractor and Engineer to quickly and efficiently explore and design the most cost effective alternative to install the plant interconnect pipeline. The Wash Crossing design selection aimed to accomplish 100-year life, meet all

regulatory requirements, low maintenance and low risk of failure due to the service environment.

The Nitty Gritty

Project: The Regional Optimization Master Plan Plant Interconnect Project

Scope: Lining - 60 mils (elevated lining thickness due to service environment - gravity fed wastewater) and Coating - 25 mils of 2,400 Lineal Feet of 42" Welded Steel Sewer Pipe with DuraShield 210.

Owner: Pima County Regional Wastewater Reclamation Department

Completion Date: 2010

Case Study: Wastewater Transmission



42" Welded Steel Pipe Installation

The engineer conducted a thorough survey of coating and lining options for Ductile Iron Pipe and Welded Steel Pipe using existing standards. Additionally, independent testing for 50% sulfuric acid immersion was analyzed. Finally, a cost comparison of the pipe material and coatings and linings was conducted and in the end, considering LifeLast DuraShield's testing performance, wastewater performance history and a realized savings of \$320,000, Welded Steel Pipe with DuraShield 210 lining and coating was selected. The Northwest Pipe Company, Denver Facility constructed the 42-inch twin siphons and applied DuraShield 210 at 60 mils on the lining and 25 mils on the coating.

"The Pima County/City of Tucson Standard Specifications require a very stringent set of properties for coatings used in the sanitary sewer system. As part of the value engineering effort for the ROMP Plant Interconnect, various pipe materials and coatings were reviewed. The coatings were evaluated for application to two 400' wash crossings, which by state rule, require Ductile Iron Pipe (DIP) material. After the value engineering effort was

completed - including a stringent due diligence research of other jurisdictions experience with several of the proposed combinations - the Steel Pipe/ DuraShield coating combination was selected for installation. After close coordination between the Pima County Regional Wastewater Management Department and LifeLast, a State Rule compliant set of specifications was developed and successfully submitted for an AZ Department of Environmental Quality exception to the State Rule covering the allowable material/coatings combinations for Wash Crossings. Substantial cost savings were achieved by the combination of the Steel Pipe with DuraShield coatings".

-Jaime R. Rivera, PE Project Manager, Pima County Regional Wastewater Reclamation Department

**Questions or technical assistance on your specification or project?
Contact us; we're happy to help. Email us at info@LifeLast.com or
call (360) 254-0563**



Northwest Pipe/Pima County Site Visit

The Nitty Gritty

Project: Lining and Coating of 2,400 Lineal Feet of 42" with LifeLast DuraShield 210, 100% Solids Polyurethane. Lining - 60 mils, Coating - 25 mils

Scope: Lining - 60 mils (elevated lining thickness due to service environment - gravity fed wastewater) and Coating - 25 mils of 2,400 Lineal Feet of 42" Welded Steel Sewer Pipe with DuraShield 210.

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