Everything and the Kitchen Sink: OmegaWrap® Carbon Composite System Reinforces Multiple Anomalies on a 14-inch Diesel Pipeline

Written by Allan 'Chip' Edwards



Pressing repairs are rarely convenient from a time perspective. When a routine in-line inspection run reported a 42% lack of fusion at the long seam on a 14-inch diesel pipeline in Redding, Pennsylvania, the operator acted swiftly to find a reinforcement solution that would enable the pipeline to continue service. On top of an already tight timeline, circumstances were further complicated by the Thanksgiving and Christmas holidays, which exacerbated staffing issues and limited availability for both the operator and contractor.

Streamlined OmegaWrap® System Approval

The operator had been in talks with Allan Edwards in the months preceding the repair, arranging approval of the OmegaWrap® composite repair system to add to their Standard Operating Procedure (SOP). The lack of fusion repair presented an ideal opportunity to push the approval into its final stages and expedite a solution. During further inspection of the pipeline, numerous other anomalies were discovered, including dents and defects along the weld joints and long seam. These new discoveries, along with the pipeline's proximity to a major roadway~~,~~ made it clear to the operator that they would need to shut down service until the repair was complete, compounding the need for quick turnaround on an effective repair.

From Quote, to Training, to Job Execution

The operator contacted Allan Edwards for a quote on November 22nd and received one back within 24 hours. The urgent circumstances became a catalyst for a fast-track approval of the OmegaWrap® system. Within three weeks, the operator issued a temporary approval of the OmegaWrap® C (carbon) system with plans to issue final approval after successful completion of the repair.

Once emergency approval was granted, the operator sent a purchase order to Allan Edwards on Thursday, December 15th. An Allan Edwards field supervisor was deployed that weekend, arriving onsite in Pennsylvania on Monday, December 19th. An installer training was then organized and held on

Tuesday, December 20th to certify the field crew to install the OmegaWrap® composite systems. Following a successful training, a repair date of December 21st was set — less than a week after receiving the purchase order.



While the accompanying travel, training, and coordination of the job ran smoothly, several factors complicated the preparations for the repair. Temperatures of around 20 degrees Fahrenheit at the jobsite would impact the cure times of the load transfer putty and resins if left unchecked. To safeguard against this issue, Allan Edwards advised the operator in advance to outfit the jobsite with warming tents to control the temperature and cure times within the repair zone during installation. Additionally, the Allan Edwards field supervisor took precautions to maintain the target temperature range of the repair components during their transport from Tulsa to Pennsylvania.[GU1]

The initial sandblasting of the pipe revealed another issue. The contractor discovered two additional wrinkle bend features in the repair zone that were unknown prior to sandblasting. Due to the already high concentration of anomalies across the entire pipe section, the total footage of composite repair material was not affected even with the new anomalies factored into the calculations. This is because the 41-foot section was already set to be completely wrapped before the discovery of the wrinkle bends.



Even so, an x-ray company was called onsite for further evaluation before the repair could begin, delaying the start time by several hours.

Once the x-ray of the pipeline was completed, the installation crew set to work at 11 AM, wrapping each section under the cover of heating tents. The crew worked throughout the day and into the night to ensure same-day completion. The repair was completed at 10PM on the evening of December 21st, approximately 11 hours after the start time.

Home in Time for the Holidays Even with the delays in the approval process for the OmegaWrap® C system, the entire process, from inquiry to repair completion, was executed within one month. Furthermore, once approval of the system was out of the way, the travel, training, certification, and installation of the composite repair was executed within a 72-hour period — four days before Christmas.

