

International Boundary and Water Commission

United States and Mexico

United States Section

4191 N. Mesa, El Paso, TX 79902



Replacement of American Canal Lining-Upper Reach

Contract Number:	IBM17C0001
Contractor:	Meridian Contracting, Inc.
Notice to Proceed (NTP):	February 21, 2017
Substantial Completion:	January 27, 2020
Final Contract Price:	\$21,030,944
<i>Construction:</i>	\$8,787,668
<i>Contaminated Groundwater Treatment:</i>	\$8,936,695
<i>Contaminated Soil Removal:</i>	\$3,326,581

American Canal was originally built in 1937-38 and was first put into service on June 2, 1938. Since then, the canal has deteriorated significantly requiring removal and replacement for continued serviceability.

The Upper Reach of American Canal is just across US 85 (Paisano Drive) from ASARCO. The American Smelting and Refining Company (ASARCO) bought the property in the late 1800s. They refined lead, copper, and other ores, but they left the local area contaminated with lead, arsenic, and cadmium. USBWC removed and replaced most of the soil at their American Dam Field Office (yard and island areas) in 2014 but due to the poor condition of American Canal, all of the contaminated soil adjacent to the structure was left in place. This project included removal and replacement of over 17,000 cy of ASARCO contaminated soil. Also due to the proximity to ASARCO, all pumped groundwater was contaminated with arsenic. The groundwater had to be treated before discharging into the Rio Grande.

The Upper Reach consists of 2,269 linear feet of concrete lining. Performing maintenance on the old canal was difficult because there was no access for O&M equipment. Equipment literally had to be lifted into the canal. The new canal has a 17 foot wide ramp, accessible from the American Dam Island, to enter the canal. The preexisting canal also had no safety features except a single safety cable right before Paisano. The new canal has four sets of safety ladders, two safety cables, handrails adjacent to the bridges and trash rack, and vehicular guardrailling along both sides of the canal.

In addition to rehabilitation of the canal, adjacent site improvements included removal and replacement of over 3,300 feet of chain link fencing, construction of a Replogle flume for Water Accounting as well as rehabilitation of their gaging hut, establishment of a dedicated Water Accounting work area and a bridge to aid in water measurements, and providing a finished gravel driving surface for O&M along both sides of the canal. A trash rack, which also doubled as a safety rack, was designed to be installed at the end of the project.

Feature	Original	Reconstructed	
		STA 0+66 to 10+90	STA 11+40 to 23+35
Bottom Width	12 ft	12 ft	24 ft
Depth	10 ft	11.5 ft	12 ft
Shape	Trapezoid	Trapezoid	Rectangular
Concrete Thickness	3 in	6 in sloped walls 10 in invert	15 in walls 24 in invert
Capacity	1200 cfs	1545 cfs	1560 cfs



Preconstruction channel looking downstream from Canal Bridge
4/10/2014



Completed channel looking downstream from Canal Bridge
3/11/2020



Average condition of Upper Reach prior to rebuilding
7/16/2016



New ramp in Upper Reach to aid O&M
3/11/2020



Completed 24 ft wide by 12 ft high U-channel
3/9/2018



Hydraulic jump caused by Parshall Flume for gaging
4/15/2020



Looking upstream from end of project at new U-channel
3/31/2020



New Water Accounting (gaging) area and bridge
3/31/2020