

TR-417

Enhancing Water Quality and Dredged Material for the Port of Harlingen (Phase I)

A. Berthold

- [Full Text](#)

The Arroyo Colorado is located in the Lower Rio Grande Valley of South Texas and flows through the middle of Hidalgo and Cameron counties. The lower 16 miles of the Arroyo Colorado form the boundary between Cameron and Willacy Counties, but the lower 26 miles form the tidally influenced segment.

This tidal segment is periodically dredged to accommodate barge traffic to the Port of Harlingen and is characterized by steep eroding slopes with bank heights up to 50 feet. The steep banks are partially the result of the placement of dredged spoil material on the banks of the stream. In the upper portions of the tidal segment, the steep banks are thought to occasionally impede the flow of air across the surface of the stream, which can reduce aeration and vertical mixing, factors that contribute to the low levels of dissolved oxygen (DO) observed in this portion of the stream. The average width of the tidal segment of the Arroyo Colorado is about 200 feet and the average depth is 13 feet. Being tidally influenced, it is brackish to saline (slightly salty to very salty) and usually stratifies under warm weather conditions, forming layers of warmer, fresher water on the surface and cooler, more saline water near the bottom. For most of its course, the tidal segment of the Arroyo Colorado has a significant degree of natural sinuosity. However, sinuosity in the tidal segment of the Arroyo Colorado severely diminishes in the final four miles of the stream as the Arroyo Colorado flows into a man-made channel that leads to the Intracoastal Waterway (GIWW) and the Lower Laguna Madre.

Texas Water Resources Institute

1500 Research Parkway A110
2260 TAMU
College Station, TX 77843-2260

Phone:
979.845.1851
Fax: 979.845.0662

TWRI and the [Texas A&M Institute of Renewable Natural Resources](#) are working together to foster and communicate research and educational outreach programs focused on water and natural resources science and management issues in Texas and beyond.

