



# AquaBlok®

## Installation Summary

### Objective: Trench Dam

Location: Morgan City, LA

Setting: Auto Service Station

Project Status: Completed March 2018

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Photo 1: Placement of AquaBlok from a bulk bag.

**Project Objective:** Placement of trench dams across and along pipe trenches impede the movement of groundwater along the outside of the pipe and through the trench, reducing erosion potential and minimizing potential degradation of the pipe bedding and pipe failure along joints.

**Background:** The site is currently being used as an automobile service station. A 60" drainage culvert running parallel alongside the concrete slab had been separated at 4 joints. Over time, sections of pipe began to subside, leaving gaps at the joints, which allowed storm water to pull fines away from the exterior of the pipe and deposit them downstream. This led to gradual subsidence of the soil alongside the concrete slab used for servicing vehicles.

**Technical Challenges:** Due to the location of the culvert and its proximity to the active service station, along with other utilities present in the subsurface, removal of the culvert was going to be cost-prohibitive and inefficient. In addition to an 8" water line that was installed within feet of the culvert, a sleeve of fiber optic cables had also been recently installed. In order to excavate the trenches without disrupting the functioning utilities in place, a suction excavator was used to remove the existing soil, allowing for uniform placement of material around the problematic areas. Conventional trench dams have been constructed using a variety of local materials, including soils. However, installation using soils require compaction to obtain low-permeability and is, therefore, time-consuming and technically problematic. Achieving uniform compaction of the soil around the trench dam can also create safety issues.

**AquaBlok Solution:** 46 tons (9 truckloads) of AquaBlok were shipped to the project site in 2,400lb bulk bags to be used in the trench dams. To address the four gaps that formed at the pipe joints, wire mesh and stainless-steel screens were used first and then covered with a geotextile fabric. Material was then simply poured around the pipe and into the trench using a forklift. Because AquaBlok self-seals when hydrated, no mechanical compaction was needed. The contractor utilized the funnel spout on the bottom surface of the bulk bag to direct the AquaBlok into the trench.



Photo 2: Subsidence along the foundation due to fines being pulled away at gaps between culvert joints.



Photo 3: Trench being suction excavated due to existing water line and fiber optics present along exterior of culvert

**Equipment Used:** Flatbeds (tarpred) for material delivery; Skid-Steer loader for material offloading from flatbeds; Suction Excavator for trench excavation and material handling; stainless steel screen, hog wire, and geotextile fabric for additional support along separated joints.

**Timeline:** Once excavated, the AquaBlok trench dams were constructed in less than 10 minutes. The most time-consuming component was the pickup and transport of bulk bags from the trailer to the trench. Each bulk bag was emptied in less than one minute with controlled flow.



*Photo 5: Failure at culvert joint.*



*Photo 5: Wire being formed over the approximately 12" gap along one of the joints. The wire was then covered with stainless steel screen and geotextile fabric.*



*Photo 6: Construction completed after filling trench with AquaBlok.*



For more information, contact AquaBlok, Ltd. at:

175 Woodland Ave., Swanton, OH 43558

Phone: (419) 825-1325

Website: [www.aquablok.com](http://www.aquablok.com)

Email: [services@aquablok.com](mailto:services@aquablok.com)