

# AquaBlok®

## Installation Summary

### Objective: Trench Dam

Location: Silverthorne, Colorado  
Setting: New Housing Development  
Project Status: Active July 2016

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Photo 1. AquaBlok placed into the trench dam form, and being leveled off on top prior to adding fill aggregate on both sides of the form.

**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.

**Background:** The Silverthorne property was originally homesteaded in the 1860s as ranch land for hay production and Scottish Highland Cattle. While the ranching tradition still continues on the property, a portion of the property has been set aside for the construction of a new housing development. The property is located on the slope of a mountain with some sections of road traversing steep slopes. Per local codes, all new sewer lines being installed must have trench dams placed at an interval equal to the quotient of 200ft divided by the slope. Due to the steep slopes of the property, a large number of trench dams were required.

**Technical Challenges:** Conventional trench dams have been constructed using a variety of local materials, including soils. However, installation using soils can be time consuming and technically problematic. Achieving uniform compaction of the soil around the trench dam can be difficult and create safety issues. The slope of the pipe directly impacts the frequency of trench dams. The housing development being constructed required some sections of the pipe to have a slope steep enough to require trench dams at a 20-foot spacing. This led to a large number of required trench dams, which would have required an inordinate effort using soils.



Photo 2. Storage of the AquaBlok material on site. Tarped and protected from the elements.



Photo 3. Positioning of the trench dam form prior to adding AquaBlok material.

**AquaBlok Solution:** 195 tons (9 truckloads) of AquaBlok 2080FW#8 (PONDSEAL™) were shipped to the project site in 2,700-lb bulk bags to be used in the trench dams. As the material self-seals when hydrated, no mechanical compaction was needed. The contractor chose to fill a small form below the pipe and hydrate material to ensure that there was sufficient product completely surrounding the pipe. Following installation of a base layer, material could simply be gravity dropped around the pipe and into the trench dam form. The AquaBlok trench dams were constructed approximately 48" wide, depending on the trench walls, and 18" thick. Approximately 4-6" of AquaBlok was placed under the pipe and approximately 12" was placed above the pipe.

**Equipment Used:** Flatbeds (tarped) for material delivery; Skid-Steer loader for material offloading from flatbeds; Excavator (with 18" bucket) for trench excavation and material handling; Trench dam form, created to the specification of the project.

**Timeline:** The AquaBlok trench dams were constructed in less than 20 minutes at the beginning of the project with times decreasing as the crew became more experienced. The most time consuming component was the relocation of the small form and separate placement of an initial bedding layer of material below the pipe. This was an optional step that was performed in order to give a higher degree of comfort that the material would seal all the way around the pipe. Had material just been gravity dropped around the pipe into the form, then each trench dam would have taken dramatically less time to construct.

**Results:** Using AquaBlok, the trench dams have shown no signs of failure. The dams are functioning as designed.



Photo 4. The excavator bringing over a bulk bag (standard shipping unit for bulk material) to the trench to be placed into the trench dam form.

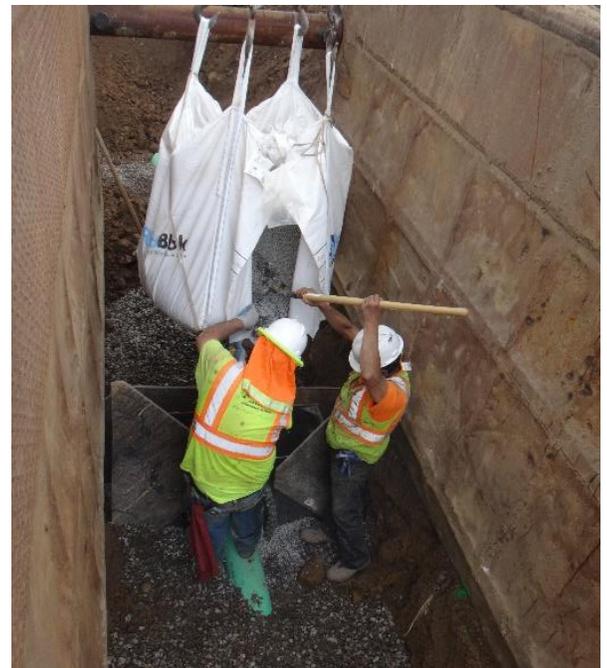


Photo 5. AquaBlok placement from a bulk bag – note the bag was cut open from the side as the full bag was not going to be used at once and the contractor did not feel they could close off the bottom spout safely once opened.



Photo 6. Construction completed after removal of the trench dam form.



For more information, contact AquaBlok, Ltd. at

175 Woodland Ave., Swanton, OH 43558

Phone: (419) 825-1325

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

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

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