

# PENNSYLVANIA STATE ROUTE 219

## THE BACKGROUND

Pennsylvania Department of Transportation (PennDOT) constructed a new 10 mile stretch of highway as part of State Route 219. A portion of the construction included the expansion of an existing wetland area. Within the expanded wetland area were cells for planting willows and vegetating the area with a native seed mix. When construction began the wetland area was excavated and the topsoil was removed for construction. A plan was not in place for preserving the top soil that was removed.

## THE CHALLENGES

The first challenge came when it was time to restore and vegetate the wetland area. The top soil that was moved aside during the construction was in poor condition. Because a plan had not been in place for preserving the top soil it was lacking the nutrients needed for regrowth. Willows, surrounded by mulch, were the only vegetation in the wetland area. PennDOT had seeded the area three times with no success. The Engineering, Architecture and Design Services



(EADS) Group asked for our help. Our first step was a soil test. We found the soil was deficient in nutrients and macros. The organic composition of the soil was less than 1% and the pH was between 4 and 5. The second challenge was to amend the topsoil with the nutrients and organic matter required to make it sustainable for re-establishing vegetation. The third challenge was application of the amendments. The first thought was to import mushroom compost, which would have to be tilled into the soil. This presented a challenge as there was limited access for equipment to the area. To till the material into the soil it would have to be done around each of the existing willows.

## THE SOLUTION

Upon receiving the soil test results, the team at Triton Environmental recommended The Biotic Soil System featuring Biotic Earth Black. In addition, we used pH adjusters and fertilizer. The Biotic Earth Black was utilized to provide the necessary organic matter to the soil. All the amendments, except for the fertilizer, were applied topically through a hydroseeder with no tilling required. A hose was run from the hydroseeder to the cell which was over 100 feet away, taking care of the accessibility issues. This method allowed us to spray and cover the entire area without having to place the amendments around the willows and till them in. In an effort to protect the willows, the fertilizer was applied by hand.

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## THE RESULTS

The initial application, which was applied in late October, was germinating within two weeks of the application. The area was fully vegetated by early spring. The mix of amendments provided the necessary nutrients to establish and sustain vegetation, with an efficient application process. This is a process that can be used on even the most challenging sites.



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**Headquarters & Denver Office**  
5433 Newport Street  
Commerce City, CO 80022  
Office: (303) 945-7588

**Western Slope Office**  
3017 Highway 50  
Grand Junction, CO 81503  
Office: (970) 985-2984

**East-Coast Office**  
4750 Steubenville Pike  
Pittsburgh, PA 15205  
Office: (412) 458-0260