

## Getting Pumped Up

REV. 2

10/16/13

Located in Mechanicsburg, PA, the 2.83-mile stretch of U.S. Route 11 (Carlisle Pike) from SR 581 (Harrisburg Expressway) to SR 114 has become a commercial and residential hub within a rural landscape. Both sides of the four-lane highway are lined with commercial centers, car dealerships, and residential developments, making this a prime location for gas stations.

Sheetz, Inc., a regional gas station chain, opted to take advantage of the booming demographic and lack of competition in the area. However, all available commercial sites along the highway were already developed, forcing Sheetz to purchase two small properties available for repurposing: a Your Place Restaurant & Pub and Hornung's Rental Center. The properties were surrounded by access streets, making them situationally ideal for a gas station. The plans called for the demolition of all existing infrastructure and facilities, as well as a new site layout.



**Image 1 – Aerial Photograph of Sheetz Gas Station location prior to redevelopment (Provided by Google Earth)**

The problem Sheetz faced was the same that faces any company looking to redevelop a property; repurposing previously developed land creates a series of logistic issues. In this case, the challenge was fitting a full-service drive-through convenience store, an automated car wash, and gas pumps into a site previously used for a small restaurant and a small office.

The first step Sheetz pursued was eliminating the second series of gas pumps utilized in typical gas station layouts, in favor of a single canopy. The second step involved relocating the stormwater mitigation facilities, necessary for redevelopment of this site, underground.

<b>Installation Information:</b>	
Project Name:	Sheetz Gas Station (Carlisle Pike)
Location:	Mechanicsburg, PA
Engineering Consultant:	Herbert, Rowland & Grubic (HRG) Engineering and Related Services
Site Contractor:	D.H. Funk and Sons, LLC
System:	Single Stack ST-36 Detention Basin
Total Storage Volume:	10,476.80 ft <sup>3</sup>
Installation Date:	April 2013

To meet the regulatory requirements for volume and rate, the designers utilized a single-stacked system that fit the tight dimensional constraints of the necessary infrastructure for a drive-through, carwash, and gas-station all on one site. The basin provided slightly more than 10,476 ft<sup>3</sup> of stormwater storage without interrupting the available developable land. This was key to project development as 68 percent of the workable surface area was to be purposed as impermeable, requiring the designers to handle their stormwater mitigation creatively in the form of underground storage. Additionally, the Karst geography of the Mechanicsburg region required incorporation of an impermeable liner around the basin to prevent the sinkholes so common to the region.

Completed in the summer of 2013, this project provided service to a previously limited community. Successfully installed, the StormTank system has permitted the necessary mitigation to meet regulatory needs while expanding usable land and providing the necessary cleanability. The innovative design of this project met the needs of the designer, owner, community and regulatory agencies.

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**Image 2 – Impermeable liner installation**



**Image 3 – StormTank Module System installed**