



## CASE STUDY

### PROJECT NAME

South Mountain YMCA Campus  
Wernersville, PA

### SYSTEM SPECIFICATIONS

Daily Flow < 8500 GPD

### TOTAL ABSORPTION AREA

6,888 SF 2<42' X 82' beds

### INFILTRATOR PRODUCTS SPECIFIED

580 Infiltrator Quick4 Standard  
Chambers

### INSTALLATION DATE

Winter 2015/16

### CONTRACTOR

Jim Mack Jim Mack Excavating  
Hereford, PA

### ENGINEER

Roger Lehmann All County Assoc.  
Pottstown, PA



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## Infiltrator Quick4 Standard Chambers Solve Compacted Soil Challenges and Budget Limitations for South Mountain (PA) YMCA Expansion

### SUMMARY

South Mountain YMCA wanted to expand the size of the campus to add cabins, double the size of the dining hall, and increase bathroom facilities from 2 to 18 toilets. The existing septic system was unable to handle the daily flow increase to 8500 GPD. Director of Facilities, Dale Kuntzman, engaged engineer Roger Lehmann of All County Associates to design a solution that would meet budget constraints, a tight construction schedule, and regulatory restrictions.

### CHALLENGES

The obvious site for a new septic drainfield was the central playing field used for baseball and soccer games. Concerns about compaction due to the 300 plus children using the playing field coupled with typically large rainfall and wet soils in the area complicated the system design.

### SYSTEM DETAILS

The system design includes 12 tanks (1 grease trap, 7 septic tanks, and 4 pump tanks). The absorption area is divided into two beds. Each bed being dosed by a separate pump allowing one bed to be turned off for O M, while the other bed can support the total flow. Each bed is center fed with 28 laterals per bed (14 laterals per side) and 5, 1/4-inch holes per lateral. The first hole is 5 feet off the manifold, then spacing changes to 8 feet.

The septic field has a total of 580 Quick4 Standard Chambers with 112 Multiport Endcaps. The Quick4 Plus Standard model was not used because the support columns would block the pressure pipe. Venting the system allows air to enter the bed through the open air space on the top of the chamber dome. Air movement is an important because the compacted soil restricts oxygen diffusion. Roger Lehmann chose Infiltrator chambers because of their ability to handle pressurized systems and allow more air movement through the bed.

To provide additional strength to support the weight of the children, the system was designed with 12 inches of cover. The depth of installation was unrestricted because the seasonal high groundwater table is 72-inches deep.

### RESULT

After installing 580 Infiltrator chambers, 2 beds, and 2,408 LF of SCH40 PVC pipe in less than 6 hours, Jim Mack Excavating was impressed with their ease of installation, speed of installation, and transportability. The engineer was pleased with Infiltrator chambers ability to handle pressure distribution and allow air movement, while still having the necessary strength.