



CASE STUDY

PROJECT NAME

Raven Rock State Park
Harnett County, NC

SYSTEM SPECIFICATIONS

2,655 GPD onsite septic system with Infiltrator chambers for NC State RV Park expansion

INFILTRATOR PRODUCTS USED

840 Infiltrator Quick4® Plus Standard Chambers

INSTALLATION DATE

2020

ENGINEER

Robert Graham, PE
George Finch/Coney and Associates

INSTALLER

Stacy Creech
Creech's Plumbing

OWNER

NC State Parks



INFILTRATOR
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Infiltrator Quick4® Plus Standard Chamber System Enables Expansion of North Carolina State Park Wastewater Treatment System

OVERVIEW

Park officials in Harnett County, North Carolina wanted to expand Raven Rock State Park to include nine new campsites with five to six RV hookups and a bathhouse including showers and restrooms.

CHALLENGE

A remote location, the need for minimal site impact, and restricted funding all made the selection and installation of the large 2,655 GPD system challenging. Further, temperatures of 100 degrees and a threat of rain and unstable weather were a constant challenge. Park officials first considered a conventional stone and pipe drainfield system. Accessibility to the site and a lack of storage area for the stone required and the fall hurricane season timeframe made that impractical. The contractor, Creech's Plumbing, recommended modifying the design to utilize Quick4® Plus Standard Chambers from Infiltrator Water Technologies to alleviate transportation and storage issues. Chambers were delivered on one truck and easily stored in a cleared area and hand-carried to the installation site.

SYSTEM DESIGN

Wastewater from the camper hookups flows to the 6,000-gallon dual compartment septic tank via a 6-inch, 693-foot-long Schedule 40 PVC sewer pipe. Bathhouse wastewater gravity flows 799 feet via a 4-inch pipe to the septic tank and then to an 8,000-gallon field dose tank. Alternating on-demand 110 GPM pumps in the dose tank sends the effluent through a valve vault to a 14-tap manifold. The duplicative pumps ensure effluent flows to the two drainfields, even if one pump fails. When the campground is at full capacity, the two drainfields, each 120 feet long with 14 trenches on nine-foot centers and utilizing a total of 840 Infiltrator Quick4 Plus Standard Chambers, are both dosed twice daily. A slope of three percent allowed the use of a gravity flow system. To accommodate the potential for volatile weather, work was done in stages, inspected, and covered. Utilizing a hybrid positioning system on which all project team members were trained including Infiltrator representatives enabled the installation crew to increase productivity overall and complete the installation of both drainfields in one day, just beating a four-day rainstorm.

RESULT

The advanced GPS technology utilized took the information provided on survey's and site plans and translated it to an exact location on the ground saving time and adding installation accuracy. The system is monitored remotely by a licensed operator who also performs routine maintenance.