



## Project Profile

### Nitrate Removal through Ion Exchange



Layne provided a Nitrate removal system for the City of Vineland, NJ as part of a design/build project. The Water Treatment Division pilot tested, designed and fabricated a three (3) vessel ion exchange system. Preliminary pilot testing indicated that ion exchange was a more cost effective treatment process than membrane filtration. The full scale system consists of three (3) 8'-0" diameter x 8'-0" straight side ASME code pressure vessels. Each unit contains 3'-0" of anion exchange resin. Layne designed an automated PLC-based control system that indicates when regeneration is necessary based on the volume of water treated through each vessel. The system was designed with the capability to regenerate the exchange resin with either sodium chloride or potassium chloride. Wastewater is directed to a holding tank which is then pumped to the local sewer system. The system has been on-line since the fall of 1999 and is one of the first of its kind in New Jersey.

**Owner:**

City of Vineland, NJ

**Contact:**

Paul Horner (856) 794-4056

**Engineer:**

Layne Christensen Integrated  
Groundwater Services,  
Bridgewater, NJ

**Site Location:**

Well #8 Vineland, NJ

**Process Design:**

1,500 GPM 15.0 mg/l nitrates

**Design Application:**

(3) Model No. IX-96.96 SBA Ion  
Exchange Vessels

**Year Completed:**

1999



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Layne Christensen Company

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