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## Fall Foliage

Schoharie Reservoir - New York City Water Supply System


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FOR IMMEDIATE RELEASE

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## DEP Completes Phase I of Delaware Aqueduct Inspection

Commissioner Joel A. Miele Sr., P.E., of the New York City Department of Environmental Protection (DEP) announced today that an underwater test vehicle had completed a successful run through the Rondout-West Branch Tunnel, the first leg of the Delaware Aqueduct, from January 13 through January 18, 2002. This completes the first phase of an inspection of the aqueduct that is being conducted by DEP and its consultants. The purpose of the inspection project is to identify the nature and most appropriate method of repair of leaks in the Delaware Aqueduct.



"The test vehicle is a prototype of, and is the same size as, the Autonomous Underwater Vehicle, which is being built by the Woods Hole Oceanographic Institution and will be launched in October 2002," said Commissioner Miele. "This test run provided us with valuable experience and information. We practiced and demonstrated the feasibility of launching and recovering such a vehicle in the tunnel. We determined that there was no blockage in the tunnel that would prevent the Phase II AUV from conducting its work. And we were able to acoustically track the vehicle as it traveled through the tunnel."

Phase I also included two aspects separate from the prototype vehicle. Inspections of four shafts associated with the tunnel were completed during the week of October 14, 2001, to October 22, 2001, and acoustic testing was performed from November 26, 2001, through November 29, 2001.

"We could not be happier with the success of this first phase of the tunnel project," said Commissioner Miele. "No unexpected problems became evident, and we are right on

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schedule to go forward with Phase II."



Phase II of the project will send the self-propelled AUV through the tunnel in October 2002. The AUV will be equipped with various sensors to determine the condition of the tunnel. The vehicle will record approximately 200,000 digital images from 5 cameras and record them on a computer. In addition to the digital stills, pressure sensors, velocity sensors and hydrophones will be able to record and locate sites where water is leaving the tunnel. The vehicle will be inserted at one end of the tunnel and travel autonomously through the tunnel. It is self-steering and has no tether attached to it. Once retrieved at the downstream end of the tunnel, the data on the vehicle will be downloaded and analyzed for information. The vehicle is based on the REMUS vehicle, which Woods Hole Oceanographic Institution has developed and extensively tested for the US Navy.

The Delaware Aqueduct was constructed between 1939 and 1945. The Rondout-West Branch Tunnel travels from the Rondout Reservoir in Ulster County and goes under the Hudson River to the West Branch Reservoir in Putnam County. On its route to the Hudson, the tunnel crosses some geological zones where the rock is not structurally strong. The tunnel is fortified at these fault zones with steel liners that support the tunnel from inside. There are known leaks that occur at two fault zones near Wawarsing and Roseton. The goal of this project is to determine the locations and causes of leaks, as well as the overall condition of the Rondout-West Branch Tunnel. Once this project is complete, engineers will use the information provided to develop a plan to repair the tunnel.