

**Clue List**  
**2009 Delaware Water Quest Scavenger Hunt**  
**Delaware Section of the American Water Resources Association (DE AWRA)**  
**October 1<sup>st</sup> – November 13<sup>th</sup>, 2009**



1. \*This entire quaint town is listed on the National Register of Historic Places. It was a major shipbuilding center in the 19<sup>th</sup> century, specializing in Chesapeake “ram schooners”, large, sail-powered cargo vessels which were produced until the early part of this century. Take a photo of your mascot in front of the town hall sign.
2. At this site lie the remains of a lighthouse, a preserve operated by the Nature Conservancy, and most importantly for this clue, a location for tankers to unload jet fuel for the Dover Air Force Base in the Delaware Bay. The oil tankers are often clearly visible. If you are lucky enough to see the operation in progress, take a photo of your mascot and the tanker. If the tankers aren’t present, take a picture of the docks and the restricted area where the unloading process occurs. If the site mentioned above is inaccessible due to flooding, take a photo of your mascot and the fuel storage tanks towards the beginning of this road.
3. This is the only pier on Delaware’s Inland Bays that was built specifically for crabbing, it opened 2001. Take a photo of your mascot on this pier.
4. Solve the Sudoku puzzle from our website ([www.deawra.org/tasks](http://www.deawra.org/tasks)) to determine the address along Kennett Pike of the location of this clue. When you arrive, get a cool drink and look up to see a unique way of cleaning stormwater. Take a photo of your mascot at the site. Include the solved Sudoku puzzle with your final submission.
5. \*Visit the reservoir in Wilmington that has been covered so a park can be built on top of it. Take a photo of your mascot at the site.
6. This beach near Port Penn is a launching site for recreational boats into the Delaware River. Take a photo of your mascot at the sign near the boat ramp.
7. This site, purchased by the state in 1991 and run by DNREC’s Division of Fish and Wildlife, includes educational opportunities for school groups, office and laboratory space for biologists and wetlands researchers, and a conference center, plus trails and boardwalks for the observation of nature. Take a photo of your mascot on the elevated boardwalk overlooking the scenic “gut”. For extra credit, include a brochure that includes one of DNREC’s program areas associated with this site.

8. According to its name this New Castle County water body doesn't even exist! But, if you were to paddle approximately 6.8 miles upstream on the major tributary that runs by Delaware's largest port you will be able to find it. You can get a good photo of the confluence of this mysterious waterway with the aforementioned tributary from the boat ramp opposite the mouth. Don't forget your mascot!
9. This Hockessin-area bank features several innovative water management features. In fact, it was named a "Top Project" by *Storm Water Solutions*, and has been recognized with an Honors Award by the American Council of Engineering Companies. Take a photo of your mascot with some of the key features.
10. For centuries, oysters have provided a sustainable food supply and contributed to the economies of Delaware and New Jersey communities. In fact, 1 to 2 million bushels were harvested every year during the 1930s, when the population initially began to decline. The introduction of the oyster disease MSX in the 1950s, followed in the 1990s by a second disease, Dermo, has resulted in a significant decline in the oyster population. Consequently, the industry has been imperiled.  
The oyster population rebounded somewhat by 2000 due to the combined efforts of both states and the oyster industry, producing some 100,000 bushels per year. Today, however, the oyster population is feeling the effects of five years of below-average biological recruitment for unknown reasons. Over time, the shell-planting and transplant program could increase production to approximately 200,000 to 400,000 bushels per year, with a possible economic impact of up to \$60 million between the two states. This is money that would not only revitalize the oyster population in the future, but also many coastal communities dependent upon the living resource.  
To see a project where beds of oyster spat and shells are being planted, travel past the home base of the UD's sharp new high-tech research vessel (commissioned in 2005) until you reach a turtle crossing sign. Turn right and take a picture with your mascot on the oyster shell pile that's being used to restore oysters to the bay.
11. An initiative to restore American Shad to the Brandywine has been underway since 2005. On the zoo-side of the river there is a concrete ramp of a former fish ladder from the 1970s that is no longer functioning but could be incorporated into any future restoration efforts at this dam site. Hint: this site is located in Brandywine Park and this portion of the river is a central component to the City of Wilmington's primary drinking water supply. Take a photo of your mascot at the site.
12. One of Delaware's "micro-towns", this mini-metropolis had the smallest population of any incorporated place in the state in 2000. It is nestled in the heart of Delaware's agricultural landscape, which is crisscrossed by many channelized ditches, remnants of once natural streams, now straightened and diked for farming purposes. Heading north out of town (on the town's namesake road), you soon cross several of these ditches, which help drain and dry the surrounding farmland. If you were to trace the path of a drop of water in the ditch, it would eventually enter the mighty Chesapeake Bay. Take a photo of your mascot in the town, and at the last road crossing your drop of water would encounter before leaving the state.

13. \*39.064540, -75.612690

Take a photo of your mascot at the road intersection closest to the site (make sure the road signs are visible).

14. Delaware was involved directly in WWII on the home front. The waterways leading to industrial centers such as Wilmington and Philadelphia were seen as vulnerable to German U-boat incursions; therefore, at strategic points, garrisons were set up. Take a photo of your mascot at the highest point in a historic fort with a commanding view of the entrance to the Delaware Bay.

15. These locations are vital in gathering stream flow data throughout the country. This information can be used not only as a historical account of the past but can also be used to predict future conditions in and around the floodplains of rivers, creeks, and streams. To find this particular location, you'll definitely need to consult the Clayton Quadrangle map. Take a photo of your mascot at the site.



16. \*The 30 million gallon per day (mgd) United Water Delaware (UWD) White Clay Creek at Stanton Water Treatment Plant is situated along the White Clay Creek just below the confluence with the Red Clay Creek. UWD's water treatment plant is influenced by fluvial freshwater from the upstream watersheds and the incoming tide from the Delaware Estuary. Ninety eight percent of the time the water at the plant's intake is fresh. When stream flow drops below the 7Q10 flow of 17.2 mgd (e.g., during droughts) the incoming tide can elevate chloride levels in the creek to near or above the USEPA secondary drinking water standard of 250 parts per million (ppm). UWD has installed a tidal capture structure and implemented a chloride-monitoring plan along the White Clay Creek and Christina River to address the problem of high chloride levels during these periods. When chloride levels are too elevated, the tidal capture structure, located just below the intake, is inflated to ensure that brackish water can not enter the treatment plant.

At this site you will also find a historic house, built in 1750 which was used in 1777 as a meeting place for General George Washington and his staff between the Battle of Cooch's Bridge in Delaware and the Battle of Brandywine in Pennsylvania. Looking upstream from the historic house, photograph your mascot and the tidal capture structure from this property. Beware, it may be hard to see if it's not in operation.