

Swirl Concentrators

QUESTION

The following question was distributed to the NACWA Legal Affairs Committee via e-mail on January 29, 2007:

"We are reaching out to you as a member of NACWA's Legal Affairs Committee with a request for information from a NACWA member. The question as presented by the member is:

The State of Pennsylvania has taken a position that unit processes such as a swirl concentrator do not constitute treatment but are simply conveyances for untreated sewage under wet weather conditions (i.e., uncontrolled CSO or SSO). Does anyone have correspondence from EPA or their state authority either approving the use/construction of a swirl concentrator to address wet weather flow discharges or acknowledging that this process provides treatment of wet weather flows?"

RESPONSES

NACWA received the following response from members:

General Responses

- See page 131 of the technology fact sheets in the 2004 Report to Congress. The term "swirl concentrator" should be better defined as the treatment technology has improved since the 1970s (many of the swirl concentrators that were constructed with federal grants for CSO control are not effective for pollutant removal). 2004 Report can be found at <http://www.nacwa.org/getfile.cfm?fn=2004-RTCapdxi.pdf>.
- The CSO Policy calls for the equivalent of primary clarification for the treatment technology. Louisville KY was testing if the swirl concentrators could be so considered. As for treating SSO - have to meet 30/30 and 45/45 to be considered secondary; otherwise it would be BCT/BAT.
- Swirl/vortex technologies are expressly covered in Chapter 4 of EPA's Manual for CSO Control (1993) and are also listed under "Treatment Technologies" in section 3.3.5.4 (page 3-38) of EPA's CSO Guidance for Long Term Control Plans (September 1995).

City/State Specific Responses

Omaha, Nebraska: It hasn't yet been a regulatory issue/question known to us. There were some of these types of devices used in a grant-funded project at an Omaha area shopping center for parking lot run-off. Note, also the EPA site:

<http://www.epa.gov/NE/assistance/ceitts/stormwater/techs/aquaswirl.html>

Dallas, Texas: Dallas is not aware of any correspondence from EPA that approves the use of a swirl concentrator, but members may contact Chris Kaakaty of Dallas Water Utilities, the wastewater operations Assistant Director, at (214) 670-3145, to determine if they know of any such correspondence or if Dallas uses swirl concentrators in any context.

Denver, Colorado: When the new football stadium was built in Denver several years ago, a swirl concentrator was included in the overall plan to address contaminated stormwater. Under the terms the Metro District, City of Denver, Denver Broncos, and State of Colorado agreed that all stormwater from the stadium seating would be conveyed through a swirl concentrator, the first flush (.5 inch) was to be captured in a vault and pumped to the sanitary during low-flow periods. Stormwater in excess would be treated in the swirl concentrator and discharged to the storm. This was truly a stormwater issue (albeit potentially contaminated with beer, hot dogs, and peanut shells). I don't know how much of this was incorporated in Denver's MS4, but there was a letter from the State acknowledging the "treatment."

Narragansett Bay, RI: Does not use swirl concentrators nor has suggested their use.

Detroit, MI: Vortex solids separators were installed at two different CSO facilities in Saginaw. They were actually required at the Weiss Facility by DEQ. The DEQ wanted these devices installed to enhance the removal of grit up front of the Retention Treatment Basin. Each one of the devices is located just downstream of a pump station and are solely fed by the station flows. While the DEQ promoted this device, they would have never allowed the device to be put in as a stand alone device to address the CSO discharge to the river.

Tulsa, OK: The City of Tulsa does not use swirl concentrators, and is not aware of any place in Oklahoma that does.