

State Water Resources Control Board

Division of Drinking Water

April 24, 2017

Onder Caliskaner, Ph.D., PE
National Technologist
Kennedy/Jenks Consultants
10850 Gold Center Drive, Suite 350
Rancho Cordova, CA 95670

Dear Mr. Caliskaner,

Subject: Conditional Acceptance of the Cloth Media Filters PA-13, PES-13, and PES-14 to comply with California Water Recycling Criteria at Higher Filter Loading Rates (3190001-706)

The Division of Drinking Water's (Division) Recycled Water Unit has reviewed a request, dated January 20, 2017, from Kennedy/Jenks Consultants to consider the Cloth Media Filters PA-13, PES-13, and PES-14 (used at high filtration rates) as alternative filtration technologies for compliance with the California Water Recycling Criteria (Title 22), Section 60320.5. Accompanying the request was a report entitled, "Title 22 Re-Rating of Aqua-Aerobic Systems, Inc. Cloth Media Filters PA-13, PES-13, and PES-14 for Wastewater Recycling Applications in California", dated January 2017. The report outlines findings from a study conducted at the Pleasant Grove wastewater treatment plant located in the City of Roseville, CA. The testing was conducted using the single-disk Aqua MiniDisk MD-5 filter pilot plant treating secondary clarified effluent having turbidity levels averaging 4-5 NTU with spikes up to 10 NTU. Over 30 tests were done with filter flowrates ranging from 6 to 22-gpm/ft².

These filters are currently conditionally accepted in California at lower filtration rates.

1. PA-13 at 6-gpm/ft² via DDW letter dated January 13, 2009.
2. PES-13 at 6-gpm/ft² via DDW letter dated November 14, 2007.
3. PES-14 at 7-gpm/ft² via DDW letter dated February 1, 2013.

Demonstration studies conducted using the Cloth Media Filters PA-13, PES-13, and PES-14 at higher filtration rates have satisfactorily shown an equal degree of treatment and reliability as those technologies listed in Title 22. Based on a review of the materials submitted, the Division grants conditional acceptance of the Cloth Media Filters PA-13, PES-13, and PES-14 at the higher filtration rates as alternative treatment technologies for recycled water filtration applications, subject to the following conditions:

1. Use of the identical materials and manufacturing for each filter as described in the January 2017 report.

2. Instantaneous loading rates shall not exceed 22-gpm/ft².
3. Turbidity in the filtered water shall not exceed an average of 2 NTU within a 24-hour period, 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU at any time.
4. Coagulation, per Title 22, Section 60349, shall be added upstream of the alternative filtration technology to meet the requirement of Title 22, Section 60301.320(a) whenever the filter effluent supplies recycled water for a cooling use area as per Title 22, Section 60306.
5. Acceptance of this technology is contingent on it being complimented with a disinfection process which is compliant with Title 22, Section 60301.230.
6. Each operations plan shall include a performance goal that adequate backwash duration is provided to ensure effective solids removal ('in' and 'on' the cloth media). The operations plan shall describe how this goal will be met under all conditions.
7. Each operations plan shall include scheduled inspections and assessments of the cloth condition as an operational safeguard. This should include a routine visual inspection at least monthly, and a more in-depth assessment of the cloth condition at least annually. Inspection frequencies may change as media condition and performance experience is gained with time.
8. Each operations plan shall provide for assurances that adequate sludge wasting is practiced to ensure against excessive solids buildup in the filter vessel.

Conditional acceptance is specific to the Cloth Media Filters PA-13, PES-13, and PES-14 detailed in the report dated January 2017 described above. The Division must review in advance any future proposed changes made in the physical attributes or characteristics of these treatment technologies to determine whether the modifications will require additional testing to ensure Title 22 equivalency.

Review and approval of all proposed water recycling projects using the Cloth Media Filters PA-13, PES-13, and PES-14 are provided through the Regional Water Quality Control Board's Water Reclamation permitting process. The Division's local district offices will also review all proposed water recycling projects using the Cloth Media Filters PA-13, PES-13, and PES-14 on a case-by-case basis to confirm full compliance with all applicable treatment and reliability features required by Title 22 for the specific treatment facilities.

If you have any questions regarding this letter, please contact Randy Barnard at (619) 525-4022 or via email at Randy.Barnard@waterboards.ca.gov.

Sincerely,



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