

PURPOSE: This document provides guidance on DHH’s policy for pilot study requirements for rapid rate pressure filters at public water systems in the State of Louisiana. This policy serves to protect public health, safety, and welfare by establishing consistent procedures for approving all elements of pilot studies and ensuring that the pilot study complies with all applicable rules and regulations of the Office of Public Health – Engineering Services Section.

I. General Information:

A pilot study (or pilot test) is required for the use of rapid rate pressure filters intended to operate at a loading rate greater than 4.0 gallons per minute per square foot of filter area or for non-conventional filter media use in rapid rate pressure filters. The maximum allowable loading rate is 6.0 gallons per minute per square foot of filter area.

An authorized representative of the public water system must submit a pilot study proposal to the DHH/OPH District Engineer in charge of their respective area for review and approval prior to installation of the pilot study components and operation of the pilot study. The pilot study proposal must be prepared by a Professional Engineer licensed to work in Louisiana and bear the seal, signature, and date of signature of the engineer in responsible charge of the pilot study. The pilot study proposal shall include the anticipated time frame, raw and finished water parameters to be analyzed, specific analysis methods and testing intervals, and proposed water treatment methods to be utilized in the pilot study.

A final pilot study report shall be submitted by the engineer in responsible charge for the pilot study that includes a summary of the pilot study results, events, analysis of raw and finished water quality, recommended treatment method, and treatment and cost effectiveness. The final report must be submitted for review and approval to DHH before the proposed treatment method or process can be installed and operated at the public water system.

II. Purposes of Pilot Studies:

Pilot studies are performed by the public water systems and their representatives:

- a) To ensure that the proposed treatment method and process will continuously produce potable drinking water that meets Federal and State drinking water regulations.
- b) To provide potable drinking water that meets secondary drinking water standards and address secondary quality concerns, such as iron and manganese, and taste and odor complaints.
- c) To determine the specific operational and performance characteristics of the proposed treatment process.
- d) To estimate the overall capital and operational costs of the proposed treatment process.
- e) To compare the benefits of the most cost-effective treatment process with the benefits of other treatment processes.
- f) To implement a full scale design in accordance with the approved pilot scale model.
- g) To determine whether any modifications to the actual proposed full-scale treatment process compared to the treatment process used in the original pilot study will require additional pilot studies.

III. Minimum Requirements for Pilot Studies:

Pilot studies shall contain the following items when submitted by the water system or their representatives to the DHH for review and approval:

- a) Plans and specifications of the proposed water treatment method or process that have been signed, stamped, and dated by a registered Professional Engineer in the State of Louisiana. The plans shall include details on the pilot treatment process scale, design, operation, sampling, testing procedures, and treated water disposal associated with the treatment process.
- b) The pilot treatment must be isolated from the public water system by appropriate backflow prevention device.
- c) A process flow diagram of the pilot process. The pilot configuration must include: sample taps at the raw water, filter influent, and filter effluent; pressure gauges before and after the filter; and a totalizing flow meter.
- d) A description of the composition and properties of the filter media, as well as the effective size and uniformity coefficient of the filter media shall be determined. Filter media being piloted for proposed use at public drinking water systems must have ANSI/NSF 61 certification.
- e) The duration of the pilot plant operation. The proposed treatment process in the pilot study shall operate long enough to establish the effectiveness of the treatment. The pilot plant shall operate through a minimum of 90 days or as determined by DHH.
- f) The filter run times, backwash procedure (rate and frequency), and any other necessary operating parameters shall be recorded.
- g) Chemicals and chemical feed equipment to be used in the study. The chemical addition rates shall also be included in the submitted pilot study to DHH.
- h) The following measurements and samples shall be taken three times daily or per filter run (beginning, middle, and end):
 - i) Pilot flow rate and filter loading rate,
 - ii) Filter Headloss,
 - iii) Oxidant (chlorine) concentration from the pilot filter influent and effluent, and
 - iv) Contaminants of concern (arsenic, iron and/or manganese) concentration from the pilot filter influent and effluent.
- i) A final pilot study report which summarizes the results of the pilot testing and makes recommendations for any full-scale water system improvements. The recommendations must be submitted to DHH for review and comment prior to or along with the submittal of a full set of engineering plans and specifications for any permanent installations at the public water system.