

Conventional Surface Water Plant Construction Checklist (Step 1)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
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Public Water System I.D. No. _____
TCEQ Log No. P- _____

The following list is a brief outline of the "Rules for Public Water Systems," 30 TAC Chapter 290 regarding proposed conventional surface water treatment plant construction. A final engineering report, sealed plans, and specifications meeting, but not limited to, the minimum requirements cited here shall be prepared under the supervision of a Texas licensed professional engineer and submitted to TCEQ for approval. This list is not a substitute for the rules and this checklist cannot be accepted in lieu of the required engineering submittals. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website: <http://www.tceq.texas.gov/rules/indxpdf.html>

Please note that this submittal is for construction only. A second submittal will be required for Approval to Use. Please see the Conventional Surface Water Plant (SWTP) Use Checklist (Step 2).

1. All water secured from surface sources shall be given complete treatment at a plant which provides facilities for pretreatment disinfection, taste and odor control, continuous coagulation, sedimentation, filtration, covered clearwell storage, and terminal disinfection of the water with chlorine or suitable chlorine compounds. In all cases, the treatment process shall be designed to achieve at least a 2-log removal of *Cryptosporidium* oocysts, a 3-log removal or inactivation of *Giardia* cysts, and a 4-log removal or inactivation of viruses before the water is supplied to any consumer. The executive director may require additional levels of treatment in cases of poor source water quality. Based on raw water monitoring results, the executive director may require additional levels of treatment for *Cryptosporidium* treatment as specified in §290.111 of this title. [§290.42(d)(1)]
2. No cross-connection or interconnection shall be permitted to exist in a filtration plant between a conduit carrying filtered or post-chlorinated water and another conduit carrying raw water or water in any prior stage of treatment. The submittal must address all the applicable requirements in §290.42(d)(2)(A) to (F).
3. Return of the decanted water or solids to the treatment process shall be adequately controlled so that there will be a minimum of interference with the treatment process. The submittal must address all the applicable requirements in §290.42(d)(3)(A) to (C).
4. Reservoirs for pretreatment or selective quality control shall be provided where complete treatment facilities fail to operate satisfactorily at times of maximum turbidities or other abnormal raw water quality conditions exist. [§290.42(d)(4)]
5. Flow-measuring devices shall be provided to measure the raw water supplied to the plant, the recycled decant water, the treated water used to backwash the filters, and the treated water discharged from the plant. Additional metering devices shall be provided as appropriate to monitor the flow rate through specific treatment processes. Metering devices shall be located to facilitate use and to assist in the determination of chemical dosages, the accumulation of water production data, and the operation of plant facilities. [§290.42(d)(5)]
6. Flash mixing equipment shall be provided in compliance with §290.42(d)(8)(A) and (B).

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7. Plants with a design capacity greater than 3.0 million gallons per day (MGD) must provide at least one hydraulic mixing unit or at least two sets of mechanical flash mixing equipment designed to operate in parallel. Public water systems with other surface water treatment plants, interconnections with other systems, or wells that can meet the system's average daily demand are exempt from the requirement for redundant mechanical flash mixing equipment. [§290.42(d)(8)(A)]
8. Flash mixing equipment shall have sufficient flexibility to ensure adequate dispersion and mixing of coagulants and other chemicals under varying raw water characteristics and raw water flow rates. [§290.42(d)(8)(B)]
9. Flocculation equipment shall be provided in compliance with §290.42(d)(9)(A) to (C).
10. Clarification facilities shall be provided in compliance with §290.42(d)(10)(A) to (D).
11. Gravity or pressure type filters shall be provided in compliance with §290.42(d)(11) (A) to (G).
12. Pipe galleries shall provide ample working room, good lighting, and good drainage provided by sloping floors, gutters, and sumps. Adequate ventilation to prevent condensation and to provide humidity control is also required. [§290.42(d)(12)]
13. The identification of influent, effluent, waste backwash and chemical feed lines shall be accomplished by the use of labels or various colors of paint. Where labels are used, they shall be placed along the pipe at no greater than five-foot intervals. Color coding must be by solid color or banding. If bands are used, they shall be placed along the pipe at no greater than five-foot intervals in compliance with §290.42(d)(13)(A) and (B).
14. All surface water treatment plants shall provide sampling taps for raw, settled, individual filter effluent, and clearwell discharge. Additional sampling taps shall be provided as appropriate to monitor specific treatment processes. [§290.42(d)(14)]
15. All innovative / alternate treatment processes, with their associated exception approval letters. [§290.42(g)]
16. Documentation of treatment chemicals and media compliance with NSF 60 and NSF 61. [§290.42(j)]
17. Corrosion control treatment. [§290.42(n)]