

Plan Review of Inorganics/Organics Treatment Facility

This list is used during the Division of Drinking Water (DDW) internal plan review process for treatment facilities that remove inorganic/organic contaminants.

1. Describe the source (name/source ID/type), water quality concerns, and the historical data that have been reviewed regarding source flow range, contaminant levels, MCL(s), and health risks - acute (e.g., nitrate) or chronic (e.g., arsenic).
2. Identify the treatment facility name and ID (same as the name and ID listed in SDWIS database).
3. Describe treatment type (e.g., membrane, adsorption, coagulation & filtration), process and technology (e.g., adsorptive media, Iron-based media, aeration, pH adjustment, post-chlorination), and equipment (e.g., manufacturer, brand, model).
4. If applicable, describe the pre-treatment process (e.g., pre-oxidation by adding chlorine).
5. Describe whether disinfection is included (e.g., post-chlorination, other disinfection processes). If disinfection is included, include disinfection CT estimate, overall CT through the plant, and parameters used in the CT calculations in the letter.
6. If applicable, describe pilot test/bench top test (e.g., procedures, parameters, duration, results). Describe what results were used to determine pre-treatment, optimal dose, and the reason for selecting a specific pre-treatment or treatment process.
7. Describe the chemicals that will be used for the treatment processes. Describe whether these chemicals have the ANSI/NSF 60 standard certification.
8. Describe whether the proposed treatment process or unit has the ANSI/NSF 61 standard certification.
9. Describe the number of treatment trains, capacity of each train, and the design capacity of the treatment plant. Clarify whether redundancy ability or backup train is included in the design. *[For treating contaminants with acute health risk, a redundancy train should be included. If a redundant train is included in the design, typically one train is not counted toward the plant design capacity.]*
10. If the design includes a backwash water supply line and/or a plant utility water supply line, check whether they are connected to finished water. If yes, verify that these water supply lines are designed to prevent backflow and backpressure (i.e., no cross connection; having an approved backflow prevention assembly, an air gap, sufficient elevation difference, acceptable block and bleed manifold, etc.).
11. Describe whether a bypass line exists to allow source water to bypass the treatment processes. If yes, describe the design features that control the bypass, and blended flows (if applicable), and how the bypass incident will be managed (e.g., water quantity and quality monitoring, notification to DDW). *[For treating contaminants with acute health risk, an uncontrolled bypass line should not be allowed.]*
12. Describe the waste stream(s) (e.g., backwash wastewater, sludge, brine) and how they will be handled. Verify and state whether the water system has a legal means to dispose these waste

types. Include the waste/wastewater authority (e.g., Division of Water Quality, local sewer authority) in the cc list.

13. Identify the specific rules applicable to this review (e.g., R309-520, R309-525-11, R309-530-8, R309-535-X). Briefly describe the issues related to specific rule requirements.
14. If applicable, address “simultaneous compliance” concerns. Describe whether the treated water and/or waste stream from the proposed treatment process may result in unintended consequences in the distribution system or the environment. *[For example, the finished water produced from a reverse osmosis (RO) WTP may cause corrosion or lead/copper MCL exceedance in the distribution system; the brine of RO reject stream may not be legally disposed.]*
15. The Plan Approval (PA) letter for a WTP treating inorganic/organic contaminants should include the following information:
 - a. Specify “water quality data” that are required to show WTP performance before issuing a WTP OP. Customize the “water quality data” item in the generic Operating Permit (OP) checklist to include the following information:
 - Specific parameters to be sampled (e.g., arsenic, pH, iron, TDS, conductivity)
 - Sampling location (e.g., raw water, after WTP)
 - Frequency of sampling (e.g., daily sample, at least one day apart)
 - Number of data sets of before & after water samples
 - b. Obtain the preliminary monitoring and reporting information from the Rules Section. Provide it to PWS (include with PA) for informational purpose. *[The preliminary monitoring and reporting information is important if a WTP project includes PLC and SCADA programming prior to completion of the project or requesting OP.]*
16. The Operating Permit (OP) letter must include the monitoring schedule follow-up paragraph.
17. Consult with the Rules Section staff
 - Nitrate/arsenic/lead/copper/corrosion control
 - Disinfection, Inorganics (sulfate, TDS, iron, manganese, fluoride, softening), and Organics (Gross Alpha, VOC/TCE/PCE, pesticides, petroleum products)