

**Division of Drinking Water (DDW) Plan Review Requirements for  
Aquifer Storage and Recovery (ASR) Project Involving Public Drinking Water Sources**

Water System Name:

Water System Number: UTAHXXXX:

Source of Injected Water & ID: XXXXX (WS00X):

Injection Well Name & ID: XXXX (WS00X)

1. Verify that the source of the injected water is one of the following:
  - Groundwater (i.e., not under the influence of surface water or UDI), or
  - Treated water meeting the surface water treatment requirements.
2. Contact DDW Rules Section at (801) 536-4200 to review the existing new source chemistry data for both the source water and receiving well for completeness and MCL compliance.
3. If available, provide to DDW the past total coliform and/or *E. coli* history of the source water (sampled before disinfection is applied).
4. If past total coliform and/or *E. coli* history of the source water is not available, take the source sample (before the disinfection point) for both total coliform and *E. coli* analyses to determine whether the biological contaminant is a concern.
  - a. DDW will require a minimum of 4 source samples (taken during the warm seasons), at least one week apart, for the ASR project. The number of required source samples may be determined on a case-by-case basis.
  - b. If the total coliform or *E. coli* source samples show a persistent pattern of being positive:
    - i. DDW will require continuous chlorination in the distribution system, and a detectable disinfectant residual but no more than 0.5 ppm at the point of injection.
    - ii. Before granting an approval for the full-scale ASR implementation, DDW may require microscopic particulate analysis (MPA) and onsite inspection to investigate whether the source water is susceptible to UDI.
5. Clarify whether the ASR project is a pilot test or full-scale. Clarify whether a dedicated transmission line will be used to deliver the source water to the injection well, or the source water is delivered through the distribution system before reaching the injection well. Clarify whether the source water is disinfected before injection. If yes, identify the disinfectant, the measured dose range, and the location where the disinfectant is added.
6. If chlorinated water, delivered through the distribution system piping, is used for injection in the ASR project, before initiating the ASR project, the water system must

take disinfection by-products (DBPs) samples (i.e. HAA5s and THMs) at or near the point of injection.

- a. Provide the description of the DBP sampling location to DDW.
  - b. Provide the DBP sample results to DDW to verify that the DBP levels are below the drinking water maximum contaminant levels (MCLs).
7. The water system must have an up-to-date and on-going cross connection control program before implementing the ASR project. Before initiating the ASR project, the water system must conduct an inspection to identify and minimize cross connection hazards within its distribution system.
  8. If the source water is delivered through the distribution system piping before being used for injection, the water system must evaluate whether the ASR project will significantly alter the flow and velocity in the distribution system. If significant change of the flow and velocity is anticipated in the distribution system, the water system must take precautionary actions, such as effective flushing, to prevent the contaminants, such as the disturbed sediments from being injected to the well.
  9. Compile the ASR proposal for DDW review. The proposal shall describe the source water and its water quality (including the dissolved oxygen level), how the source water will be delivered to the injection site during the ASR project, configuration of the injection well, method of injection, the proposed injection period, estimated quantity of injected water, the minimum disinfectant residual that will be maintained prior to injection, agency review status (e.g., Division of Water Quality, Division of Water Rights), etc.
  10. Submit the following information to DDW for review and approval prior to commencing the ASR project:
    - “Project Notification Form” (attached; available in DDW’s website), and
    - Detailed information addressing the issues outlined in Items 1 through 9
  11. Obtain Plan Approval from DDW prior to starting the construction or modification of the drinking water facilities related to the ASR project.
  12. Obtain an Operating Permit from DDW before placing the constructed or modified drinking water facilities related to the ASR project in service.