

567—55.4(455B) ASR technical evaluation criteria.

55.4(1) Requirements. Injections into aquifers for the purpose of treated water storage and subsequent withdrawals from the receiving aquifers intended for potable uses shall be subject to the following requirements:

a. Aquifer pretesting.

(1) A limited registration for aquifer pretesting as described in 55.3(1)“b” shall be for the period of two years and may be renewed for two additional one-year periods, for a total cumulative registration time not to exceed four years, should pretesting completion require more than one year.

(2) A limited registration shall allow aquifer pretesting for determining the feasibility of ASR, including placement of pumping and storage/extraction equipment. The pretesting program shall be designed to provide the information to evaluate the ultimate capacity anticipated for the ASR project and provide assurance that the ASR site shall not restrict other uses of the aquifer. The pretesting program shall include injection rates and schedules, water storage volumes, recovery rates and schedule, and a final testing report.

b. Engineering report. An engineering report evaluating the technical feasibility of the proposed water injection and the probable percentage of recovery of treated water when pumped for recovery shall be submitted to the department.

(1) The engineering report shall include preliminary information from conceptual evaluations and aquifer pretesting, such as:

1. Injection rates and schedules;
2. Water storage volumes;
3. The length of time the injected water will be stored;
4. The projected recovery rate;
5. Water quality data necessary to demonstrate that the water meets national drinking water standards;
6. Water level monitoring data, including the location of observation wells, if any;
7. A plan detailing what will be done with the recovered water if the intended use is not possible; and
8. A final testing protocol.

(2) If the report can demonstrate, by field test results or by conceptual or mathematical hydrogeologic modeling, that the injection, storage, and subsequent recovery will not adversely affect nearby users, an ASR project may be permitted after department review.

(3) A displacement zone containing the stored volume of water will not be allowed if it adversely affects another user’s zone of influence. If the department finds, through hydrogeologic modeling or during pretesting, that the proposed displacement zone may impact the zone of influence of another user’s existing well, additional testing will be required. The department may require the applicant to construct observation wells between the ASR site and nearby wells and may designate project-specific monitoring and reporting requirements at the observation wells.

(4) A hydrogeologic site investigation that evaluates potential quantitative and qualitative impacts to the aquifer, including changes to localized aquifer geochemistry, shall be part of the engineering report. Preliminary hydrogeologic information shall include:

1. The local geology;
2. A hydrogeologic flow model of the area flow patterns;
3. A description of the aquifer targeted for storage;
4. The estimated flow direction and rate of movement;
5. Locations of both permitted and private wells within the area affected by ASR wells, including best estimates of respective zones of influence;
6. A basis for estimating the displacement zone; and
7. Potable water quantity recovery estimates.

c. Protection of nearby existing water uses. An ASR permit applicant shall demonstrate that an ASR site will not restrict other uses of the aquifer by nearby water use permittees.

(1) An applicant shall conduct an inventory of nearby wells and submit it to the department with an ASR permit application. The department, after considering the rate and amount of the ASR injections and

withdrawals and the aquifer characteristics, will determine the inventory's extent and the appropriate radius from the proposed ASR site.

(2) An applicant shall make a good-faith effort to obtain information from public records to identify nearby landowners and occupants and information from drilling contractors identified by a landowner or occupant who responds to the inventory.

(3) An applicant shall immediately notify the department of all objections raised by nearby landowners or other on-site problems.

(4) Well interference conflicts arising from the proposed ASR site or project shall be resolved as outlined in 567—Chapter 54 or as otherwise specified by the department.

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