



COLORADO

Division of Water Resources

Department of Natural Resources

Ground Water Commission
1313 Sherman Street, Room 821
Denver, CO 80203

July 27, 2017

To: Ground Water Commission

From: Keith Vander Horst, Chief of Water Supply, Basins *K.V.H.*

Re: Status of stakeholder process, including possible proposal to initiate the formal process, to amend Rule 5.6 regarding replacement plans and Rule 5.8 regarding artificial recharge, storage, and recovery plans

In its August 19, 2016 meeting the Commission approved a proposal that an informal stakeholder process to change Rules 5.6 and 5.8 be initiated separately from the process involving the overall rule change. Rule 5.6 deals with replacement plans and Rule 5.8 deals with aquifer storage and recover plans. The reasons for this rule change were to revise the standards of replacement plans, including aquifer storage and recovery plans. The purpose for separating this proposed rule change from the process involving the overall rule change was to expedite the change.

Staff has drafted proposed changes to the rules, has solicited written comments, and held public (a.k.a. stakeholder) meetings (three meetings were held on January 12, 2017, February 1, 2017, and April 26, 2017, with a fourth meeting scheduled for August 8, 2017) to allow interested parties to provide input on the proposed changes.

Staff has made significant changes to the proposed initial changes based on the input received. The parties participating in the process have differing views as to what the amended rules should be, and if at the August 8 meeting it does not look like resolution can be reached further informal public input to Staff will likely not be productive.

Attached is the version of the amended rules (dated July 21, 2017) proposed by Staff based on input received prior to the August 8, 2017 meeting.

Staff now comes to the Commission for its consideration and decision on how it wants to proceed with the proposed rule change.

If the Commission desires to proceed with the formal process involving this rule change, such formal process would include a filing with the Secretary of State and holding rule making hearings. If it proceeds with the formal processes, while the Commission will have to hold a rule change hearing itself, as it appears there may be opposition to the proposed change the Commission may want to consider first assigning the matter to its Hearing Officer for his recommendation.



5.6 Replacement Plans – New appropriations of designated ground water from aquifers which are otherwise overappropriated or where such appropriations may result in an unreasonable impairment to existing water rights, and operation of aquifer storage and recovery plans, may be allowed pursuant to a detailed replacement plan.

5.6.1 Requirements for approval of all replacement plans. The applicant shall have the burden of proving the adequacy of the plan in all respects.

- A. The plan must not cause any material injury to water rights of other appropriators.
- B. The plan must not cause unreasonable impairment of water quality. No unreasonable impairment shall be considered to occur if the source of replacement water or source of water to be stored in an aquifer storage and recovery plan complies with one of the criteria listed below. The applicant may present other methods of demonstrating that no unreasonable impairment will occur, but has the burden of proving that no unreasonable impairment will occur. The point of compliance is the point at which the water is introduced into the aquifer.
 - 1. The source meets the applicable water quality standards associated with the domestic use classification as established by the Water Quality Control Commission.
 - 2. The source discharges into the ground from a waste water treatment system that operates in compliance with applicable state or local standards or discharge permits.
 - 3. The source is in compliance with a ground water discharge permit issued by the Water Quality Control Commission.
 - 4. The source is not of a lower quality than the ground water classification and/or standard of the ground water into which the source will be discharged as established by the Water Quality Control Commission.
- C. The plan must not be speculative under Colorado law.
- D. The plan must be able to be operated and administered on an ongoing and reliable basis.
 - 1. Flow or other measurement devices must be required on all wells, replacement or storage water delivery structures, and any other structure involved in the plan unless the Commission finds that such devices would be unnecessary or impractical.
 - 2. Water quality sampling and monitoring of replacement water, water to be stored in the aquifer, and ground water must be required as needed to ensure that the plan operates as approved.
 - 3. Recording, maintenance of records, and submission to the Commission and Ground Water Management District must be required as needed of all information and accounting pertaining to operation of the plan. A report must be provided on forms

acceptable to the Commission, and on a schedule determined by the Commission but no less than on an annual basis.

- E. A copy of the approved plan must be recorded by the applicant in the public records of the county in which structures that recharge and withdraw water involved in the plan are located so that a title examination of the land on which such structures are located reveals the existence of the plan.

5.6.2 Requirements for approval of a replacement plan for new appropriations of designated ground water from aquifers which are otherwise overappropriated, or where such appropriations may result in an unreasonable impairment to existing water rights, have the following requirements in addition to those listed under 5.6.1.

- A. The plan must be sufficient to provide replacement water as necessary to prevent any material injury that may be caused by all diversions allowed under the plan. At all times, diversions must be limited to the extent necessary to ensure that sufficient sources of replacement water identified in the plan are legally available for use as replacement water in the plan.
- B. There may be at the time the plan is approved proposed sources of replacement water identified in the plan that are not then legally available for use as replacement water in the plan. Any proposed source of replacement water identified in the plan that is not legally available for use as replacement water in the plan at the time the plan is approved must become legally available for such use prior to actually being put to such use. The plan must provide procedures for putting to replacement use a proposed source of replacement water that is not legally available for use as replacement water in the plan at the time the plan is approved, which procedures must include the applicant providing notification, and the opportunity to object, to the Commission and all parties to any hearing process approving the plan that such source has become legally available along with documentation as to how such source became legally available and any additional information or proposed terms and conditions necessary to account for the use of the replacement source or to otherwise prevent injury from the use of the replacement source.
- C. A plan may provide procedures to allow additional or alternate sources of replacement water to be added to the plan after the plan has been approved.

5.6.3 An aquifer storage and recovery plan consisting of a detailed program that artificially recharges water into an aquifer, stores that water in an aquifer, and subsequently recovers that water from the aquifer so as to increase the supply of water available for beneficial use within a designated groundwater basin, is a replacement plan. Aquifer storage and recovery plans have the following requirements for approval, in addition to those listed under 5.6.1.

- A. The plan must ensure that, at all times, the amount of water to be stored under the plan may not exceed the amount of water available under approved sources of water that are then legally available for storage, recovery, and subsequent use pursuant to the plan.
- B. There may be identified in the plan at the time the plan is approved proposed sources of water that are then not legally available for storage, recovery, and subsequent use pursuant to the plan. Any such proposed source of water must become legally available for storage, recovery, and subsequent use pursuant to the plan prior to actually being

stored in the aquifer under the plan. The plan must include procedures for the commencement of storage of such water in the aquifer, which procedures must include the applicant providing notification to the Commission and all parties to any hearing process approving the plan that such water has become legally available along with documentation as to how such source became legally available and any additional information or proposed terms and conditions necessary to account for the storage, recovery and subsequent use of the water source pursuant to the plan or to otherwise prevent injury from the storage, recovery and subsequent use of the water source.

- C. A plan may provide procedures to allow additional or alternate sources of water to be added to the plan after the plan has been approved.
- D. The plan may contain artificial methods or man-made structures to confine or restrict the water artificially recharged and stored in the aquifer from moving within the aquifer and/or mingling with the water previously existing in the aquifer, but such methods or structures are not required.
- E. Stored water that moves away from the the ability to be recovered by the recovery wells identified in the plan becomes designated ground water available to other appropriators within the Basin. This Rule 5.6.3.(E) does not apply to water stored in plans that are subject to Rule 5.6.4.
- F. Stored water that is pumped by wells other than the recovery wells identified in the plan is not available for recovery by the applicant. This Rule 5.6.3(F) does not apply to water stored in plans that are subject to Rule 5.6.4.

5.6.4 Aquifer storage and recovery plans in aquifers for which appropriations are determined pursuant to Rule 5.3 or 5.4 have the following requirements for approval, in addition to those contained in 5.6.1 and 5.6.3

A. Definitions

- 1. "Contiguous Recovery Parcel" means a parcel that is in contact with itself so that no part is totally separated, and that overlies naturally occurring ground water to which the applicant has the right of withdrawal or to which the applicant has separate title.
- 2. "Remote Recovery Well" means the recovery of artificially recharged water from a well other than a well through which the volume of water to be recovered was artificially recharged.

- B. Wells used for artificial recharge and/or recovery must have their producing zone completed in a single aquifer, being the aquifer the water is intended to be stored in.
- C. Recovery well locations - No recovery well shall be located closer than one (1) mile to any point of contact between any natural stream including its alluvium and the outcrop/subcrop of the aquifer from which the water would be extracted.
- D. Recovery from a Confined Aquifer.
 - 1. Recovery of artificially recharged water from a confined aquifer within a designated basin shall be through the same well through which the water was injected, or shall

be through a Remote Recovery Well located within the same Contiguous Recovery Parcel, but in no case shall the Remote Recovery Well be located more than five (5) miles from the farthest artificial recharge well with the same Contiguous Recovery Parcel. If, prior to or during recovery, the aquifer becomes unconfined at any point between any artificial recharge well and the Remote Recovery Well, as determined by the Commission, recovery of artificially recharged water from the Remote Recovery Well must be subject to the provisions of recovery from an unconfined aquifer under Rule 5.6.4.E.

2. No Remote Recovery Well withdrawing artificially recharged water from a confined aquifer shall be located within the cylinder of appropriation, as calculated pursuant to Rule 4.2.15, for any existing or permitted well owned by other than the applicant, and authorized to withdraw water from the same aquifer, without the written permission of the owner of the well.
- E. Recovery from an Unconfined Aquifer. Recovery of artificially recharged water from an unconfined aquifer shall be through the same well through which the water was recharged, or shall be through a Remote Recovery Well located down hydraulic gradient from the artificial recharge well(s) and within the same Contiguous Recovery Parcel, but in no case shall the Remote Recovery Well be located more than one thousand (1,000) feet from the farthest artificial recharge well.
- F. Amount of Artificially Recharged Water Available for Recovery. The maximum amount of artificially recharged water that may be recovered from an aquifer through any one recovery well in any one calendar year shall not exceed five (5) times the maximum amount of water artificially recharged into that aquifer in any one calendar year, and in no case shall the amount of water recovered exceed the total amount of water artificially recharged into that aquifer less any amounts previously recovered.
- G. Banking. Artificially recharged water may be retained in the aquifer indefinitely by the person who has artificially recharged the water. Nothing in these rules shall limit the right of any person to withdraw naturally occurring ground water which has been "banked" pursuant to Rule 5.3.2.5.

5.6.5 Applications for replacement plans.

- A. Applications for all replacement plans must contain the following.
1. Name, mailing address, email address and telephone number of applicant(s).
 2. Name of designated basin in which plan will be located, and management district, if any.
 3. Information regarding other water rights diverted from the structures involved in the plan.
 4. Complete statement of replacement plan. Mark the locations of all structures involved and places of use on a USGS topographic map (or other appropriate map) and attach to the application.

5. Sufficient information to demonstrate that the requirements of Rule 5.6.1 are met.
 6. If required by the Commission, a ground water model that demonstrates that no material injury will result from operation of the plan, and that demonstrates that the water stored in an aquifer storage and recovery plan does not move away so as to prevent recovery by the recovery wells identified in the plan and is not pumped by wells other than the recovery wells identified in the plan.
 7. A detailed description of the proposed use of the new appropriation of designated ground water, or of the recovered water stored in an aquifer, which would result under the plan.
 8. Name(s) and address(es) of owner(s) or reputed owner(s) of the land upon which structures that recharge and withdraw water involved in the plan are located. The applicant must notify these owners that the applicant is applying for this replacement plan, and provide proof to the Commission that the applicant has done so, no later than 14 days after filing the application.
- B. Applications for plans subject to Rule 5.6.2 must contain the following in addition to what is required by Rule 5.6.5.A.
1. Sufficient information to demonstrate that the requirements of Rules 5.6.1 and 5.6.2 are met.
 2. Identification of structures causing depletions that will be replaced under the plan, including legal descriptions of their locations, and identification and copies of all decrees, permits, findings and orders and determinations issued by the Commission and Courts involving the structures.
 3. A detailed description of the proposed location, timing and amount of diversions and depletions caused by the new appropriation of designated ground water which would result under the plan.
 4. A detailed description of the physical and legal sources of all proposed replacement water. Identify and provide copies of all decrees, permits, findings and orders and determinations issued by the Commission and Courts. If a source of replacement water is not legally available for use as replacement water in the replacement plan at the time the application is submitted, the applicant must identify any applications it has or is submitting or actions it has or is taking to make the source legally available.
 5. A detailed description of the method, location, timing and amount of delivery of replacement water into the aquifer, and of the quality of the replacement water.
 6. Information demonstrating the applicant's interest in all proposed sources of replacement water.
- C. Applications for plans subject to Rule 5.6.3 must contain the following in addition to what is required by Rule 5.6.5.A.

1. Sufficient information to demonstrate that the requirements of Rules 5.6.1 and 5.6.3 are met.
 2. Identification of each aquifer applicant will utilize to recharge and store water.
 3. A detailed description of the physical and legal sources of all water proposed to be stored in the aquifer, identifying and providing copies of all decrees, permits, findings and orders and determinations issued by the Commission and Courts. If a source of water to be stored in the aquifer is not legally available for storage, recovery, and subsequent use in the aquifer storage and recovery plan at the time the application is submitted, the applicant must identify any applications it has or is submitting or actions it has or is taking to make the water legally available.
 4. Information demonstrating the applicant's interest in all proposed sources water to be stored under the plan.
 5. A detailed description of the method, location, timing and amount of the Artificial Recharge of the water into the aquifer (i.e. placed into storage), and of the quality of the water to be stored in the aquifer.
 6. Identification of structures that will recover the stored water, including legal descriptions of their locations, and identification and copies of all decrees, permits, findings and orders and determinations issued by the Commission and Courts involving the structures.
 7. A detailed description of the method, location, timing, and amount of recovery of the stored water.
- D. Applications for plans subject to Rule 5.6.4 must contain the following in addition to what is required by Rule 5.6.5.A.
1. Sufficient information to demonstrate that the requirements of Rules 5.6.1, 5.6.3 and 5.6.4 are met.
 2. The items required by Rules 5.6.5.C.2, 3, 4, 5, 6, and 7.
 3. A report summarizing the hydrological conditions in the aquifer, including, but not limited to, evidence as to whether the aquifer is confined or unconfined at the artificial recharge well(s) and any Remote Recovery Well(s) and any location between those wells, static water levels, and aquifer hydraulic gradient. The report must include an accounting of the proposed timing, amount, and location(s) of artificially recharged water and recovered water. The report must identify all large capacity wells of record in the State Engineer's office allowing the withdrawal of ground water from the same aquifer within one (1) mile of the proposed recovery site(s), and the cylinder of appropriation of those wells as calculated pursuant to Rule 4.2.15.

5.6.6 A well used for recovery of artificially recharged and stored water under an aquifer storage and recovery plan must be permitted for such use by the Commission. Other than approval of a replacement plan or an aquifer storage and recovery plan the Commission does not permit or license the physical act of Artificial Recharge, and the applicant is responsible for

obtaining any and all necessary approvals for Artificial Recharge as may be required by federal, state, and local agencies. A well permit from the State Engineer is required for the construction of a well to be used solely for the purpose of Artificial Recharge.

5.6.7 Upon receipt of an application for a replacement plan, including a replacement plan that consists of an aquifer storage and recovery plan, the staff shall review it to determine whether the plan is complete under Section 37-90-107.5, C.R.S., and is adequate to meet the criteria under these rules and the provisions of Section 37-90-107, C.R.S. If the plan is located within a ground water management district, a copy of the application shall be sent by the staff to the management district and the staff shall consider any comments or recommendations from the management district. At any time, the staff may propose any additional terms and conditions or limitations which are necessary to prevent material injury and meet the requirements of these rules.

5.6.8 The Commission retains jurisdiction to modify or revoke approval of a replacement plan if monitoring or operating experience reveals that the plan results in any material injury to water rights of other appropriators or in unreasonable impairment to water quality. Retained jurisdiction by the Commission may be limited in duration.

5.8 Removed