

2021-11-10. These are draft Measurement Rules to be used for the purpose of facilitating the input from stakeholders during stakeholder meetings. These draft rules are subject to change.

## DEPARTMENT OF NATURAL RESOURCES

### Division of Water Resources

#### **RULES AND REGULATIONS FOR IMPLEMENTING THE STATE AND DIVISION ENGINEERS' STATUTORY AUTHORITY TO REQUIRE THE INSTALLATION OF DIVERSION STRUCTURES AND THE MEASUREMENT OF DIVERSION, STORAGE, AND RELEASE OF SURFACE AND GROUNDWATER IN WATER DIVISION 6.**

##### **18.1. Title**

The Title of these rules and regulations is "Rules and Regulations for implementing the State and Division Engineers' Statutory Authority to Require the Installation of Diversion Structures and the Measurement of Diversion, Storage, and Release of Surface and Groundwater in Water Division 6." The short title of these rules and regulations is "Water Diversion, Storage, and Measurement Rules for Water Division 6" and in this document these rules and regulations may be referred to as "Rules."

##### **18.2 Authority**

These Rules are adopted pursuant to the State Engineer's authority under section 37-80-102(g), C.R.S., and according to the provisions in the State Administrative Procedures Act, section 24-4-101 et seq. (the "APA"), C.R.S.

##### **18.3 Scope and Purpose of the Rules**

- A. These rules are applicable to all surface water diversions, groundwater diversions, and reservoir storage, within Water Division 6, as defined in 37-92-201(1)(f), C.R.S., except
1. Permitted or unregistered wells that operate pursuant to the provisions of section 37-92-602(1), C.R.S.;
  2. Ponds that fill during spring runoff and are not situated on a stream or filled by a diversion from a stream; *{SEO Note: We will continue to develop this exception}*
  3. Head stabilization ponds;
  4. Surface water diversions, including springs, for ordinary household purposes in no more than three single-family dwellings, fire protection, watering of domestic animals, and the irrigation of not over one acre of home gardens and lawns;
  5. Livestock Water Tanks, as described in section 35-49-103, C.R.S.;
  6. Erosion Control Dams, as described in section 37-87-122, C.R.S.; and
  7. A diversion that is certified by the Division Engineer to be inactive.

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- B. The purpose of these Rules is to establish consistent and reliable standards to assist Water Users in their compliance with statutory provisions regarding the diversion, measurement, and storage of water. These statutory provisions are found in Title 37, Articles 84 and 92 of the Colorado Revised Statutes.

Specifically, the purpose of these Rules is to:

1. Establish standards for the selection and installation of Headgates and Measurement Methods for the purpose of controlling and measuring Diversions of water for beneficial use.
2. Establish consistent and reliable standards for the recording and reporting of water diversion data and the means by which the Division Engineer will acquire the data.
3. Establish consistent and reliable standards for assessing compliance with the Division Engineer's authority to enforce the statutory requirement for installation of Headgates and Measurement Methods.

#### **18.4 Definitions**

- A. Definitions: Any term used in these Rules that is defined in Title 37 of the Colorado Revised Statutes has the same meaning given therein unless the context requires otherwise.
1. "Alternative Measurement Method" means a Measurement Method that does not meet the definition of a Measuring Device, and is used to determine the Flow Rate, Total Volume, or the amount of water stored in a reservoir, within the standards of accuracy identified in these Rules.
  2. "Beneficial Use" means the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made and as more fully defined in section 37-92-103(4), C.R.S.
  3. "Diversion Structure" means a structure designed to control and Divert water.
  4. "Diversion" or "Divert" means removing water from its natural course or location or controlling water in its natural course or location, by means of a control structure, ditch, canal, flume, reservoir, bypass, pipeline, conduit, well, pump or other structure and as more fully defined in section 37-92-103(7), C.R.S.

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5. “Flow Rate” means instantaneous flow, usually expressed in gallons per minute or cubic feet per second.
6. “Groundwater” means any water not visible on the surface of the ground under natural conditions, as more fully defined in section 37-90-103(19), C.R.S.
7. “Headgate” means a permanently installed combination of controllable, lockable (if necessary) device, embankments, diversion dam, or any other means that provides for the Diversion of water when in priority or otherwise authorized by law and prevents the Diversion of water, intentional or otherwise, when not in priority or that cannot be beneficially used.
8. “Measuring Device” means a Measurement Method that is permanently-installed equipment used to directly determine the Flow Rate, Total Volume, or volume of water stored in a reservoir, within the standards of accuracy identified in these Rules.
9. “Measurement Method” means a method to determine the Flow Rate, Total Volume, or volume of water stored in a reservoir, within the standards of accuracy identified in these Rules.
10. “Notification,” “Notice,” or “Notify” to the Division Engineer means submission to the Division Engineer by mail or email of a written message, or, where specifically required by these Rules, of a completed form or other format prescribed by the State Engineer.
11. “Person” means an individual, a partnership, a corporation, a municipality, the State of Colorado, the United States, or any other legal entity, public or private, as defined in section 37-92-103(8), C.R.S.
12. “Qualified Tester” means a person who is currently certified by the State Engineer as qualified to determine the accuracy of an installed Measuring Device or Measurement Method or a hydrographer, hydrologic technician, or Professional Engineer competent in such testing.
13. “Recording Device” means any device acceptable to the Water Commissioner that is capable of recording the flow data or water level.
14. “Reservoir,” for the purpose of these rules, means a structure designed to impound and store water for future release to a designated location for a Beneficial Use or for a Beneficial Use within the Reservoir. For the purpose of the application of these Rules, a Reservoir is for the purpose of storing water according to a storage right for one or more decreed Beneficial Uses and the storage right is administered according to terms and conditions of a decree.

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15. “Total Volume” means the volume of water, usually expressed in acre-feet, that flows through a Diversion Structure over a specified period of time or that is stored and/or released from a reservoir.
  16. “Verification” or “Verified” means the test performed by a Qualified Tester to verify the accuracy of an installed Measuring Device or Alternative Measurement Method.
  17. “Water Right” means a right to use in accordance with its priority a certain portion of the waters of the state by reason of the appropriation of the same. Section 37-92-103(12), C.R.S.
  18. “Water User” or “User” means a Person who owns or uses a Diversion Structure and/or the associated Water Right.
  19. “Well,” as defined in section 37-92-103(14), C.R.S., means any structure or device used for the purpose or with the effect of obtaining groundwater for beneficial use from an aquifer.
- B. Other Definitions. All other words used herein shall be given their usual, customary, and accepted meanings. All words of a technical or legal nature specific to the State of Colorado water rights administration shall be given the meaning that is generally accepted within that field. Any term used in these Rules not defined herein that is defined in other Rules and Regulations of the State Engineer shall have the same meaning given therein.

### **18.5 Headgate Requirements**

All diversions of surface water within the scope of these rules shall have a Headgate or other means of controlling the diversion. Headgates shall allow the Water Commissioner to accurately adjust the flow of water with reasonable effort and within a reasonable amount of time and to secure the structure at the adjusted condition so as to prevent any unauthorized diversion or adjustment.

### **18.6 Measurement Methods and Recording Requirements**

All Diversion Structures within the scope of these Rules shall either (1) be equipped with a Measuring Device or an Alternative Measurement Method that meets the requirements of Rule 18.6.A and is approved by the Division Engineer as described in Section 18.7, or (2) be declared inactive. All Measuring Methods must be tamper resistant. The Division Engineer may require a wasteway downstream of the Diversion Structure’s Measurement Method for the purpose of returning excess Diversions to the stream and may require the installation of a Measuring Device or Alternative Measurement Method at the wasteway.

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A. Measurement Method Functional Standard:

1. A Measuring Device or Alternative Measurement Method must measure Flow Rate, Total Volume, or both, depending on the defining elements of the Diversion's Water Right or plan for augmentation, if applicable.
2. A Measuring Device or Alternative Measurement Method shall accurately measure flows to within  $\pm 5$  percent of the standard rating (or an empirically created custom rating) for the device throughout the full range of anticipated flows. *{SEO Note: We may consider a standard of  $\pm$  a flow rate instead of a percentage for small Flow Rates below a threshold.}*
3. A Measuring Device or Alternative Measurement Method must be located within reasonable proximity of the Diversion Structure to enable the Water Commissioner to observe the effect of Headgate adjustments.
4. A Measuring Device or Alternative Measurement Method must be properly installed or calibrated to engineering specifications to ensure proper measurement.
5. A Measuring Device or Alternative Measurement Method must be maintained by the User in a condition to provide accurate measurement throughout the full anticipated range of Flow Rate or volume of water stored in a Reservoir
6. A Measuring Device or Alternative Measurement Method shall not be deemed complete until such time that a rating table, accurately calibrated to the Measuring Device or Alternative Measurement Method, or stage-capacity table, as applicable, has been made available to the Water Commissioner unless such rating table is for a standard flume, weir, or meter.
7. Off-stream Reservoirs require:
  - a. Measuring Devices or Alternative Measurement Methods at the point of Diversion of the structure used to deliver water to a Reservoir;
  - b. a Measuring Device or Alternate Measurement Method to measure stage and volume of water in storage; and
  - c. a Measuring Device or Alternate Measurement Method to measure releases. Measurement of releases may also be made by calibrated release tables, gaging, or by calculation of change in storage.

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8. On-stream Reservoirs require:

- a. a Measuring Device or Alternate Measurement Method to measure stage and volume of water in storage; and
- b. a Measuring Device or Alternate Measurement Method to measure releases. Measurement of releases may also be made by calibrated release tables or gaging, sufficient to determine or calculate evaporation, inflows, and outflows.

B. Recording Device Functional Standard

1. A Recording Device may be required pursuant to the terms and conditions of a water court decree, terms and conditions of a well permit, or as may be reasonably required by the Division Engineer.
2. Where required, a Recording Device shall be a device acceptable to the Water Commissioner that is capable of continuous recording of stage data at a resolution of 0.01 foot or other equivalent positive determinant of Flow Rate at a resolution of comparable accuracy through an approved Measuring Device at no greater than 15-minute intervals over a period of time.
3. Where required, a Recording Device must include a means to verify on-site that the device is properly calibrated.
4. Where required, such Recording Device shall not be deemed complete and acceptable until all equipment and software necessary to download and process recorded data is supplied to the Water Commissioner and/or the Division Engineer.

C. Temporary Measurement Method

1. In the instance where an accepted Measuring Device or Alternative Measurement Method is incapable of accurately measuring flows, the Division Engineer may allow a temporary Measurement Method until the Measuring Device or Alternative Measurement Method can be repaired, replaced, or restored.

D. Measurement Method Verification

1. The Division Engineer may require that a Measuring Device be rated or verified to be operating properly. Such verification shall be conducted by a Qualified Tester.

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2. Alternative Measurement Methods shall be rated or verified {at a frequency}. Such verification shall be conducted by a Qualified Tester. {SEO Note: the Rules may define a frequency for verification}
3. A report of the verification testing shall be provided to the Division Engineer on a form developed by the State Engineer.
4. All flow measuring equipment used to certify the accuracy and working condition of Measuring Devices and Alternative Measurement Methods in the field must be calibrated every two years to be accurate within plus or minus 2 percent, unless a variance is granted by the Division Engineer. Calibration and certification of accuracy of such testing equipment must be accomplished by a facility qualified and equipped to certify a test meter as accurate in accordance with this rule using National Institute of Standards and Technology (NIST) traceable standards.

#### **18.7 Approval of Measurement Method**

- A. To comply with these rules, each Measurement Method is subject to approval by the Division Engineer.
  1. For the purpose of obtaining approval of the use of a Measurement Method, and in compliance with the phase in provisions of Rule 18.16, the Water User of a pre-existing Measurement Method, the Water User of a newly installed or reinstalled Measurement Method, and the Water User of a changed Measurement Method shall provide Notice, to the Division Engineer or the Division Engineer's delegate, that includes the following information: (1) Person's Name, (2) Diversion Structure Name, (3) Decree (if applicable), (4) Legal Description (PLSS quarter-quarter, section, township and range or UTM coordinates) of the Diversion, (5) Measuring Device installed, (6) Rating table for measuring device (if non-standard), and/or a stage-capacity table in the case of a Reservoir, and (7) the date of installation.
  2. To obtain approval of a Measuring Device, the Water User must provide evidence that the Measuring Device is properly rated and properly installed.
  3. To obtain approval of an Alternative Measurement Method, the Water User must provide the basis for the use of an Alternative Measurement Method, including, but not limited to assumptions, field conditions, and calculations, to the satisfaction of the Division Engineer, to ensure that the Division Engineer can accurately determine that the Alternative Measurement Method will operate according to the accuracy standards identified in these Rules.

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## **18.8 Data Recording and Data Submission**

Each Diversion Structure subject to these rules shall have its Diversions recorded by the Water Commissioner or the Water User. The Division Engineer, in cooperation with the Water User, will determine each of their responsibilities. The Water User shall report to the Water Commissioner, in a format prescribed by the Division Engineer, the amount of water diverted at the Diversion Structure during the preceding irrigation year (November 1 through October 31) no later than November 15, or as required by a decree, or according to the frequency determined by the Division Engineer.

## **18.9 Noncompliance**

*{SEO Note: This section will describe the Division Engineer's statutory authority to obtain compliance with the statutory authority to order Headgates and Measurement Methods}*

## **18.10 Variance**

When the strict application of any provisions of these Rules would cause undue hardship, the Division Engineer may grant a variance. Any request for a variance shall be made to the Division Engineer, in a format prescribed by the State Engineer, and shall state the basis for the requested variance and provide supporting documentation. If the Division Engineer finds the request justifiable, the Division Engineer may issue a written order granting the variance and setting forth the terms and conditions on which the variance is granted. Variance requests are granted at the sole discretion of the State or Division Engineer.

## **18.11 Effect of Rules on Other Diversions**

## **18.12 Process to Appeal a Decision under These Rules.**

*{SEO Note: This section will describe the water user's right to appeal a decision of the Division Engineer in the application of the Rules.}*

## **18.13 Severability**

If any portion of these Rules is found to be invalid, the remaining portion of the Rules shall remain in force and in effect.

## **18.14 Revisions**

These Rules may be revised in accordance with section 24-4-103, C.R.S., and 2 CCR 402-5.

## **18.15 Statement of Basis and Purpose Incorporated by Reference**

The Statement of Basis and Purpose for these Rules is incorporated herein as part of these Rules.



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#### **18.16 Phase In**

- A. In order to allow Water Users the time necessary to come into compliance with these Rules, the Division Engineer shall set scheduled dates for installation of Measuring Devices or Alternate Measuring Methods and the approval of such based on a geographic area or type of diversion.
- B. Water Users are not in violation of Rules 18.5 or 18.6 if they meet the following criteria:
  - 1. The structure is in a geographic area where the Division Engineer has designated a scheduled date for installation of Measuring Devices or Alternate Measurement Methods, and that date has not passed, or
  - 2. The structure is in a type of diversion where the Division Engineer has designated a scheduled date for installation of Measuring Devices or Alternate Measurement Methods and that date has not passed.
- C. Upon a showing of good cause the State Engineer may extend the compliance deadlines of Rule 18.16.A for one or more periods of time not exceeding one year each and may impose such terms and conditions as part of such extension as the State Engineer deems reasonably necessary to ensure compliance with the requirements of the Rules. Good cause requires that the Water User demonstrate that it has been diligent in its efforts to comply with the requirements of these Rules, has made substantial progress in complying with the requirements of these Rules, and despite its diligent and good faith efforts has been unable to fully comply with the requirements of these Rules. The Water User must also provide an estimate of the amount of additional time required for it to fully comply with the Rules and such other information as the State Engineer may reasonably require in order to evaluate a request for an extension of time.

#### **18.17 Effective Date**

These Rules, as adopted by the State Engineer, shall become effective on XXXXX XX, 20XX and shall remain in effect until amended as provided by law. IT IS FURTHER ORDERED that any persons wishing to protest these Rules may do so in the manner provided in sections 24-4-101 et seq., C.R.S., (the State Administrative Procedure Act).

Submitted on this XXXX day of XXXXXX, XX

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Kevin G. Rein, P.E.

State Engineer