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 ~~authority~~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. Certain ponds *{we will continue to develop this exception}*
3. Surface water diversions, including springs, for domestic uses at a single residence limited to household purposes, fire protection, watering of domestic animals, and the irrigation of not over one acre of home gardens and lawns
4. Livestock Water Tanks, as described in section 35-49-103, C.R.S
~~1.~~5. Erosion Control Dams, as described in section 37-87-122, C.R.S.

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

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Specifically, the purpose of these Rules is to:

1. Establish standards for the selection and installation of ~~measuring devices~~headgates and Measurement Methods at water diversion structures 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 measuring devices.

~~4. Provide for a reasonable schedule by which compliance of these Rules will be determined, according to the Division Engineer.~~

18.4 ~~Applicability~~

~~The provisions of this section shall be applicable to all diversions requiring administration for interstate and intrastate purposes.~~

~~18.5~~ Definitions

A. ~~Statutory~~ Definitions: ~~The terms listed below have the identical meaning as~~Any term used in ~~the referenced statutes~~

~~1. "Ground Water," also referred to as "underground water,"~~these Rules that is defined in ~~section~~Title 37~~-91-102(7), C.R.S.~~

~~2. "Nontributary groundwater" is defined in section 37-90-103(10.5) C.R.S.~~

~~B. Specific Definitions: Unless expressly stated otherwise or~~ of the Colorado Revised Statutes has the same meaning given therein unless the context ~~otherwise~~ requires~~:~~ otherwise.

1. "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.

2. ~~"Interstate Compact or Interstate Apportionment" refers to the Colorado River Compact, the Upper Colorado River Compact, the North Platte Decree, and/or the Pot Creek Memorandum of Understanding.~~

~~3.~~ "Diversion Structure" means a structure designed to ~~remove water from a stream or from an aquifer.~~

~~4. "~~Divert~~"~~ water and control water by means ~~to remove water from a stream or withdraw water from a Well.~~

~~5~~of a Headgate

3. "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..

4. "Flow Rate" means the instantaneous flow flowing through a Diversion Structure; usually expressed in gallons per minute or cubic feet per second.

5. "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.

6. "Headgate" means a permanently installed combination of controllable, lockable ~~headgate~~(if necessary) device, embankments, diversion dam, or any other means that provides for the Diversion of water when in priority and prevents ~~any~~the Diversion of water, intentional or otherwise, when not in priority or that cannot be beneficially used.

~~6~~7. "Measuring Device ~~or Meter~~" means any flow measuring device, including a flow meter, that can be demonstrated to accurately measure flows ~~within ± 5% of the standard rating (or an empirically created custom rating) for the device~~ throughout the full range of anticipated flows; and any measuring device that can demonstrate the volume of water stored in a Reservoir.

~~7~~8. "Measurement Method" means an approved method for measuring the Diversion of water.

9. "Notification", "Notice", or "Notify" to the Division Engineer means submission to the Division Engineer by mail, facsimile, 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.

~~8~~10. "Person" means an individual, a partnership~~, an association~~, 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.

~~9~~11. "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 ~~measuring~~Measurement Method or a hydrographer, hydrologic technician, or Professional Engineer competent in such testing.

~~10. "Record" means the record of Diversions for a Diversion. A Record is produced from observations of diversions and/or from recording device data.~~

~~11. "Recorder or~~ 12. "Recording Device" means any 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 discharge at a resolution of comparable precision through an approved measurement device at no greater than 15-minute intervals over a period of time~~recording the flow data or water level.

~~12~~13. "Reservoir" means a structure designed to impound and store water for future release to a designated location for a Beneficial Use. 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.

~~13. "Returns or Wasteway~~14. ~~" means a diversion from a ditch to return unneeded water to the stream or to balance the diversion rate and to avoid overtopping of a ditch by returning water to the stream.~~

"Total Volume" means the volume of water, usually expressed in acre-feet, flowing through a Diversion Structure over a specified period of time. For example, acre-feet per year.

~~14.~~

~~"Storage or Stored Water" means water stored in a Reservoir for later Beneficial Use~~

15. "Verification~~",~~" or "Verified~~", or "Measurement Method Verification~~" means the test performed by a Qualified Tester to verify the accuracy of an installed measuring device or method of measurement.

16. ~~"Waste" means water diverted in excess of the immediately required Beneficial Use. Waste may include 'push' water needed to efficiently operate the ditch which waste is eventually returned to the stream.~~

~~17. "Water Right' means a right to divert and~~ "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. (37-92-103(12), C.R.S.)

17. ~~18.~~ "Water User" or "User" means a Person who owns or uses a Diversion Structure and/or the associated Water Right.

~~19.~~ 18. "Well" means: as defined in 37-~~91~~92-103(~~21~~14) means any structure or device used for the purpose or with the effect of obtaining groundwater for beneficial use from an aquifer.

~~C~~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.~~6~~5 Headgate Requirements

All diversions of surface water ~~or Groundwater~~ within the scope of these rules shall have a ~~permanently installed combination of controllable, lockable headgate; embankments; and a diversion dam, or any other means that prevents any diversion of water, intentional or otherwise, when not in priority or that cannot be beneficially used.~~Headgate. Headgates shall allow ~~the~~Division of Water ~~Commissioner~~Resources staff 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.~~7~~6 Measurement Methods and Requirements

All ~~diversions~~Diversion Structures within the scope of these Rules shall either (1) be equipped with a ~~verified measuring device~~ Measuring Device or an alternative Measurement Method that ~~meets~~meet the requirements of Rule 18.7.A~~,~~; or (2) be ~~equipped with a verified Alternative Method of Measurement that meets the requirements of Rule 18.7.C; or (3) be~~ declared Inactive in accordance with Rule 18.~~10~~9. All Measuring Devices must be tamper resistant. The Division Engineer may require ~~Wasteways or Returns that are~~a wasteway downstream of the ~~diversion's~~Diversion Structure's Measuring Device for the purpose of returning excess Diversions to the stream and require the installation of a Measuring Device or other acceptable Measurement Method at the wasteway.

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A. ~~Measuring Device~~ Measurement Method Functional Standard:

~~1. {Accuracy Standards}~~

~~2. {Measuring Device location}~~

~~3. {Installation standards}~~

~~4. {Measuring Device rating criteria}~~

~~6. {Reservoir standards}~~

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; and whether the Diversion is limited to a Total Volume for a period of time and/or a Flow Rate.

2. A Measuring Device or alternative Measurement Method shall accurately measure flows to within ± 5% of the standard rating (or an empirically created custom rating) for the device throughout the full range of anticipated flows.

3. A Measuring Device or alternative Measurement Method must be located within reasonable proximity of the Diversion Structure to enable the Water Commissioner to promptly observe headgate adjustments.

4. A Measuring Device or alternative Measurement Method must be properly installed to engineering specifications to ensure proper measurement.

5. A Measuring Device or alternative Measurement Method must be maintained in a condition to provide accurate measurement throughout the full anticipated range of flows.

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, 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 Measuring Devices at the point of Diversion, a Measuring Device or method to measure stage and volume stored or in storage, and measurement of releases. Measurement of releases may be made by calibrated release tables, gaging, or by calculation of change in storage.

8. On-stream Reservoirs require Measuring Devices to record stage and volume of water stored or in storage, and calibrated release tables or gaging, sufficient to determine or calculate inflows and outflows.

B. Recording Device Functional Standard

1. ~~*{Conditions under which a recording device is required}*~~

~~2. *{*~~ A Recording Device ~~*precision*~~may be required pursuant to the terms and ~~*frequency*~~conditions of ~~*data recording}*~~a water court decree, terms and conditions of a well permit, or at the discretion of the Division Engineer.

2. Where required, a ~~3. *{Recording device verification}*~~

~~C.~~ 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 to the gage height or other flow rate determinant.

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 Alternative ~~Method of~~ Measurement~~, Temporary Malfunction~~ Method

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

D. Measurement Method Verification

~~1.~~

~~E. Testing Equipment Calibration~~

~~1.~~

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. *{Note, for some Measurement methods, the Rules may define a frequency for verification}*

2. A report of the verification testing shall be provided to the Division Engineer on a form developed by the State Engineer.

3. 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%, 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 to this rule using National Institute of Standards and Technology (NIST) traceable standards.

18.~~8~~7 Notice of Compliance

~~All~~1. Upon installation or reinstallation of a Measuring Device, Water Users diverting water subject to these Rules shall provide Notice to the Division Engineer, on a form prescribed by the State Engineer that includes: (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 (7) the date of installation.

~~*{Details of phasing in the implementation of the Rules}*~~

2. The Person owning the Diversion Structure must immediately Notify the Division Engineer of any change of method of measurement. Such Notice shall be provided in a format as prescribed by the State Engineer within 30 days of such change.

18.~~9~~8 Data Submission

A. Reporting

Each ~~water right~~Diversion Structure subject to these rules shall have its ~~diversions~~Dversions recorded by the Division Engineer's staff and/or the Water User. The responsibility of each party will be determined by the Division Engineer in cooperation with the Water User. The Water User shall report in a format prescribed by the Division Engineer, the amounts of water diverted at the Diversion Structure no later than November 15. Amounts diverted shall be reported according to the frequency determined by the Division Engineer.

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18.~~10~~9 Inactive Diversion

18.~~11~~10 Water not to be Diverted

No water shall be diverted through any Diversion Structure that is subject to and not in compliance with these Rules except to verify the Measurement Method.

18.~~12~~11 Noncompliance

18.~~13~~12 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, with supporting documentation, for the requested variance. 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.~~14~~13 Effect of Rules on Other Diversions

18.~~15~~14 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.~~16~~15 Revisions

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

18.~~17~~16 Statement of Basis and Purpose Incorporated by Reference

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

~~Phase In??~~

18.~~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