RULES GOVERNING THE MEASUREMENT OF GROUND WATER DIVERSIONS LOCATED IN WATER DIVISION NO. 3, THE RIO GRANDE BASIN

AUTHORIZATION

In order for the State Engineer and Division Engineer for Water Division No. 3 to obtain information needed for administration of the waters in Water Division No. 3 (the Rio Grande Basin within the State of Colorado) and to assist in compliance with the Rio Grande Compact, it is necessary to adopt rules governing the measurement of ground water diversions located in Water Division No. 3. The State Engineer's authority to promulgate these rules is based on section 37-80-l02(g), C.R.S., which vests rulemaking authority for the Division of Water Resources in the State Engineer; section 37-80-104, C.R.S., which authorizes the State Engineer to make and enforce such regulations with respect to deliveries of water as will enable the State of Colorado to meet its compact obligations; section 37-92-50l, C.R.S., which authorizes the State Engineer to adopt rules and regulations to assist in the performance of the administration, distribution and regulation of the waters of the state in accordance with the constitution of the State of Colorado, the provisions of Article 92 (The Water Rights Determination and Administration Act of 1969) and other applicable laws; section 37-92-502(5) (a), C.R.S., which authorizes the State Engineer to order any owner or user of a water right to install and maintain at such owner's or user's expense necessary meters, gages, or other measuring devices and to report at reasonable times to the appropriate Division Engineer the readings of such meters, gages or other measuring devices; and section 37-92-502(5) (b), C.R.S., which authorizes the State Engineer to order any person or company supplying energy used to pump ground water to provide, at reasonable times to the Division 3 Engineer, records of energy used to pump ground water.

ORDER OF THE STATE ENGINEER

IT IS ORDERED that the following rules governing the measurement of ground water diversions located in Water Division No. 3 are adopted by the State Engineer.

Rule 1. Scope. These rules are applicable to all Wells located in Water Division No. 3 except decreed and/or permitted “exempt” Wells as described in section 37-92-602 (Appendix A) and “non-exempt” Wells permitted and/or decreed for not more than 50 gallons per minute unless otherwise required by permit or decree.

Rule 2. Definitions.

2.1. The following definitions are applicable to these rules:

2.1.1. "Compound System" means a system where more than one electrical device is operated from the same electrical power meter.

2.1.2. "Complex System" means any system where the total dynamic head at the pump will vary due to multiple discharge locations in a pipeline, or where the method of delivery will vary between open discharge, gated pipe, or sprinkler system during a single irrigation season, or where multiple Wells discharge into a common pipeline.

2.1.3. "Inactive Well" means any Well that is not in use and is disconnected from a power source.

2.1.4. "Qualified Well Tester" means a person or entity who is annually certified by the State Engineer as qualified to determine the accuracy of a flow meter, perform a power conversion coefficient test on a Well, and perform a Well efficiency test.

2.1.5. "Well" means any structure or device used for the purpose or with the effect of obtaining ground water for beneficial use from an aquifer.

2.1.6. "Confined Aquifer" means the geologic formations, groups of formations, or parts of formations underlying portions of Water Division 3 consisting in part of unconsolidated clays, silts, sands, gravels, and interbedded volcanic rock and containing saturated permeable material that yields water under artesian pressure that is or may be extracted and applied to beneficial use. The Confined Aquifer includes any formation, group of formations, or part of a formation containing saturated permeable material that yielded water under artesian pressure during the period of 1978-2000, whether or not the water level in the formation, group of formations, or part of a formation is under artesian pressure conditions at the time the particular Well is measured.

2.1.7. “Unconfined Aquifer” means the geologic formations, groups of formations, or parts of formations underlying portions of Water Division 3 consisting in part of unconsolidated clays, silts, sands, gravels, and interbedded volcanic rock and containing saturated permeable material that yields water under water table conditions that is or may be extracted and applied to beneficial use. The Unconfined Aquifer is generally located near the land surface.

2.1.8. “Notification” to the Division 3 Engineer means any action or method to deliver information, including but not limited to, personal contact, a telephone call, leaving a telephone message, or written or email message to the Division 3 Engineers’ Office or to the Water Commissioner that retains water administration authority in the former Water District where the subject ground water Well is located.

2.1.9. “Power Conversion Coefficient or PCC” means the amount of electrical energy expressed as kilowatt hours (KWH) consumed in pumping one acre-foot.

2.2. Any other term used in these rules that is defined in sections 37-80-102, 37-80-104, 37-90-137, 37-92-103, 37-92-501, 37-92-502, or 37-92-503 C.R.S. (as amended) shall have the same meaning given therein.

2.3. Any term used in these Rules not defined herein that is defined in other Rules and Regulations of the State Engineer applicable to Water Division No. 3 shall have the same meaning given therein.

Rule 3. Measurement Devices.

By March 1, 2007, all Wells within the scope of these rules shall either: (1) be equipped with a totalizing flow meter that is installed and maintained according to manufacturer's specifications and recommendations; (2) be equipped with an alternative method of measurement that is granted a variance pursuant to these rules; or (3) be declared inactive in accordance with Rule 7 below.

3.1 **Totalizing Flow Meters**

3.1.1 Any meter designed and manufactured for the purpose of measuring the flow of water, and that has a totalizing feature, shall be considered to be acceptable for purposes of these rules. The State Engineer may adopt written standards and specifications for the installation, calibration, testing, repair, and maintenance of meters. When a totalizing flow meter is used, it shall be the owner's responsibility to keep the meter in accurate operating condition. An installed flow meter shall be deemed to be in accurate operating condition when the flow measured by the meter is within plus or minus 5% of an independent field measurement made using calibrated test equipment. The Division 3 Engineer shall order any meter that fails to meet this standard to be recalibrated or replaced.

3.1.2 Totalizing flow meters shall be: properly verified in the field to be in accurate working condition by either a licensed pump installer, a representative of the meter manufacturer, or certified by a Qualified Well Tester if the meter is installed by a private individual when installed; contain sufficient recording digits to assure that "rollover" to zero does not occur within three years; and shall be maintained by the Well owner so as to provide a continuous, accurate record of withdrawals. Totalizing flow meters are required to be reverified in the field to be in accurate working condition by a Qualified Well Tester every four years after the date of original installation. Flow meters in existence as of the effective date of these rules, September 1, 2005, shall be certified to be in accurate working condition by a Qualified Well Tester by March 1, 2007, and re-verified to be in accurate working condition every four years thereafter.

The Well owner shall provide written proof of the verification within 45 calendar days of the meter installation or verification to the Division 3 Engineer on a form to be prescribed by the State Engineer.

3.1.3 Should a meter cease to operate accurately or fail verification at any time, the owner of the Well shall immediately Notify the Division 3 Engineer and establish a specific interim water measurement program until the meter is replaced. If the meter is not replaced and verified to be in accurate working condition within 14 calendar days of the Notification to the Division 3 Engineers' Office, the Well shall not be operated until the meter is replaced or the State Engineer grants a variance**.**

3.1.4 Should a meter fail to meet the accuracy standard, the well owner may seek a variance to use a calibration coefficient computed by a Qualified Well Tester using standards established by the State Engineer.

3.2. **Alternative Methods of Measurement.**

The State Engineer may approve a variance to the installation of a totalizing flow meter if it can be demonstrated by a Qualified Well Tester that the proposed alternative method would produce results accurate to within plus or minus 5% of the actual volume pumped over a calendar year.

3.2.1 Power Conversion Coefficient Method

3.2.1.1 The State Engineer may adopt standards and specifications for PCC testing for Wells that operate under water table conditions and are completed in the Unconfined Aquifer only. As a minimum, PCC shall: (1) be determined utilizing rating procedures approved by the State Engineer and conducted under the supervision of an individual or entity annually approved by the State Engineer to do such tests; (2) be performed when the pumping system has stabilized, i.e., both operating pressure and pumping drawdown has not changed more than 10% in the last hour; (3) have been determined by at least two ratings during the course of a single irrigation season with a minimum interval of 90 calendar days between each rating after April 1, 2006; (4) include the pumping draw down and operating pressure at the time the test was conducted; and (5) be updated at least every two years through a re-rating regime that requires at least two ratings during the course of a single irrigation with a minimum interval of 90 calendar days between each rating. The Division Engineer shall be notified in writing of the date(s) and person performing the re-rating.

Re-rating of PCC shall be required more frequently than every two years if any of the following occur:

3.2.1.2 A new or re-worked pump and/or motor are installed on the Well.

3.2.1.3 The Well is re-worked to change the yield of the Well.

3.2.1.4 The system that the pump discharges into is modified in such a manner as to change the power coefficient or the discharge of the pump.

3.2.1.5 Any other alteration to the system which changes the discharge of the pump or power coefficient.

3.2.1.6 Additional tests may also be required if the Division 3 Engineer conducts or reviews tests and determines an error was made or if annual changes in ground water levels will make a PCC based upon the prior year's testing inaccurate by 10% or more.

3.2.2 Owners and/or users of Wells within the scope of these rules who use the PCC method and whose Well discharges into a pressurized pipeline system (gated pipe or similar system) with more than one point of discharge during a normal irrigation season must submit two PCC measurements as required under the scope of these rules. One measurement must be taken under maximum head (minimum yield) and one measurement must be conducted under minimum head (maximum yield) conditions. A registered professional engineer, or a person approved upon written request to the State Engineer, must annually evaluate the range of pumping conditions and provide an analysis, which determines the representative condition and PCC for that condition. This analysis must be provided within 30 days of the initiation of pumping for that year. If the Division 3 Engineer determines that the operation of the Well does not agree with the representative condition, the lower PCC will be used to compute pumping volumes.

3.3 **Complex or Compound Systems.**

If the Well(s) are part of a Complex System or Compound System, or if the pump is not powered by electricity, or is completed in the Confined Aquifer, the owner or user of the Well must utilize a totalizing flow meter (Rules 3.1.1 and 3.1.2).

3.4 **Testing Equipment Calibration**.

All flow measuring equipment utilized in verification of accuracy and working condition in the field and/or rating of Wells must be calibrated biannually to be accurate within plus or minus 2%, unless a variance is granted by the State Engineer.

Rule 4. Notice of Compliance.

All owners of Wells within the scope of these rules who install totalizing flow meters shall provide written notice to the Division 3 Engineer by March 1, 2007, on a form to be prescribed by the State Engineer that includes: the name and address of the owner of the Well(s); the name

and address of the user of the Well(s) (if different than the owner); the Well permit number(s); the decree or case number(s); the legal description of the location of the Well(s); a legal description and map or drawing of land irrigated; the type or method of irrigation; the meter manufacturer; the meter model number; the meter size; the meter serial number(s); the volumetric units (gallons or acre-feet); the name of power utility company and power company account number (if applicable); the kilowatt hour meter reading on the date of installation (if applicable); the beginning totalizing flow meter reading; and the date of installation. The Division 3 Engineer shall be notified of any method of Well measurement changes on a form prescribed by the State Engineer.

Rule 5. Notice of Compliance with Variance Terms and Conditions.

All owners of Wells within the scope of these rules who obtain a variance from installation of a totalizing flow meter shall, by March 1, 2007, provide in writing to the Division Engineer for Water Division No. 3 such information as specified in the terms and conditions of the approved variance.

Rule 6. Data Submission.

6.1 **Annual Reporting**

All owners of Wells within the scope of these rules shall report in writing the annual amounts of water pumped from Wells for the period of November 1, to October 31 and, for irrigation Wells, the method of irrigation (flood, center-pivot, etc.), to the Division 3 Engineer no later than December 1, 2008 and every irrigation year thereafter.

6.1.1 All owners of Wells within the scope of these rules who choose to utilize the alternative power coefficient method shall provide notice in writing to the Division 3 Engineer by March 1, 2007**,** stating: (1) the name and address of the owner of the Well(s); (2) the name and address of the user of the Well(s) (if different than the owner); (3) the Well permit number(s); (4) the decree or case number(s); (5) a legal description of the Wells(s) location); (6) the power meter serial number(s); (7) the utility company name; (8) the power company account number; (9) the power coefficient; (10) the dates of power coefficient rating; (11) the kilowatt hour meter reading on the date of the power coefficient ratings; (12) the name and address of the Qualified Well Tester performing the power coefficient ratings; (13) the current transformer (C.T.) factors, if applicable; and (14) the potential transformer (P.T.) factors, if applicable. Notice to the Division 3 Engineer shall be on a form prescribed by the State Engineer. The Division 3 Engineer shall be notified of any change of method for measurement on a form to be prescribed by the State Engineer.

6.2 **Forms and Notification**

Data shall be submitted on forms prescribed by the State Engineer. Such forms shall also include

consent to release power data to the Division 3 Engineer. If the power account number associated with a Well changes for any reason, the user must notify the Division 3 Engineer of the new account number on a form prescribed by the Division 3 Engineer within 45 calendar days following the change.

Rule 7. Inactive Wells.

Inactive Wells are excluded from these rules provided that a notarized affidavit, on a form prescribed by the State Engineer, is filed with the Division 3 Engineer by March 1, 2007. Once an Inactive Well affidavit is filed with the Division 3 Engineer, no further filings are required under these rules unless the owner or user wishes to change the Well from inactive status to active status. When an owner or user desires to change an Inactive Well to active status, written Notification to the Division 3 Engineer is required prior to activation. A Well listed as inactive under this Rule 7 shall not be used until such Notification is given and the Well is in compliance with the requirements of these rules.

Rule 8. Water not to be Withdrawn.

No water shall be withdrawn from any Well that is not in compliance with these rules except to verify the accuracy of the totalizing flow meter or to verify the accuracy of an approved alternative measurement method.

Rule 9. Noncompliance.

Failure to comply with any of these rules may subject the Well owner and/or user to court proceedings and the state's costs, including reasonable attorney's fees, associated with enforcement of these rules pursuant to section 37-92-503, C.R.S. Prior to filing any court action, the Division 3 Engineer shall notify the Well owner and or user (or both if known by records maintained by the Division 3 Engineer) of the violation in writing by Certified Mail and shall advise the Well owner and/or user of the date by which the violation must be corrected to avoid court proceedings, which date shall be at least ten calendar days following the date of receipt of the notice to the Well owner and/or user or personal service of the notice on the Well owner and/or user.

Rule 10. 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.

Rule 11. Variance.

When the strict application of any provisions of these rules would cause unusual hardship, the State Engineer may grant a variance. Any request for the variance shall be made in writing and shall state the basis for the requested variance. If the State Engineer finds the request justifiable, the State Engineer may issue a written order granting the variance and setting forth the terms and conditions on which the variance is granted.

Rule 12. Effect of Rules on other Wells

Nothing in these rules shall be construed to preclude the State Engineer from requiring metering of withdrawals, periodic reporting of such withdrawals, and cessation of excessive withdrawals from Wells not covered by these rules.

Rule 13. Effect of Rules on Prior Rules of the State Engineer

As of March 1, 2007, these rules shall supercede any previous rules or regulations governing the measurement of any ground water diversions located in Water Division No. 3.

IT IS FURTHER ORDERED that these rules shall become effective on the 1st day of September 2005, and shall remain in effect until amended as provided by law. Any person desiring to protest these rules may do so in the manner provided in section 37-92-501, C.R.S. Any such protest to these rules must be filed by the end of the month following the month in which these rules are published.

Dated this 30th day of June 2005

Hal D. Simpson
State Engineer

APPENDIX A – Exempt Wells

1. Wells not exceeding fifteen gallons per minute of production and used for ordinary household purposes, fire protection, the watering of poultry, domestic animals, and livestock on farms and ranches and for the irrigation of not over one acre of home gardens and lawns but not used for more than three single-family dwellings;

2. Wells not exceeding fifteen gallons per minute of production and used for drinking and sanitary facilities in individual commercial businesses;

3. Wells to be used exclusively for fire-fighting purposes if said Wells are capped, locked, and available for use only in fighting fires;

4. Wells not exceeding fifty gallons per minute which are in production as of May 22, 1971, and were and are used for ordinary household purposes for not more than three single-family dwellings, fire protection, the watering of poultry, domestic animals, and livestock on farms and ranches and for the irrigation of not over one acre of gardens and lawns; and

5. Wells to be used exclusively for monitoring and observation purposes if said Wells are capped and locked and used only to monitor water levels or for water quality sampling.

6. Wells exempted under paragraph 1 that are the only Well on a residential site, that are used solely for ordinary household purposes inside a single-family dwelling and are not used for irrigation or are the only Well on a tract of land of thirty-five acres or more or are the only Well on a cluster development lot, serving one single-family residence, where the ratio of water usage in the cluster development does not exceed one acre-foot of annual withdrawals for each thirty-five acres within the cluster development and is used solely for the purposes specified in paragraph 1, and the return flow from such uses are returned to the same stream system in which the Well is located.