



STATEWIDE GROUNDWATER MEASUREMENT STANDARDS AND SPECIFICATIONS

On December 5, 2005, the New Mexico Office of the State Engineer (OSE) first adopted minimum specifications for devices designed to measure the diversion of underground water. This is an update to those original specifications. All groundwater measurement devices installed to meet the OSE requirements must have been previously approved and listed on the "FLOW METER LIST" prior to purchase and installation.

This list of approved meters is available on the website at: <http://www.ose.state.nm.us/Meter/>

Again, all flow meters must be approved by the OSE prior to installation. Any requests to add a meter to the current Flow Meter List of OSE acceptable meters must originate from the meter manufacturer and must include all documentation necessary to make a determination whether the meter meets the specifications established by the OSE.

Additional requirements for groundwater measurement devices may be established by the OSE on a case-by-case basis.

Specifications for Groundwater Measurement Devices

1. General Requirements

- A. Requests to add new meters to the current Flow Meter List of OSE acceptable meters must be initiated by the flow meter manufacturer and must include the meter specifications for installation and accuracy test results.
- B. All wells required by the OSE to be equipped with a totalizing meter (such as by permit condition, by rules and regulations, or by State Engineer order) shall have a meter installed before the first branch leaving the well and additional meters must be installed before each subsequent branch leading to a differently permitted diversion or type of use. There shall be no diversions between the wellhead and the first meter. All meters shall be installed, inspected, repaired, and maintained in accordance with the meter manufacturer's specifications. Each meter shall be of a type acceptable to the OSE and shall be installed, maintained and repaired to be operational in a manner that is acceptable to the OSE. The current list of acceptable meters is available on the OSE website <http://www.ose.state.nm.us/Meter/>.

- C. The meter shall be a totalizing flow meter with a rated accuracy of plus or minus two (2) percent of actual flow. The installed accuracy of the meter and any secondary equipment such as data recorders shall be within plus or minus ten (10) percent of actual flow and a design accuracy of plus or minus 2 percent under the manufacturer's specifications. The meter shall be factory calibrated or calibrated according to industry standards upon installation, and shall be tested for accuracy or re-calibrated at least once every three years thereafter.
- D. The totalizing flow meter shall measure volumes in sufficient units (Gal, BBLs or Acre-Feet) and contain sufficient recording digits to assure that "roll over" to zero does not occur within a one-year period.
- E. The totalizing flow meter must be equipped with a direct reading type totalizing register. The units of measurement and the multiplier, if any, for determining the total amount of water diverted and direction of water flow shall be indicated on the meter and clearly indicate a manufacturer unique serial number on the meter head.
- F. The meter register or display shall record total volume and instantaneous flow rate or be capable of flow rate calculation, must not be resettable and be equipped with a waterproof and tamper proof seal. The display register must always be on to allow reading even if meter is not in operation.
- G. The totalizing register and rate of flow indicator may be required to be sealed with a device or by a procedure acceptable to the OSE (e.g. a wire and lead seal) to prevent tampering or unauthorized removal.
- H. The meter shall be installed and maintained in such a manner as to prevent meter error, for example, due to the pipe being incompletely filled with water at the location of the meter.
- I. The meter shall be installed and maintained in such a manner as to prevent meter error due to the meter being too close to obstructions in the discharge pipe, such as valves, pumps, bends in the pipe or changes in pipe inner diameter. The meter shall be installed at a distance of at least 10 pipe diameters downstream, and at least five pipe diameters upstream from obstructions to flow, unless manufacturer's installation instructions specify a shorter minimum run of straight pipe.
- J. Pursuant to section 72-8-1 NMSA, the well owner shall allow the State Engineer and his representatives entry upon private property for the performance of their respective duties, including access to the well for meter reading and water level measurement. The meter shall be accessible for reading, inspection and testing by a representative of the State Engineer, including the appointed Water Master.
- K. OSE staff may periodically conduct an accuracy test of the totalizing meter and if the readings show a discrepancy of more than 10% of the volume measured, the owner of the well will be required to repair, maintain, or if necessary, replace the meter.

- L. Measurement devices in place prior to the adoption of these specifications may continue in operation as long as the device is performing in a manner acceptable to the OSE. When an existing measurement device is replaced, the replacement device shall meet the required specifications in effect at the time of replacement. Measurement devices that are found to be broken or non-functioning shall be replaced within 30 days of discovery, with the exception that alternate methods of measurement or estimation may occur with pre-approval of the OSE for 30 days or until the meter is repaired or replaced.

2. Specific Requirements:

Depending on whether a well is categorized as a well used for domestic, livestock, irrigation, municipal, commercial and/or industrial purposes, the following requirements shall apply:

- A. A domestic or livestock well shall be equipped with a totalizing flow meter with a register providing direct readings in gallons with a multiplier of 10.
- B. An irrigation well shall be equipped with a non-resettable totalizing flow meter with a register providing direct readings in gallons or barrels (with a multiplier of 100 or 1000), or acre-feet (with a decimal place to the thousandth) and the reading must be retained with non-volatile memory*.
- C. A municipal and/or industrial well shall be equipped with a non-resettable totalizing flow meter register providing direct readings in gallons or barrels (with a multiplier of 100 or 1000), or acre-feet (with a decimal place to the thousandth) and the reading must be retained with non-volatile memory*.

*(Non-volatile memory is typically a reading which is retained with backup power or by using a data logger.)

3. Meter Reporting:

Any owner of a well who installs or has installed a totalizing flow meter shall submit OSE form WR-26, detailing the specifications of the installed meter including the Make, Model, Serial Number, Units of Measurement, Multiplier, if any, and initial reading and verifying its proper installation and field verification prior to any diversion of water from the well. If a meter is replaced, the details of the replaced meter together with the final reading must be included on the form.

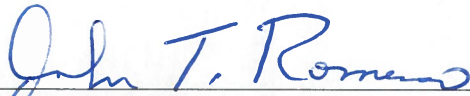
- A. Meter reports shall be filed with the State Engineer on a form or method prescribed by the state engineer based on the following usage:
 - a. Meter reporting for domestic or livestock well usage shall be submitted to the OSE, in writing, on a quarterly basis for the calendar year on or before the 10th day of January, April, July and October for the preceding 3 months.

- b. Meter reading reporting for irrigation, municipal, commercial and/or industrial usage shall be submitted to the OSE, in writing, on a monthly basis on or before the 10th day of each month for the preceding calendar month.

4. Variance:

When the strict application of any provision of these Standards and Specifications would be impracticable or would cause unreasonable hardship, the State Engineer may, at his discretion, grant a variance for a specific instance, provided a written request for the variance is filed with the OSE and the State Engineer finds the request justifiable. Variance requests must be approved for alternative methods or water measuring devices, and methods of installation, maintenance or repairs that do not conform to the minimum Standards and Specifications.

The minimum specifications for groundwater measurement devices are adopted for use this 2nd day of April, 2018.



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