

Notice of Opportunity to Qualify Ultrasonic Flow Meters  
for Participation in IDWR's Water Measurement Program

Water measurement in the State of Idaho is a requirement for water users that divert water in regulated areas from both ground and surface water sources. Data collected in these areas are reviewed and used by the Idaho Department of Water Resources (IDWR) for water management and distribution of water to senior water right holders. IDWR is currently forming a water district on the Middle Snake River where there are high lift pumping plants with large diameter piping that will require some type of totalizing flow meter equipment. An order to install measuring devices will be sent out during the second quarter of 2012 for all water rights out of the Snake River between Milner dam (8 miles west of Burley Idaho) to the Murphy Snake River Gauging Station (approximately 175 river miles) for use that is greater than five acres of irrigation and or rates of flow on the water rights that are 0.24 cfs or greater (approximately 108 gpm). Flow meters must be installed prior to the irrigation season of 2013. IDWR current standard for measurement for closed conduit applications is electromagnetic technology but recognizes that large diameter magnetic meters can be cost prohibitive in larger diameter pipe. The IDWR has been using portable ultrasonic equipment for about 15 years now and recognizes this technology can be used as permanently installed equipment on larger diameter piping.

The IDWR measuring device order for flow metering equipment will impact approximately 160 points of diversion from the river with many of those having larger than 14-inch diameter piping. The need for ultrasonic flow metering equipment will be greatest for "clamp-on" non intrusive type devices but may include the need for wetted transducer installations in retrofitting large pumping stations.

All vendors of ultrasonic type flow meters, who desire to have one or more meters identified on the list of IDWR approved flow meters under the water measurement program throughout the state, shall:

- A. Provide documentation that the meter meets or exceeds IDWR's minimum acceptable standards for closed conduit measurement identified at the following link:  
<http://www.idwr.idaho.gov/WaterManagement/WaterMeasurement/PDFs/MinAccepStand.pdf>
- B. Successfully complete the following testing requirements outlined below:
  1. All meters will be tested at the Utah Water Research Laboratory (UWRL) in Logan, Utah using a NIST traceable weight tank and/or an approved/calibrated secondary flow metering device to measure actual flows. The weight tank is a 0.15% device and the secondary meters provide 0.25% accurate flow measurements.
  2. The tests will be performed on 18 and 48-inch standard wall carbon steel pipe using standard or ideal transducer methodology for testing. This may include clamp-on, wetted or flush mounted transducer to allow for optimal performance of each meter tested (see meter installation section below\*).
  3. Two tests will be conducted for each meter that is sent to the laboratory. These will include both an 18-inch and a 48-inch pipe test. In each case, a minimum of ten diameters of straight pipe will be installed upstream and five diameters downstream of the meter location.
    - a. The 18-inch testing will include data points at velocities of 2fps, 4fps, 6fps, 8fps and 10fps with repeat measurements for these velocities.
    - b. Three additional points will be tested at 5fps, 7fps and 9fps.

- c. The 48-inch testing will include data points at velocities of 2fps, 4fps, 6fps, 8fps and 10fps with two repeat measurements for these velocities.
  - d. Four additional points will be tested at 3fps, 5fps, 7fps and 9fps.
4. Either the 4-20mA signal/pulse output or manufacturer's recommendation of output and the meter's local display will be averaged and recorded for each run.
  5. Meters submitted to UWRL for testing shall be a representative sample of the model manufactured and sold to end users and shall not be calibrated beyond normal factory default calibration and will be stated as such in a signed document by the vendor.
  6. Each meter tested must have a standard factory calibration curve submitted to IDWR and UWRL prior the time of testing.
  7. Vendors agree to release a pass or fail statement issued by UWRL to IDWR. This pass or fail statement will be in accordance with IDWR's Minimum Acceptable Standards identified in item A of the testing criteria above.
  8. Results of the testing must meet the minimum acceptable standards established by IDWR to be considered an acceptable meter.
- C. Submit to IDWR and UWRL the completed Ultrasonic Flow Meter Certification form found at:  
[http://www.idwr.idaho.gov/WaterManagement/WaterMeasurement/PDFs/Ultrasonic\\_Flow\\_Meter\\_Certification\\_Form.pdf](http://www.idwr.idaho.gov/WaterManagement/WaterMeasurement/PDFs/Ultrasonic_Flow_Meter_Certification_Form.pdf)

Vendors will ship their meters directly to the Utah Water Research Laboratory in Logan, Utah and will be required to pay the costs associated with the required testing. **Meters submitted for testing at UWRL should be shipped to 1600 Canyon Rd, Logan UT 84321. A separate mailing address is used for billing purposes at 8200 Old Main Hill, Logan UT 84322-8200.** The cost to perform this evaluation will be largely based upon the number of flow meters tested at the same time that will defray individual costs to the vendors. ***Costs quoted are based on single and multiple meters submitted to the lab:***  
***One meter: \$2600 for the 18-inch testing and \$5800 for the 48-inch testing = \$8400- (vendor assumes costs for set up if no other meters are tested at the same time)***  
***Two or Three meters: \$2200 for the 18-inch testing and \$4400 for the 48-inch testing = \$6600 (vendors share in the set up costs equally and benefit by reduced cost for the testing).***  
***Four or more meters at once: \$1800 for the 18-inch testing and \$3900 for the 48-inch testing = \$5700 (vendors share in the set up costs equally and benefit by reduced cost for the testing).***

Vendors will be allowed to submit meters in the future as technology changes and new products are added to the market. Future testing costs may change according to UWRL discretion. Testing of new meter products will be required prior to meters being approved as standard meters by IDWR.

Vendors and their meter technicians are encouraged to attend to help with meter installation and setup and to observe lab testing procedures for their meter(s). Vendors will not be allowed to physically alter or manipulate meters while in the lab beyond normal installation. Vendors who choose to observe lab testing must notify UWRL a minimum of two business days prior to scheduled meter testing date.

**\*Meter Installation-** Vendors with wetted transducer installations must have “hot tap” capabilities and must notify UWRL in advance of their test date to accommodate this setup. Installation of wetted transducers will likely increase costs to the lab and vendors with wetted transducers that require “tapping” the pipe will be responsible for the additional costs. Please contact Steve Barfuss with USU for additional costs if you are planning to submit a wetted transducer ultrasonic meter that will require “tapping” the pipe.

Questions and or inquires related to the UWRL testing for ultrasonic type flow meters should be routed to IDWR at [Corbin.knowles@idwr.idaho.gov](mailto:Corbin.knowles@idwr.idaho.gov) – 208-287-4842 or

Idaho Department of Water Resources  
C/O Corbin Knowles  
322 E Front St PO Box 83720  
Boise ID. 83720

Contract information for UWRL should be routed to Maria Gates at;  
Maria Gates  
UWRL Business Office  
(435) 797-3120  
(435)797-3102 - Fax  
[maria.gates@usu.edu](mailto:maria.gates@usu.edu)

Laboratory information for UWRL  
Steve Barfuss  
UWRL Lab  
(435) 797-3214  
[steve.barfuss@usu.edu](mailto:steve.barfuss@usu.edu)