State of Idaho
DEPARTMENT OF WATER RESOURCES
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CHAD NEIBAUR
GEM VALLEY FARMS
1550 CENTRAL RD
BANCROFT, ID 83217

Re: Flow Meters

Dear Mr. Neibaur:

Thanks for taking the time to talk to me last week about closed conduit flow meters. Attached to this letter is a list of some flow meter sales representatives and dealers. This list was compiled as a result of some of the work the Department was doing in the Wendell-Jerome-Minidoka area of the Snake Plain aquifer. The list identifies many of the people who we have been working with on meter installations and calibrations etc. It is only a sampling of some of the dealers or reps around the state and region.

In regard to your comments and/or other comments you may have heard about flow meters, I think it is inaccurate to say that there are no useful flowmeters on the market. Most flowmeters require some periodic maintenance. Some irrigation districts and municipalities in the state have been using the same flowmeters for more than 15 years because they have a regular maintenance program.

I have talked with fellow staff members about their experience with the Grainland Aquamaster meters. These are the meters recently installed in your area by Warren and Calvin Lloyd and Bart Christensen. Our staff is finding that these meters work well when properly installed, field calibrated, and maintained. One problem we are finding with these meters is that when they are exposed to moisture from being outdoors without any covering and/or exposed to sprinkler nozzles and pipe leaks, that moisture and condensation builds up in the meter display box which houses the electronics. This moisture build-up can ultimately ruin or destroy the electronics, thus making the meter inoperable. Due to this problem, we would suggest either avoiding this meter or using the meter but installing the display box and electronics in a sealed or protective box such a NEMA type box. The wire connecting the box to the pipe impeller sensor should probably be placed in a conduit as well.

As I may have mentioned last week, our experience over the past two years is showing that some of the standard propeller meters are the most accurate and reliable meters. Water Specialties is

a brand that seems to perform well. The propeller meters however do require periodic maintenance and should be removed from pipes during the winter. In addition, the installation location of these meters is important and generally requires 10 pipe diameters upstream, and five pipe diameters downstream of straight, unobstructed pipe. This requirement also applies to the impeller meters. One meter which we do not advise you to consider is any type of venturi shunt meter.

Some of our staff has very recently been inspecting and field calibrating the new miter bend meters. Staff has thus far found these meters to be accurate and capable of field calibration. Although these meters may cost more, you may be able to install them without having to modify your pipes or plumbing system. Plumbing modifications that might be required to accommodate the less expensive impeller or propeller meters could cost more than a miter bend meter or other more expensive meters which do not have moving parts.

Tech Sales of Utah in Salt Lake City sells a variety of meters including impeller and propeller meters, and more sophisticated meters, such as magnetic drive meters, with fewer or no moving parts that may be more suited to handle problems associated with debris in water.

Again, I do not believe that meters may be needed for each of your wells. A few of your wells can probably be measured by using power records. The Highway well is one that I think does not require a flow meter. The Hansen and Deep wells may also not require a meter, but that depends on how you plan to operate these wells and if they will be subject to additional transfers. You may need to file a written request to remove the measuring device condition from the approved transfers and ask to use power records or propose an alternative method instead. It is my opinion that the Dwain Christensen, Paul Christensen, Stanton and Home place wells all require flow meters because they are either inter-connected and/or have too many operating conditions to accommodate use of power records as an alternative method of measurement. If the operation of these wells can be simplified at all, then I think we can consider or discuss alternative methods.

Please contact me if you have any further questions. Other staff members here who have experience with flow meters and may help you with additional questions include Burke Scholer, Scott King and Gary Spackman.

Respectfully,

Tim Luke

cc: Wayne Waddoups
Harold Jones, Eastern Region