

## MEMORANDUM

<b>To:</b> Sierra Valley Groundwater Management District and GSA Board Members	<b>Date:</b> April 14, 2021
<b>CC:</b> Mr. Jay Huebert Mr. Ben Volk, PE, JUB Engineering	<b>Project:</b> Sierra Valley GSP
<b>FROM:</b> Dwight Smith, PG, CHg, Principal Hydrogeologist	<b>Project No:</b> SVGMD001
<b>SUBJECT:</b> Status Update – Well Flow Meter Improvements	

On April 3, 2021, Ben Volk, PE, and I joined Jay Huebert on a vane retrofit up-stream of the flow meter for a well on the Roberti Ranch. After this we made an inspection of one well that will require wellhead piping reconfiguration to improve flow meter functionality/accuracy. General discussions were had on the metering program and effort to improve the accuracy and reliability of the flow meter program.

In conjunction with Jay, we are doing a little research on differential pressure (cone) gages as an alternative to impeller or magnetic flow meters for the more complex piping configurations. These are a newer type of flow meter, and they are more expensive, but the advantage they have is that they require very little up-stream and down-stream distances from the flow meter. However, they are flanged inserts that would require appropriate flange connections into existing piping, and we are not certain about application benefits or complications for irrigation wells in Sierra Valley. Additional research is being done in this regard.

Our proposed general plan moving forward is as follows.

**May 1<sup>st</sup> and 2<sup>nd</sup>:** Dwight to join Jay for the monthly round of meter readings to gain additional understanding of the ranches and wells, and get a preliminary look the wells that will likely require piping modifications to improve flow meter accuracy.

**May 8<sup>th</sup> and 9<sup>th</sup>** (tentative & subject to Jay availability): A staff engineer and staff hydrologist/drone pilot will make piping measurements and take aerial photos for each wellhead that will require piping modifications (12-14 wells). This information will be used to prepare base maps and engineering drawings for discharge piping reconfigurations.

**May and June:** Engineering drawings will be prepared for each wellhead requiring piping redesign to improve flow meter accuracies. Proposed designs will be provided as draft to SVGMD for review. Upon receipt of design review comments, the drawings will be finalized, and McGinley can assist SVGMD with preparing a bid package for contractor work, subject to the conditions of the grant funding.

It is envisioned that most wellhead piping work will be completed in the fall 2021 after the conclusion of the irrigation season (Sept/Oct), but perhaps some of the simpler (quicker) wellhead retrofits may be done between irrigation periods in July or August, subject to contracting.