

MEMORANDUM

Date: November 22, 2010
To: Water Right File 72-7536
From: medl
Re: license review

Applicant

The Idaho Falls PO Box address of record for Santee is different than the address given by the tax records or WMIS. The address has been updated in WR database.

According to Custer County taxlot information in ArcMap, the BLM owns a portion of the property irrigated by this water right. This is not correct. I requested and received confirmation of land ownership from the state office of the BLM.

Source and POD

The field examiner found two wells. However, there are 3 well driller s reports to wells in this vicinity; only one well is described as irrigation. I requested confirmation of the well locations from the permit holder. The permit holder identified three well locations on the aerial photo I had provided. I created the POD shapes based on that aerial photo. Although one well is located in a different QQs from those listed on the permit, the permitted locations and the actual well locations are within the same government lot; Lot 8. A licensing amendment will not be required.

I have consulted with the WD 170 watermaster. He had found only one well in a recent field inventory. The Groundwater protection and WMIS location records for the 3 PODs are also incomplete. I will provide copies of my findings to those groups to facilitate updates to their databases.

Water Use

Contemporary aerial photography shows property under the pivot is regularly irrigated. The examiner measured water use at the pivot but did not provide a pressure reading or details about the pivot design. I requested and received additional pivot design information from the permit holder.

The two wells supplying water to this system are each fitted with a pump. The more productive well (Driller s Report 72-96-S-0036) has a 10 hp pump. The other well (Driller s Report 72-96-S-0036) has a 7.5 hp pump. Both well-pump pairs are tied to the single mainline which provides water to the pivot. I believe that the two pumps are configured to operate serially in order to overcome larger system head loss than one pump can handle alone.

In a serial configuration the capacity of the system is the capacity of the larger pump. In this case that would be approximately 0.4 cfs.

Place of Use

The total acreage recommended by the examiner included acreage in the NWSW which was not obviously covered by the pivot irrigation system. I created the POU shape by comparing several years of aerial photography and that shape does not include acres outside of the pivot radius. The right holder confirmed that the place-of-use I created was correct.

The application stated that claim 72-4173 was also used on the place-of-use. I found that there is some overlap in the place-of-use and photos from the field exam show stock on the pivot- irrigated pasture.

Status and Combined Use

Water District 170 has been established since the field examiner confirmed this water use. The amended permit was approved in 1997 and was conditioned to advise the permit holder that measuring devices could be required. The control works and measuring devices were required by order in 2007 but may not be in place.

Calculations

I disagree with the volume recommended by the examiner. The current season-of-use is different than the examiner recommended and the examiner used a different headgate requirement to calculate a

volume. I applied the current season to the license and used the correct season of use and field headgate requirement to calculate the volumes.

The calculation of volume V_{DR} is: Diversion rate (cfs) x Irrigation season (days) x conversion factor
In this case $V_{DR} = 0.28 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 118.85$ which rounds to 118.9 AF.

The calculation of volume V_{IR} is: Acres Irrigated x Irrigation Requirement

In this case $V_{IR} = 29.9 \text{ acres} \times 3.5 \text{ (the field headgate requirement)} = 104.65$ which rounds to 105 AF.

The licensed volume will be the smaller of the two above volumes: 105 AF.