

MEMORANDUM

Date: August 7, 2008
To: Water Right File 22-7790
From: medl
Re: license review

Applicant

Rocky Mountain Environmental Associates has been hired by the City of Driggs to assist them with their water rights. The City of Driggs has an Application for Transfer that cannot be processed until this permit and a sibling permit for appropriation through the Lions Park well (#22-7698), are processed. Kristin Moore, Water Rights Analyst for Rocky Mountain Environmental Associates, Inc., requested that the two permits be licensed. I added Rocky Mountain Environmental as a consultant and to receive correspondence for this permit.

Source and POD

The High School well was drilled in 1998. A GPSd spatial data point collected by DEQ to represent the location of the High School well was found to be inaccurate. The true location was confirmed by consulting with the city's director of public works and is in the SE corner of the high school lot.

On October 2, 2008, I received an email from IDWR's Eastern Region office. They had received an Application for Amendment of a Permit for sibling permit 22-7698 and forwarded an electronic copy of it to use as a reference for PODs pertinent to this right.

In a 12/5/2008 email and follow-up phone conversations with Rocky Mountain Environmental Associates, I learned that they had intended to request the same amendment to permit 22-7790 but through some oversight, had failed to do so. I explained that I would amend the license to add acceptable points of diversion which I would take from those submitted in the permit amendment request for 22-7698.

The permit amendment sought to add several points of diversion representing wells that were either connected to the water system or soon will be. Based on the summary of the City of Driggs water supply system that DEQ had provided to me in September 9, 2008, two of the six additional diversion points sought in the amendment were not yet on the system. Although the Valley Center well, the Teton Creek well and the Huntsman well have been drilled, they can not be added as diversions for this water right because those wells were not yet connected to the system in 1998 when proof was submitted. I was able to add points of diversion representing the Lions Park well, (#22-7698) which is in concurrent processing, the Dalley well, and the Tank well.

A transfer will be needed to add the remaining points of diversion requested in the amendment. The consultant has been informed and has ok'ed processing this water right with 4 points of diversion.

Water Use

The initial well log shows the High School well producing 1100 gpm or 2.45 cfs and a recent measurement of the capacity of the current pumping plant shows that it can deliver 1120 gpm. But my review of the records contemporary to the 1998 proof statement does not support that rate.

The field examiners report from 2001 lists a 75-hp pump of unknown make and model as being in place. Unfortunately, the field report is very sketchy and has little information supporting beneficial use of water through this well. The High School well is the second water source in the series that city brings online as needed. No measurement was taken during the exam. The permit required measuring devices be installed and the proof form states that a measuring device is in place but no record of flow or volume were included in the exam report.

Reviewer Nate Arave (IDWR Eastern Region) recommended a flow rate value based on data pieced

together from the field exam and from results of a study that the city had done. Table 11.1-a: Water Sources – Rights and Capacity (City of Driggs Comprehensive Plan 2007-2020, p 68) is available in the water rights file and Nate has emailed me a complete copy of the plan, which is dated November 8, 2007. Unfortunately, the plan document doesn't have authorship-compiler information and has not cited the time frame of the source interview for the water data. Without confirmation that the plan's water data was valid in the time period before the field exam, it is of questionable value to this water right. The Department needs data from the time frame immediately preceding June 11, 1998, the date that the Proof Beneficial Use form was submitted for this permit. I did not use the dubious equipment information provided in the field examination report.

The City of Driggs has PWS# ID7410004. I emailed Greg Eager IDEQ Eastern Region on 9/4/2008 and informally requested City of Driggs well capacity information from him. On 9/9/2008, I received an email response from him which summarized DEQs understanding of the current capacities for the city's wells.

The limited information included in the field exam did not support any use of water from this well. On 9/9/2008 I called Jared Gunderson (City of Driggs Director of Public Works) and asked for more information on this well and the Lions Park well (#22-7698). In a follow-up email, I detailed what information I needed in order to keep from voiding the permits due to lack of proof of beneficial use. On October 10, 2008 I received a package from the City of Driggs which contained documentation supporting beneficial use through both the Lions Park well (22-7698) and the High School well (22-7790). The power records confirm use was established by the proof due dates of both permits. Permits for municipal use do not need volume determination so I did not verify the demand multipliers. I only needed an operational start date.

I reviewed the older City of Driggs water rights 22-2132, 22-7529, and 22-7530 looking for unlicensed capacity, but did not find any. The rates and capacities of these senior rights have typically been established by theoretical methods rather than by flow measurements.

Place of Use

Although the City of Driggs is within the Snake River Moratorium area, municipal permits can be licensed.

The large POU shape in department files was significantly different than the shape provided by Rocky Mountain Environmental Associates with the amendment to permit 22-7698. I requested a copy of the shape and projection files from Rocky Mountain Associates and received them on 12/5/2008. The POU shape needed a small adjustment to the projection before I was able to import it into the database.

Calculations

Until I arranged for a measurement of the current pumping plant, I used a theoretical calculation to estimate the flow rate for this well. The equation is:

$$\text{Theoretical Q} = \frac{8.8 \times \text{pump efficiency} \times \text{pump horsepower}}{\text{depth to water} + (2.31 \times \text{pressure in psi}) + \text{friction}}$$

I used the following parameters:

assumed pump efficiency = 70%

assumed total friction is negligible

pump horsepower = 75-hp (from field exam and proof of beneficial use form)

depth to water = 105 ft (from proof of beneficial use form)

pressure = 60 psi (from proof of beneficial use form)

$$\text{High School Q} = \frac{8.8 \times 0.7 \times 75}{105 + (2.31 \times 60) + 0}$$

Therefore, the flow rate from the High School well is approximately equal to 1.9 cfs or 853 gpm.

Pump curves were eventually located in the archive of the pump supplier and copies of them were supplied to me on 2/23/2009. Those curves support a design flow of 825 gpm or ~1.84 cfs which is the additional rate I have determined was brought to the supply system by this license.

[illegible]

