

MEMORANDUM

DATE: December 9, 2019

TO: MT Legislature Water Policy Interim Committee

FROM: Julie A. Merritt, Water Resources Specialist, WGM Group, Inc.

RE: DNRC Water Right Ownership Updates and Geocodes

Chairman Brown and members of the Water Policy Interim Committee, I would like to make the following comments regarding the on-going concerns about the Department of Natural Resources and Conservation's (DNRC) process for maintaining records of ownership on water rights.

I have been involved with the process of updating ownership records on water rights since 1995. First as a consultant for two years, then as a DNRC employee for eight years and again as a consultant for fourteen years. During my tenure at the DNRC, I was the project manager for the Water Rights Database conversion project an experience that provided me with a front row seat to the difficulties of maintaining the appropriate database structures needed to handle the complexities of the ownership update process.

Problems with the DNRC's ownership records are not new. Most commonly, difficulties arise on irrigation rights that are appurtenant to land that has been divided since the time the water right or claim was originally filed. Over the years, DNRC has invested vast amounts of time and energy into tracking ownership on such water rights. Various policies and methods have been employed in an attempt to "fix" the problem. Adding geocodes to the water rights is the latest in a long line of efforts to improve the ownership records. I know it has resulted in a far more accurate ownership record on the whole.

I regret that I was unable to attend the last conference call that was held on this issue though I did listen to the recording. There were some good points made by many and I will try to avoid repeating them.

That said, I will start with one of the points made by DNRC New Appropriations program manager, Jim Ferch, in his comments to you on November 21st,

"Maps, maps are huge."

As you all are no doubt aware, irrigated fields, aka water right places of use, don't always come in nice squares or rectangles. However, the method we have used to describe the places of use are legal land descriptions that can do no better than a

square or a rectangle. In a similar fashion, land ownership parcel boundaries are often not rectangular and generally don't follow the lines of irrigated field boundaries. However, with the parcel boundaries, we have a relatively reliable depiction of the actual shape and size of the parcels.

When the initial geocoding process was done, the rectangular grid of a water right place of use was laid over the irregularly shaped parcel boundaries resulting in many instances of false positives where geocodes of parcels that did not actually contain any part of the irrigated area were associated with certain water rights. Mr. Ferch has explained this process to you, so I won't repeat. I will simply say that this is where the issue of maps becomes so important!

Because of these discrepancies between the size and shape of parcel ownership boundaries and water right places of use, the only way to really know the actual place of use of any given water right, and thus the correct ownership, is to have a map of that right. Good maps are like gold but even a bad map can be used in conjunction with aerial photos, topographic maps, and other data to identify the actual place of use.

The biggest concern I have is that the DNRC and the Water Court have both had opportunities to leverage maps to make the ownership process clearer and more transparent to the public. Time and again they have chosen not to take advantage of those opportunities.

The DNRC has spent hundreds of thousands of person-hours using GIS software to map the places of use of tens of thousands of water rights through its WR Mapper program. In a number of Water Court basins, staff have mapped the location of the place of use and point of diversion of every historical irrigation claim. Sadly, after a hard copy map was printed and put in the file, nothing further has been done with these data. The GIS data could have been used to better inform the initial geocoding process and could still be used to better advantage to improve the process going forward. Unfortunately, these very valuable datasets generally just sit, collecting virtual dust.

Likewise, the Water Court has missed years of opportunities to make the record better. As a water rights researcher, I routinely encounter situations where water right places of use and points of diversion have been modified through the Water Court adjudication process. While all the parties to the case may completely understand and agree to those modifications in the moment, years down the road, the details have often faded. More often than not, maps that may have been submitted as part of the settlement of a case are not included in the water right file that is easily accessible to the public through the DNRC Water Right Query System. Instead, the maps get filed away in the Water Court case files which are saved and stored but not generally available to the public.

I cannot begin to describe the frustration I feel when I read in a Master's Report that a place of use and/or point of diversion were modified and a map was created but it

was not included in the documents that were saved to the water right file. Again, it doesn't even need to be a good map. Any map that gives an indication of the parties' intentions makes it far more likely that an answer to an ownership question can be readily determined.

If the DNRC and the Water Court took full advantage of the data that are already available to them, we would have a much better basis to make informed decisions about water right places of use and ultimately about water right ownership. Once this is achieved, the correct geocodes can be assigned to every water right and the process of updating ownership can be automated with a higher degree of confidence.

Two major changes need to happen:

- The DNRC must process the WR Mapper GIS data that was created in order to make it available to the public in an understandable format. Our tax dollars were used to create these datasets and, in my opinion, the value is lost if it is not made available for use. Additionally, the DNRC should consider mapping the places of use for basins that have not been examined using the WR Mapper.
- The Water Court needs to adopt a policy that a map must be saved to the claim file whenever the outcome of a Water Court case modifies the place of use or point of diversion of any water right. Ideally, the modifications would be transmitted back to the DNRC so the WR Mapper data could be updated and any geocodes corrected if necessary.

Thank you for the opportunity to comment on this matter. I firmly believe that with some focused effort, we can greatly improve the system of tracking water right ownership in Montana.